Università
Ca'Foscari
Venezia

Master's Degree

in **Languages, Economics and Institutions of Asia and North Africa**

Final thesis

Global supply chain shifting

The decoupling from China and the identification of Vietnam's future role.

Supervisor

Ch. Prof. Andrea Pontiggia

Assistant supervisor

Ch. Prof. Anna Morbiato

Graduand
Dario Venier

Matricolation number
846573

Academic year
2020/2021

前言

中国于世界经济中的角色源远流长 并具有绝对重要性。

通过其数千年的历史和文化，中国影响了贸易，制造业，并吸引了来自世界各地的商人和旅行者。经过多年的政治和经济孤立，中国恢复自己经济强国的职位，特别是在接受市场体制和改革开放之后。由1978年到2018年，中国的年度实际GDP平均增长了9.5％。

自2008年全球经济放缓以来，中国经济增速有所下降，但仍保持稳定。 但是，在过去的两年中（2019年，2020年)，主要由于中美贸易战和新冠肺炎，增长率明显下降。2020年二月，增长率超过了1976年以来的最低负值。然而，从2020年4月起，国内解除封锁后，中国经济在第二季度增长了3.2％，从前三个月6.8％的收缩中反弹。 在第三季度中国经济增长了4.9％，之后在2020年第四季度则达到了5.2％。中国成为冠状病毒大流行后第一个报告增长的主要经济体，在数月之久的冠状病毒引起的限制之后，工厂和商店重新开业。尽管预计2020年其国内生产总值将下降到1.9％，但预计在2021年将增长到8.2％。根据世界银行的官方数据和其他金融机构的预测，直到2019年，中国的国内生产总值达到143,429,000亿美元，占世界经济的11.81％和美国的66％。同年，中国人均国内生产总值（按购买力平价PPP进行调整）为16116.70美元，相当于世界平均水平的91％。中国必须在超过13亿人口中分配财富，所以在2017年排名第93位。与其他新兴市场相比，中国在人均GDP方面在金砖四国（巴西，俄罗斯，印度和中国）中排名第二，仅次于俄罗斯，其次是巴西。到2019年底，通货膨胀率达到2.9％。 尽管发生了新冠肺炎大流行，但据预测，未来几年仍将保持在2.7%的稳定水平。

另一方面，公共债务在中国引起关注。 中国债务总额占国内生产总值【GDP】的比例已长期超过美国的。 尽管与日本和一些主要欧洲国家相比，这个数字仍然很低，但估计是新兴经济体平均水平的两倍。在房地产投机泡沫层出不穷和金融体系不透明的推动下，自2008年以来，该数字翻了两番，2018年初达到GDP的317％的门槛。但是， 北京为了对付债务通胀可能打的牌有很多。

中国拥有大量外汇储备（3万亿美元）和贸易顺差（1,433亿美元)。这些金额可以共同为外部主权债务波动提供缓冲。实际上，中国是世界上最大的出口国和第二大外国直接投资接受国。

自改革开放以来，成千上万的外国公司已在该国投入了大量资金因为他们渴望打入蓬勃发展的中国市场，并获得于中国生产通常带来的竞争优势。这些离岸操作对许多公司都带来了重大的影响，帮助他们保持了全球竞争力，更是向美国和欧盟客户提供了各种各样的低成本商品。生产向中国的大规模转移意味着对全球供应链概念的重新定义。如今，供应链已遍布多个大洲，包括供应商和客户。尽管

这产生了许多优势，但是在全球范围内管理价值链的复杂性是巨大的。企业需要考虑许多不同类型的运输，包装，存储要求，逆向物流以及与地方政府的海关，税收，关税和不确定性的问题。从这个角度来看，中国一直是许多投资者的避风港。中国有利的税收制度，廉价原材料和劳动力的便捷寻找以及稳定和安全的政治制度为许多国际公司的繁荣做出了贡献。此外，物流业的发展，特别是基础设施的发展，已经帮助中国及其投资者改善了货物流通，降低了运输成本并缩短了交货时间。由于这些原因，于中国生产或采购构件变得越来越有利。为了保持市场竞争力，成千上万的公司被迫遵循这一趋势。

但是，这使全世界非常依赖中国。实际上，许多专家认为在提及全球供应链时使用中国供应链一词更为正确。目前，中国正处于转型期。政府投入大量资金使国家现代化，并准备放弃其作为“世界工厂”的声誉，以成为后工业和技术创新的领导者。

基于资源密集型制造业，低工资劳动力和廉价产品出口模式的中国经济增长已达到极限，特别是因为它留下了严重的环境问题以及经济和社会失衡。劳动力成本上升，与美国的贸易战以及最近的新冠肺炎大流行正在促使许多与中国合作的企业重新考虑其供应链战略。

与中国脱钩是近来的热门话题。

论文中，我们将首先了解中国经济增长的背景以及使中国成为经济强国的因素。之后，我们将讨论促使许多国际公司离开中国的主要因素。然后，我们将讨论带回生产和转移生产向其它地区的现象及其在短期到中期的可能性。我们将重点放在越南，因为越南被认为是中国脱钩的主要受益者。

Table of contents

Introduction.

The role of China in the world economy is now well established and of absolute importance.
Through its millenary history and culture it has influenced trade, manufacturing, becoming a pole of attraction for merchants and travellers from all over the globe.
After years of economic and political isolation, China has returned of being an economic powerhouse especially after the embracement of the market-based system and the opening up reforms. From 1978 to 2018 China's annual real GDP growth averaged 9.5%, meaning that the country was able to double its economy size in real term every eight year.
Since the global financial slowdown that began in 2008, the growth rate of the Chinese economy has dwindled but remains positive and constant. However, in the last two years (2019, 2020) due to the US-China trade war but mostly due to the pandemic caused by COVID-19, the growth rate has visibly dropped, surpassing the negative minimum ever recorded since 1976. Nevertheless, after the end of the lockdown, starting from April 2020 the Chinese economy grew by 3.2 percent year-on-year, rebounding from a record 6.8 percent contraction of the previous three-month period; in the third quarter it increase by 4,9% and then in the fourth quarter of 2020 reached a positive 5,2%. The country became the very first major economy to report growth following the coronavirus pandemic, as factories and stores reopened after months of coronavirus-induced restrictions. Despite its total GDP is expected to fall to 1.9% in 2020, it is forecast rise to 8.2% in 2021. According to official World Bank's datas and Trading Economics projections, in 2019, China's total gross domestic product (GDP) amounted to $14,342.90 billion, occupying 11.81 percent share of the total world economy and 66 percent that of the United States. In the same year, China's Gross Domestic Product per capita (adjusted by purchasing power parity PPP) was 16,116.70 US dollars equivalent to 91 percent of the world's average. China has to distribute its wealth among over 1.3 billion people and in 2017 ranked 93rd. When compared to other emerging markets, China occupies the second position among BRIC countries (Brazil, Russia, India and China) in terms of GDP per capita, behind Russia and followed by Brazil. By the end of 2019, the inflation reached 2.9% and it is forecast that, despite the outbreak of the COVID-19 pandemic, will remain stable at 2,7% for the next couple of years. On the other hand, public debt is a reason for concern in China. The total debt of China in terms of GDP has long since exceeded that of the US and even if is still lower compared to Japan and some major European countries, it is estimated to be double the average of emerging economies; fuelled by an endless real estate speculative bubble and an opaque financial system, it quadrupled since 2008, reaching

the threshold of 317% of GDP at the beginning of 2018. However, Beijing has many cards to plays in countering debt inflation. By holding large foreign exchange reserves ($3 trillion) and coupled with the current account surplus ($143.3 billion), they can act as a buffer for external sovereign debt volatility. In fact, China is the world's leading exporter as well as the second largest receiver of foreign direct investments (FDI). Since the Open Door Policies, dozens of thousands of foreign companies have invested substantial capitals in the Country, as they are eager to penetrate the thriving and booming Chinese market and gain the competitive advantage that producing in China often entails. These operations have made a significant difference for a significant number of enterprises, helping them to remain globally competitive; moreover it has also provided, particularly to US and EU customers, a large assortment of low cost goods. This massive shifting of the production to China meant a redefinition of the concept of global supply chain. Nowadays supply chains are span over several continents and include suppliers as well as customers. However, while this has produced manifold advantages, on the other hand the complexity of managing the value chains on a global basis is much greater than managing the local one. Businesses need to consider many different types of transportation, packaging, storage requirements, reverse logistics as well as customs, taxes, duties, and uncertainty issues with local governments. From this point of view, China has always been a safe haven for many investors. A favourable tax system, the ease of finding cheap materials and labor, and a stable and secure political regime have contributed to the enrichment of many international companies. Moreover, the development of its logistics apparatus, with a particular mention in infrastructures, has helped China and its investors to improve the flow of goods, minimising transport costs and cut the leads times. For these reasons, producing or sourcing in China has become increasingly advantageous; a great deal of companies that had not already done so had to adapt by joining the crowd, otherwise they had been force to close. However, this has made the entire world extremely dependent on China. In fact, many experts believe it would be more appropriate to use the term Chinese supply chain when referring to global supply chains. In this moment, China is experiencing a phase of transaction and transformation. The government is investing enormous capital to modernise the country and is preparing to leave behind its reputation of being the "factory of the world" with the aim of becoming a post-industrial and technological innovation leader. It’s growth based on resource-intensive manufacturing, low paid labor and export of cheap products has reached its limits especially because it has left behind severe environmental problems as wells as economic and social imbalances.

Rising labor costs, the trade war with the United States and the recent COVID-19 pandemic are inducing many business that collaborate with China to rethink their supply chain strategies.

Decoupling from China is a hot topic of the last period. Many companies are exploring the possibility of bringing production back to the economy of origin, others intend to move to different developing countries while still others have no plans to leave China.

Chapter 1:
The importance of China in the global supply chain

The supply chain is the process that allows to bring a product or service to the market, transferring it from the manufacturers or supplier to the customer. It is therefore a complex process that involves several actors, activating numerous procedures: from the flow of raw materials linked to the production processes, up to the distribution logistics that delivers the purchased goods to the final consumer. The supply chain is, in fact, a network that affects all the companies and individual that produce or trade products, services, informations, events or projects. No business is an isolated entity, but is part of a large web of interconnected companies. The supply network extends beyond enterprise boundaries, including customers, customers' customers, suppliers' suppliers and so on. The knowledge that regulates the management of processes in the supply system and of the mechanisms through which firms activities are translated into operational performance that determine competitiveness is now widely recognised as one of the keys to business success.

Along with the emergence of a multitude of new companies in the modern global economic environment and with the consequent increase in competition, many firms, in order to cut costs and improve their return on assets, had to review their way of doing business by finding themselves in front an essential dilemma: to continue producing everything internally (make), or to resort to the market and buy components, semi-finished products (buy) from other suppliers?

For these reasons companies started to broaden their operation by involving different countries. Decisions about where to source or manufacture goods are fundamental as well as taking into account many other variabilities such as taxes, political risk, natural disaster, exposure to foreign currencies and logistics cost. A enormous number of foreign enterprises that have decided to continue producing almost everything internally (and later on sourcing) have chosen to relocate to China and other developing jurisdiction, since this offered numerous possibilities for cost reduction and to exploit the advantages that the brownfield and greenfield plants usually entitle.

Deciding how to pursue vertical integration and to what extent resort to the market is indeed fundamental.

In general terms, companies integrate vertically to increase profit margins, expand control of the production environment and thus limit uncertainty. Through the acquisition (brownfield) or the creation of a new production plant (greenfield), the corporate can take possession of the customer or supplier's profit margin, eliminate

the marketing or purchase costs that would occur in the presence of a normal customer / supplier relationship. Vertical integration decisions must define the direction of vertical integration, the degree of integration and the balance between vertically integrated activities. Generally the first step of a manufacturer is towards the downstream integration, with the aim of creating its own sales network rather than serving independent distributors.
The integration choices can be multiple but tend to follow two directions: upstream integration to increase control over the sources by acquiring the component manufacturer or downstream integration to purchase the wholesaler.
Finally, the manufacturer can choose to be fully integrated, producing all raw materials and components internally, assembling all finished products and distributing them as well as selling them directly to the final customer. However, this type of integration is difficult to achieve as it is extremely complicate to manage. A fundamental criterion for choosing the level of integration is obviously the cost. Is it convenient to carry out all the activities that allow the production of a certain output at a lower cost or is it better to acquire from external suppliers?
The transition to the market is convenient when the difference between (Cp + Ca) and (P + Ct) is greater than the costs of the transition from integration to the market, such as those caused by the disposal of production structures and the effects of the reduction of production.

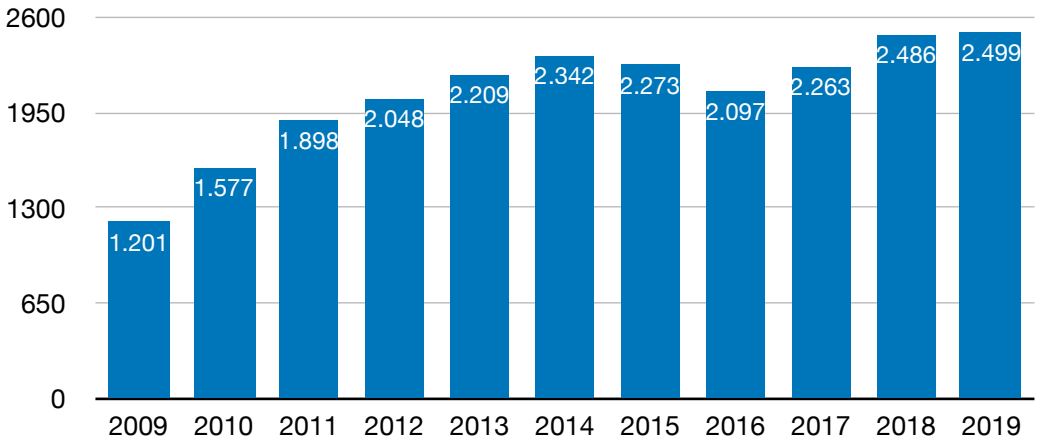
Cp+Ca < P+Ct —> make
CP+Ca > P+Ct —> buy

Cp internal production costs related to the activity
Ca internal administrative costs
P price on market
Ct transactional cost

Despite this, costs are not the only criterion for delineating the boundaries of the company. Other important features are quality, punctuality, flexibility, and speed of delivery.
Nowadays the role of China in the global supply chain is of primary importance. In 2018 the Country became the major trading pattern for more than 120 countries and regions; with the increasing in number of Chinese manufacturers and component producers more and more foreign companies decided to turn to them instead of in-house manufacturing. In this way, companies by limiting the processes they have to carry out and supervise along the supply chain, can focus on what they do best and which in many circumstances, have differentiated them from the competition. Moreover, when there are multiple suppliers (multi sourcing), the bargain power of the companies increases, often leading to obtaining very competitive prices.

Since 2009, China is leading the world's export and in 2019 reached 2,498 trillion USD, followed by the United States (1,645 trillion USD) and Germany (1,486 trillion USD). Between 2002 and 2014, the value of goods exported from China grew immensely. In 2002, Chinese exports were worth only about US $326 billion. Ten years later, Chinese exports grew sixfold, reaching the US $2 trillion mark in 2012 for the first time. These figures leave little room for doubt about the importance of China in the export scenario and telling us that Chinese foreign trade will continue to be critical, no matter what, for many international companies. What is surprising about China's export sector is that it is dominated by manufactured goods (95% of all exports).

Figure1.1: Value of export of goods from China, from 2009 to 2019 (billion U.S dollar)



Source: National Bureau of Statistic of China

2.1.China's manufacturing

According to the data provided by World Bank, China is the worlds's largest manufacturer and processing manufacturer. Gross value added (GVA) data reflects the actual value of manufacturing that occurred in the country (subtract the value of intermediate inputs and raw materials used in production). Manufacturing plays a considerably more important role in the Chinese economy than it does for European developed countries and United States. In 2019, China's gross valued added manufacturing was equal to 27.17% of its GDP, employing 28.18% of total workforce. In comparison the GVA manufacturing of United States only accounts for 11.39% and

employing just 8.51% of the workforce. In 2019 the 10 biggest categories of goods accounted for 67,8% of total export. They were: electrical machinery, equipment: US$ 671 billion (26.9%), furniture, bedding, lighting, signs, prefab buildings: $99.5 billion (4%), Machinery including computers: $417 billion (16.7%), Plastics, plastic articles: $84.4 billion (3.4%), Vehicles: $74.4 billion (3%), Optical, technical, medical apparatus: $73 billion (2.9%), Knit or crochet clothing, accessories: $71.4 billion (2.9%), Articles of iron or steel: $69.6 billion (2.8%),Clothing, accessories (not knit or crochet): $66.8 billion (2.7%), Toys, games: $62.8 billion (2.5%). Grouped together, their value exceeds $1687 billion.

Table 1.1: Top 10 Chinese exports of goods by category, export share(%) and their value ($billion)

China's export product	share of exports %	Billion (US$)
1.Electrical machinery, equipment	26.9	671
2.Machinery including computers	16.7	417
3.Furniture, bedding, lighting, signs, prefab buildings	4	99.5
4.Plastics, plastics articles	3.4	84.4
5.Vehicles	3	74.4
6.Optical, technical, medical apparatus	2.9	73
7.Knit or crochet clothing, accessories	2.9	71.4
8.Articles of iron or steel	2.8	69.6
9.Clothing, accessories	2.7	66.8
10.Toys, games	2.5	62.8
Total	67,8	1689,9

Source: World's Top Exports

In order to understand the Chinese long-term, high speed economic growth we must first consider the cause of such unprecedented economic miracle.

After the World War two and the following four years of civil war ended in 1949, China's economy was at all time-low. The population had to fight against famine, poverty and the lack of essential products for survival. The communist government led by president Mao Zedong tried in every way to get China out of the threshold of extreme poverty through economic planning and class struggle. In order to free China from the yoke of poverty, it was necessary to develop the agricultural and manufacturing sectors. If the agricultural sector, despite ups and downs, managed to

improve and increase its production output, the secondary sector remained obsolete and inadequate. Only after the Open door policy initiated by president Deng Xiao Ping, China started to receive FDI necessary to expand its manufacturing capacity. For many foreign companies, China represented a great opportunity as it allowed them to obtain economic benefits by reducing production costs. Companies that want to gain a competitive advantage must, first of all, differentiate themselves from the rivals positioning in the minds of consumers. Secondly they have to operate at lower cost and so gain bigger profit.

In manufacturing, but also in the service sector, the operations objectives that companies must carry out with the best performance are essentially five: quality, dependability, speed, flexibility and cost.

Without any doubt, price is one of the most important factor. It affect the relationship between supply and demand especially when other elements (such as product quality, design, technical features, consumer preferences, etc) are approximately the same. Under this premise, Chinese products on average fall into the category of being cheap and well-made (process that took some years), which gives them a significant competitive advantage, occupying a large slice of the market. In the first 30 years of the reform of opening up, a broad number of foreign companies moved to China, thus making it “the world factory" and then an essential part of the global supply chain. Items produced in China have a considerable cost advantage mainly due to two reason: economies of scale and economies of agglomeration.

1) Economies of scale

Scale effect or economies of scale means the cost advantages that enterprises obtain thank to their scale of operation (usually measured by the amount of output produced), with cost per unit of output decreasing with increasing scale. The Chinese scale gains advantage from the scale of human resources and the scale effect of land.

Many important inputs such as labor, land and energy generate different costs depending on the chosen location. Similarly the costs of transportation and local taxes change based on the position. Personnel costs can vary significantly from region to region. This difference is then accentuated if we think on an international scale. Economic labor cost has always been a strong comparative advantage for China. Thanks to its huge population and low income, foreign companies were able to find qualified worker at lower prices. It is clear that the choice of locating a production plant in a low-cost country must take into account not only the hourly cost but also the productivity of labor. Producing in a country where the cost of labor and productivity are for example 80% of the home country would not bring any advantage of cost because to produce what an American or European worker produces in 100 hours that foreigner produces in 100 / 0.8 hours. Taking into account these two variables, many foreign

companies have decided to locate their factories in China not only for the economic benefit of cheap labor cost but also for the high productivity of Chinese workers.
Scale effect of land is also a very important comparative advantage. Land and facility rental costs vary from country to country and even from region to region. China has a large area (9,572,400 Kmq) ranking third only after Russia (17,075,400 Kmq) and Canada (9,984,670 Kmq). Compared to the countries mentioned above, the geographic and climatic conformation of China is more suitable for production, making the land extremely attractive. Also, along the continuation of China's rural land reform, the advancement of science and technology a more intensive and efficient land management method has been achieved.
With the opening of local cities, development of the Township and Village Enterprises (TVEs), creation of Special Economic Zones (SEZs), promotion of investment, strong support of the government's finance as well as the construction of industrial parks and industrial high-tech zones, all these factors combined together, have created an high quality development environment for the manufacturing industry that have also resulted in profit brought by China's land and human resource factors.
Since the founding of the new government (People Republic of China PRC) in 1949, China's industrial land allocation policies have gone through many stages, during which the role of market has varied. The coastal provinces captured a huge slice of the foreign investment which it was made possible thanks to a favourable fiscal condition, open door policies, local initiatives and low cost of industrial land rental. Towards the end of the 90's, with the reforms about the right of privatisation, TVE's were among the first companies to become private and consequently obtained huge profits by supplanting state-owned enterprises. In 2006 the Ministry of Territory and Resources fixed the minimum price regulation valid for the transfer of land for industrial use, favouring its creation. This led to China's "world factory" role and the dramatically development of its large-sized industrial parks.

2) *Economies of agglomeration*

By definition

> Economies of agglomeration are cost savings arising from urban agglomeration.[1]

One aspect of industrial agglomeration is that firms are often located near to each other. Benefits arising from such spatial concentration of companies, consumers, workers and physical capital include low transportation cost, multiple suppliers, large amount of labor and accumulation of knowledge and human capital. So, if a large number of companies operating in the same sector cluster together in a defined

[1] Oberhaus, Daniel (2019-08-12). "How Smaller Cities Are Trying to Plug America's Brain Drain", *Wired*, 2019

geographical area, their production costs might decrease. This is made possible because the concentration will attract more suppliers than a single firm can do. In the event that in cluster there are businesses in competition with each other they will still benefit from the time and cost saving that the cluster could provide.

In China, the phenomenon of the agglomeration industry has assumed an unprecedented scale and has formed a well defined and complete system. It includes the agglomeration of service industry, manufacturing industry and the circulation industry; all the three work in synergy forming a collaborative advantage. When in 1979, the Central Committee of the Communist Party (CCCP) officially proposed the establishment of the experimental special economic zones (SEZs) on the South China coast, a considerable part of coastal zone land was redistribute for industrial use. Since then, given their effectiveness, they spread like wildfire throughout the Chinese territory. In order to develop the industrial sector and boost economic growth, numerous tax breaks, preferential policies and start-up funds have been provided by the Beijing government but were also incentivised by local governments. It is useless to dwell on the fact that most of Chinese manufacturing industrial agglomeration has been concentrated in these special economics zones.

China has created numerous manufacturing centres among which the main ones are concentrated on the Yangtze River Delta region and in the South especially in the Guangdong region, along the Pearl Delta area. The industrial agglomeration thanks to the facilitation in transport, communication, flow of raw materials, increased efficiency of energy management produced a series of economic and logistical benefits for many local and foreign companies. Over the years, the industrial agglomerations scattered throughout the Chinese territory, referring to geographical, territorial, social conformity and economic tissue, started to specialise in certain fields, became production centres capable of attracting the most demanding investors.

However, sometimes the blind pursuit of economy of scales, especially with the bulking of product output, can be counterproductive and may not lead to greater profits. Producing cost aren't the only disbursement that a firm must consider; many of the costs that impact on the end product and therefore on market competitiveness, are hidden outside the business in the supply chain. On this regard, a better management of the supply chain and a careful analysis of the factors that can affect costs, can lead to a visible reduction in price and therefore an increase in profits.

2.2.Logistics in China.

Logistics refer to all the material management and physical distribution activities that a company must carry out in order to deliver its product to the final customer. Logistic focus on the integration in information flows, moving and storing commodities (packaging, inventory, warehousing, transportation, security) between different supply chain organisations.

As we discussed in the previous sub-chapter, many foreign companies that, over the years, have decided to invest in China benefitted from low labor cost, raw material access, convenient USD-renminbi change and from a general favourable labor and environmental regulations. However producing in China and subsequently supplying the products to the final market involves a significant increase in shipping costs and management difficulties when compared to producing in Europe or in the United States due to the longer distance and the numerous transitions.

For many years companies have partially neglected the costs caused by logistical problems by focusing almost exclusively on production. However, all this has led to a decline in profits and the ability of satisfying the final customer. Nowadays much of the corporate pathos focuses on improving the speed of supply, reduction of warehousing costs and the ability to deliver the product or service in the shortest possible time. Guaranteeing a correct transportation and storage of goods, managing customs clearance, picking up / delivering products at facilities all over the world in a timely and efficient manner are crucial activities that can influence the ability of a company to effectively serve the global market or use a foreign supplier.

According to the data provided by the World Bank, China is the largest exporter in the world (2397.58 billion US$) and the second largest importer (2,134, billion US$). Facilitate this enormous commercial flow is indeed fundamental. It becomes clear how infrastructures, inventory reduction through high turnover, short lead times, ability to respond to volatile demand play a key role in cost reduction and in company's competitiveness enhancement.

In recent years, the Chinese logistics sector has continued to grow steadily and in 2018 saw an increase in goods transported of 6.4% year on year for a total of 42.3 trillion dollars. According to ChinaDaily data, "The logistics expenditure rose 9.8% to 13.3 trillion yuan (198 billion dollars), amounting to 14.8% of 2017 GDP". In 2019, transportation costs increased by 6.5% (in line with the economic growth of 6.6%, thus showing an improvement in transportation) while storage, warehousing and management costs increased by 13% each. Acknowledged the importance of logistics in the development of economy, the Communist Party of China made substantial effort

to reduce the costs while improving the efficiency; in 2018 China was able to lower the logistics expenditure by 98 billion yuan ($1.4 billion).
According to the Logistics Performance Index (LPI) provided by the World Bank, in 2018, China scored a total of 3.61 points out of 5 (1 minimum-5 maximum) and ranking 26 in the global list. This index is a useful tool to compare countries logistics performances by using six key dimension including:

1. Customs: the efficiency of customs and border clearance.
2. Infrastructure: the quality of trade and transport infrastructure.
3. International shipments: the ease of arranging competitively priced shipments.
4. Logistics competence: the competence and quality of logistics services including trucking, forwarding, and customs brokerage.
5. Tracking and tracing: the ability to track and trace consignments.
6. Timeliness: the frequency with which shipments reach consignees within scheduled or expected delivery times.

Table 1.2: China LPI Score for the period 2007-2018

year	LPI Score	Infrastruc-ture	Customs	Internation al shipment	Logistics competen ce	Tracking & tracing	Timeliness
2007	3.32	3.20	2.99	3.31	3.40	3.37	3.68
2010	3.49	3.54	3.16	3.31	3.49	3.55	3.91
2012	3.52	3.61	3.25	3.46	3.47	3.52	3.80
2014	3.53	3.67	3.21	3.50	3.46	3.50	3.87
2016	3.66	3.75	3.32	3.70	3.62	3.68	3.90
2018	3.61	3.75	3.29	3.54	3.59	3.65	3.84

Source: the World Bank

The LPI is an excellent instrument with which enables to identify the potential and shortcomings of a particular country in logistical operations and thus establish its attractiveness in receiving FDI. In fact, many companies rely on this index in the choice of establishing their production plants and in the selection of potential new suppliers. For this reason, many countries are investing substantial capital to be able to improve their LPI score and thus increase their competitiveness in an increasingly global market.

- Customs clearance

As we can see in table 1.2, the lowest score performed by China in LPI is in the custom clearance. Customs rules can present many complexity in any jurisdiction. However if companies understand the procedures and rules they may able reduce the operational risk, manage the costs and improve their overall performance.
In China, considering the vastness of the territory, the complications arising from the customs procedures may be significant. This is manly because in each port of entry the practices or the application of regulation may differ greatly creating further uncertainty. Although many companies rely on private agencies such as broker, freight forwarders, integrated logistics service providers, international intermediaries, etc, customs clearance procedures can often involve delays, long waiting times, request for specific permits to import or export raw materials or final products. These intricacies can have a profound impact on the final price of the product and, ultimately, on the success of just in time (JIT) practices.
In China, all the Customs duties are controlled by the General Administration of Customs of the People's Republic of China (GACC),

> a ministry level organisation that has authority over and bears responsibility for all customs district and office in the People's republic of China[2]

China Customs now rely on more than 100,000 personnel employed in 47 customs districts, agencies and office and count 742 customs house/office distributed all around the Chinese soil. China Customs is responsible many crucial activities such as:

1. monitoring goods and personal belongings entering and leaving the customs territory
2. collecting customs duties and taxes
3. Producing customs statistics and handling other customs operations.
4. detecting and suppressing smuggling and general violations
5. border health checks
6. inspection and quarantine for imported and exported animals and plants
7. imported and exported food safety

Before importing or exporting commodities a company (or who is in charge of such commodities) needs to follow a series of stipulated steps in order to acquire the approval of the GACC. On September 4, 2015, China became a member of the Trade Facilitation Agreement (TFA). The main objective of the agreement was to reduce trade cost and promote the modernisation of China's ports governance system with a significant abatement of operation costs for enterprises. Since then, the Clearance duration has been reduced of 24%. On July 1, 2017, the GACC announced the

[2] KPMG, Managing Trade&Customs in China, KPMG, 2020

implements of National Customs Clearance Integration Regime Reform, the establishment of the Risk of Prevention and Control Centre (RPCC) and the Tax Collection and Administration Centre (TCAC). The purpose was to unify customs enforcement relating to declaration of nationwide matters, eliminating the traditional compliance challenges which were associated with the former customs district clearance system.

The TCACs are responsible for tax collection and administration matters through reviewing and inspecting companies' declarations. There are 3 centres (Beijing/Tianjin, Shanghai, Guangzhou) each responsible for specific categories of imported goods and HS codes[3].

The RPCCs are responsible for analysing administration risks and instructing local customs to make on-site inspections.

This reform is also called "two-step declaration". Importers don't have to submit all declaration documents in a single time but can complete their declaration process within two steps:

1. make a summary declaration and take delivery of goods by only submitting the bill of lading;
2. Submit all other information documents and make duty payment as required within 14 days after declared entry of transport means.

Thus, the two-step mode helps reduce import demurrage and improve clearance efficiency. The "two-step declaration" not only allows importers to immediately take goods on entry if the goods are not subject to customs inspection, but also enhances declaration accuracy because importers have more time to confirm goods information, greatly reducing errors and omissions in declaration. The new policy allows companies to make a customs declaration and pay the duty and import VAT automatically, thus making the process less time consuming (General Administration of Customs People Republic of China). China Customs also implemented the automated clearance scheme meaning that most customs declarations are now carry out on-line by companies without manual review of each shipment by the Customs. Enterprises are required to accurate "self-declare" all the information about commodities according with the relevant the Customs rules and regulations. Any violations could lead to sanctions and company must bear the legal consequences.

In order to avoid the risk of scams, violations and general complication, China Customs has increased pre-clearance risk control and post-clearance tax supervision.

[3] HS code: Harmonised Commodity Description and Coding System,

Table 1.3: Chinese declaration process and tax collection&administration comparison

	Old Regime	New regime
Declaration Process	Importations are reviewed before release of goods for inspection on consistency with declaration documents	Most of the customs clearance will be completed through independent customs declaration while high risk imports will be filtered out for further review before release of goods
Tax collection and administration	Valuation and HS code classification of imported goods will be reviewed before release of goods and post-importation audit will be performed by customs and other function sectors	Customs enhances comprehensive customs inspection and audit after release of goods.

Source: General Administration of Customs People Republic of China

- China’s transport infrastructures

Starting from 1978, China began investing substantial capitals in the creation and modernisation of an adequate transport infrastructure network capable to facilitate the exchange of goods and people and to promote economic growth. Foreign companies that decided to produce within the country settled almost exclusively along the East coast, since it provided evident logistical advantages and it was not necessary to invest large capitals in the construction of too many infrastructures. For these reasons, the coastal regions developed much faster than the inland regions that were almost forgotten and found themselves in a condition of economic and social inequality. Nevertheless, Beijing has made enormous efforts to relaunch the central regions and create a capillary transport infrastructure network. This has produced a number of benefits not only for the parties concerned but for the country as a whole. Much of China's raw materials come from these areas and the facilitation of their flow also benefit the industries located in the further east. Moreover, thanks to the reduction of transportation time and costs, the central regions, which are known to have a very low cost of land and labor, were able gain competitiveness. China’s transport infrastructure mainly include:

- Railways

China has a total of 142,000 km of railway including the longest high speed railway in the world (35.000 km). China's railways are one of the busiest in the world able to deliver in 2019 more than 3.660 billion passenger trips and handle over 500 million tonnes of freight.

• Airports:

In 2020, China counted 238 civil airports with scheduled flights and a total of 507 including airfield, ranking 15th in the world. The Beijing Capital International Airport and the Shanghai Pudong Airport are the biggest airports in China always crowded with passengers and cargos.

• Roads:

The road network consist in a various type of roads: Highways, national roads, country roads, provincial roads, and township roads with a total roads length of 5,01 million km including 150.000 km expressway.

• Waterways:

China has over 5,800 rivers, many of which including the Yangtze River (6,300 km) and the Yellow River (5,464 km) are among the longest and with most water discharge in the world. The Country has 110.000 of navigable rivers, lakes, canal ranking first in the world.

• Harbours:

China's ports are the hub of international trade. The ports of Shanghai with a cargo capacity of over 42.01 million TEU[4], Shenzhen (27.74), Ningbo-Zhoushan (26.35), Guangzhou Harbour (21.87), Hong Kong SAR (19.60), Qingdao (18.26), Tianjin (16.00) are all included in the top 10 of world container ports list.

• Bridges:

Danyang–Kunshan Grand Bridge (164,800 km), Changhua–Kaohsiung Viaduct(157,317 km) , Tianjin Grand Bridge (113,700), Cangde Grand Bridge (115,900), Weinan Weihe Grand Bridge(79,732) are respectively the five longest bridges in the world.

These datas provide an idea of how much China has invested in transport infrastructure over the past few decades. Nonetheless, the government is continuing to finance and improve it.

- International shipments: the ease of arranging competitively priced shipments.

According to LPI index, China score a total of 3.54/5, which is Its second lowest dimension. This dimension serves to assess the ability of a country to arrange shipments at competitive prices. In this regards, for companies, the role of transport management is crucial, as it concerns the transfer of products between the various points of accumulation within the supply network. Such transfers are extremely frequent because the products are rarely made and sold in the same place. If transport management is inadequate, the level of service deteriorates and more safety stocks are

[4] TEU: Twenty-foot equivalent unit, 38 cubic meters

needed, affecting the cost. Transport represents a very significant component of the costs of a supply network, with a different impact on the price in the various industrial sectors.

Table 1.4: Incidence of logistics and transport costs on the price depending on industry.

Sector	Logistics cost	Transportation cost
Food	31%	10%
Chemical	21%	8%
Clothing	23%	8%
Construction	25%	7%
Agriculture	13%	3%
Pharmaceutical	16%	3%
Electronics	12%	2%
Average	20%	6%

Source: Supply chain management, la gestione dei processi di fornitura e di distribuzione.

Generally, the goal of transport management is to connect all the pick-up and delivery points in the supply network, respecting the time constraints required by customers, within the limits of infrastructure capacity at the lowest possible cost. Shipping cost may include many different cost such as the cost from factory to port transportation, insurance, freight cost, export clearance, document delivery, port charges, Custom Bond, packaging, door to door transportation. All these costs, once added together, can have a profound effect on the overall cost of transporting the goods.

Table 1.5: example of Chinese shipping average costs from factory to final customer.

Type of cost	Cost range (US$)
Local Transportation	50-500 included in FOB
China Export Clearance	100-300 Included in FOB
Freight Cost	Depending on country, Shipper, LCL, FCL, product
Insurance	Depending on insurance. Average goes from 0.5 to 0.6% ((commodities value + transportation value) x 10%)x 0.5%
Document Delivery	40-50
Customs Bond / Clearance	Depending on country.
Local Charges	100-500. Depending on location, LCL or FCL, freight cost.
Domestic Transportation	Depending on distance.

Source: various source and author calculation

Chapter 2:
The reasons behind the decoupling from China

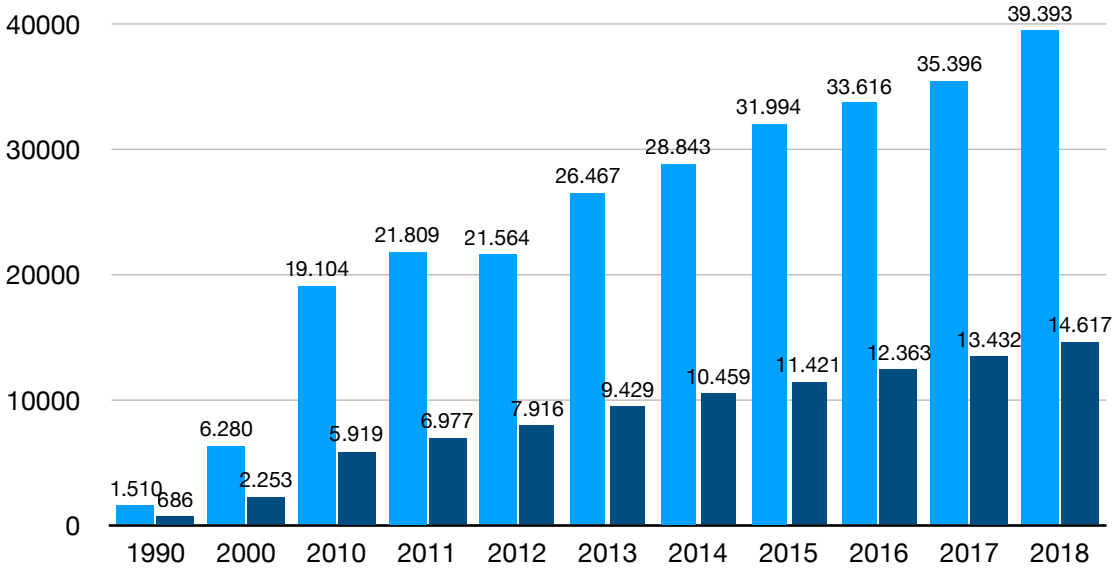
2.1.The rising of wages and the transformation of China in a post-industrial economy.

In China, the rapid economic development has not only affected the industrial sector, infrastructure and logistics but had a profound impact on its citizens who are rapidly becoming richer especially considering that there was no significant inflation of the yuan. This inevitably led to a rapid increase in incomes.

Over the past two decades, disposable income per capita in China has rose more than 6-fold for both urban and rural households alike, and in particular, it went from around $4,000 in 2010 to $8,000 in 2018. However this contributed to widening the wage gap.

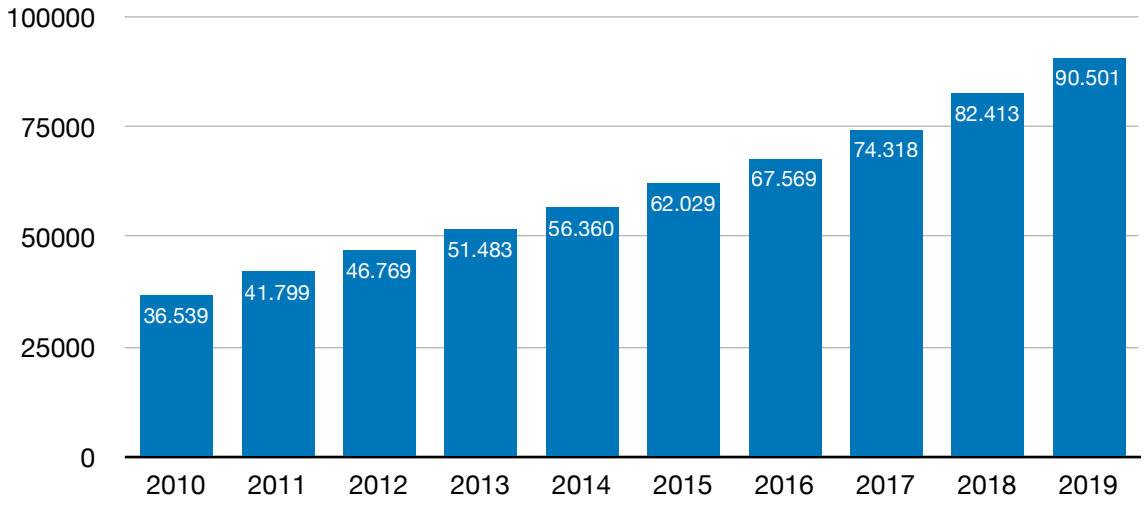
As can be seen from the fig.2.1 and fig.2.2, the difference in annual per capita disposable income of rural and urban households is quite evident. Many of the citizens who reside in major Chinese cities, and especially those along the coast, enjoy a much higher standard of living if juxtapose to rural or inland residents. According to the National Bureau of Statistics of China, the average salary of urban residents in 2019 was about 90,000 yuan ($14,000), a relatively high figure when compared to 36,500 ($5600) in 2010.

Figure 2.1 : Annual per capita disposable income of rural and urban households in China from 1990 to 2018 (Yuan)



Source: National Bureau of Statistic of China

Figure 2.2 : Average annual salary of employees working for urban units in China from 2009 to 2019 in yuan



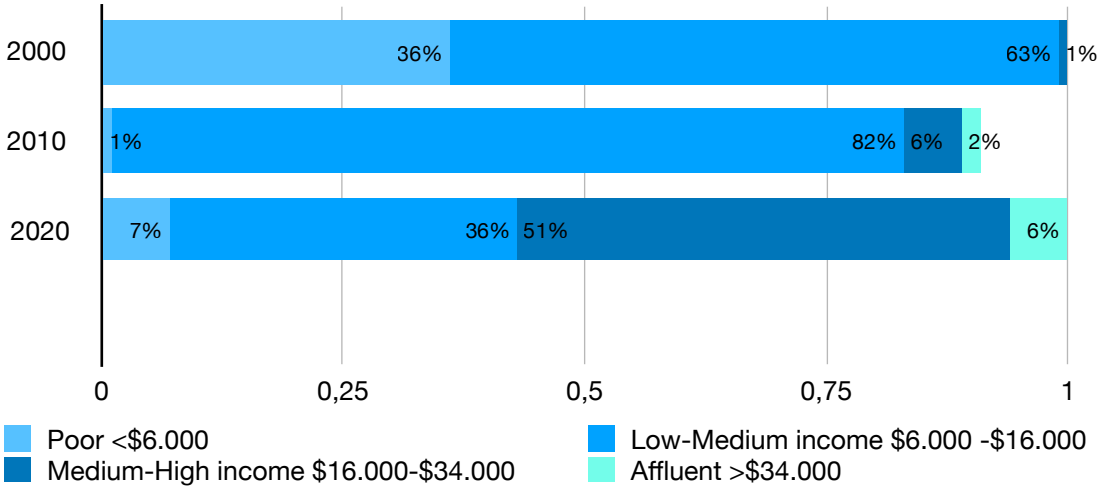
Source: National Bureau of Statistic of China

Although the difference between high and low wages remains, in recent years there has been a substantial increase in the number of medium-high wages and an overall narrowing of the poverty line. According to the opinion of a number of experts including the McKinsey & Company institute, at the moment we can divide China into four different urban households income brackets. The first tier is represented by the so-called poverty bracket and generally include those who cannot provide for their livelihood and afford the basic needs; broadly speaking their income is less than $6.000. The second tier is occupied by the lower-middle class with an annual disposable income between $6.000-$16.000. In 2020 more than 36% of Chinese urban households fall into this category and commonly is constituted of people that can afford the basic living needs such as food, water, clothing, housing, education, healthcare. The third tier is occupied by the upper-middle class citizens which nowadays represent more than 51% (in 2010 was just 6%) of urban households. Their annual disposable income is between $16.000 to $34.000. They are considered relatively wealthy, can afford more than the basic needs and they represent the main push to consumption. At the top level we find the affluent, those with an annual income that exceeds $34,000. They represent about 6% of the population but their number is constantly augmenting and probably in less than 10 years many people who fall into the third bracket will be able to enjoy a similar status.

In addition, the number of millionaires in China has rose. According to the latest figures for 2018, there would be about 4.4 million millionaires in China, with an increase of 158,000 compared to the previous year, representing about 10% of the number of millionaires in the world.

This picture reveals two fundamental truths. The first one is, given that the wealth of many consumers is rising so rapidly, all those companies who operate in the Chinese market can increase their total revenues. Although the medium-high class disposable income is still relatively low when compared with consumers from the most developed countries, this group, however, include 167 million households (around to 400 million people) and so offer an enormous pool of potential new buyers. They are the principal driver for consumption able to afford car, luxury items, travelling, all sort of entertainment and generally speaking all those goods and services that allow us to have a more comfortable lifestyle.

Figure 2.3: Number of urban households by annual household income



Source: McKinsey Insights China

Companies will have to respond to this general increase in wages, introducing higher quality products, aligning with the demand that this economic group requires and in order to obtain greater profits, differentiate themselves from the competition. Since 2010, the lower-middle income bracket has shrunk from 82% to 36% but still represents an important market for cheaper products. In numbers, those who belong to this class amount to about 116 million families for a total of over 300 million people. Affluent consumers remain a small percentage (6%), especially when compared with those of more advanced countries; however, if we look in detail, we will notice that there are over 21 million families with a salary of at least $34,000, corresponding to 60 million citizens. Although wages are rising across China, there are substantial differences depending by region, province and city. Some localities are undoubtedly much more affluent than others (but with a significantly higher cost of living) and therefore consumptions and needs are different compared to less developed areas. These factors have been taken into consideration by many companies for years and are

guiding their choices on where and what to produce, also providing a valid indication of which types of products or services vary according to income.

Tabella 2.1: Top 10 Chinese cities by highest average salary

Top 10 Chinese cities by highest average salary		
City	**Province**	**Average monthly salary in 元**
Beijing	Beijing	11,521
Shanghai	Shanghai	10,967
Shenzhen	Guangdong	10,477
Hangzhou	Zhejiang	9,978
Zhuahai	Guangdong	9,465
Guangzhou	Guangdong	9,150
Nanjing	Jiangsu	8,919
Wuhan	Hubei	8,846
Ningbo	Zhejiang	8,827
Xiamen	Fujian	8,737

Source: National Bureau of Statistic of China

Once understood the enormous economic importance that China represents for many foreign companies as an end market, the above datas reveal the second important truth: Along the rising of average wages and the formation of a wealthy middle class, the ability of companies (both foreign and local) to find cheap labor is becoming more and more complicate. What was once the main reason for relocating and sourcing to China, now is gradually fading.

- Has China reached the Lewis turning point?

The large surplus of labor from rural areas has significantly contributed to keeping wage inflation low in the manufacturing sector, facilitating the country's economic growth and enhancing its attractiveness towards FDI.
In many situations, China's path toward economic progress resembles the model of economic development formulated by Sir Arthur Lewis in 1954; the model describes the conditions of structural transformation of an economy, from predominantly agricultural to predominantly manufacturing. When there is an excess of labor in the agriculture, wages increases in the industrial sector are, on a certain extend, limited by wages in agriculture, as labor moves from the farms to industry (Lewis, 1954). This may incentives investment, industrial profit and create fertile ground for industrial

development (since productivity is ahead of wages); this chain of events promote employment and finally economic development.

However once the labour surplus from the agriculture sector is exhausted, the wages in the manufacturing sector will raise rapidly, discouraging investments and eroding industrial profits, reaching the so called Lewis Turning Point.

The steady rise in nominal wages and the increasingly difficult search for labor are questioning whether China can still offer cheap labor costs and whether it has reached Lewis Turning Point (LTP). From the Chinese perspective, this would represent a point of no return. The increase in wages and the lack of manpower would discourage all those companies that have decided to produce in China (or who intend to do so), forcing them, albeit unintentionally, to leave the country in favour of other more profitable countries. According projection formulated by the International Monetary Fund in 2013

> The excess supply in the baseline scenario indicates that China's excess supply of labor has peaked in 2010 and is on the verge of a sharp decline: from 151 million in 2010, to 57 million in 2015, and 33 million in 2020. The LTP is projected to emerge between 2020 and 2025, when excess supply turns negative[5].

One of the main factors affecting the amount of manpower available within a country is the fertility ratio. Although the government has abolished the one-child policy, the damages caused by this law are still having repercussions in the present days and will continue to do so in the future. The Chinese population is ageing quickly and the generational turnover is becoming a serious problem. The predictions say that the Chinese workforce will shrink by 100 million every 15 years from 2020. Families are, in fact, less and less willing to have children because of the rising of economic and time costs that having a child usually implies. Moreover the burden of pensions and assistance of the elderly will inevitably fall on a thinning part of the population causing a reduction in consumption and investments. Another important aspect to consider in the waning of manufacturing labor surplus is that the new generations are unwilling to do low skilled factories jobs. The sector that once fuelled the Chinese economy is now being seen with reluctance. The improvement of living conditions, increase in wages, the raising of educational level have all led to a change in job expectations. Millions of Chinese families have made enormous sacrifices in order to allow their children and grandchildren the possibility of a better education and quality of life. Accordingly, the new generations feel almost obliged to render the favour by performing qualifying jobs that are not only more profitable but also traditionally prestigious.

The gap between factories owner and young workers is enlarging. The new workforce, often referred being lazy, is unwilling to work 10-12 hours per day, standing in the product line for $5 an hour without job security and breaks.

---

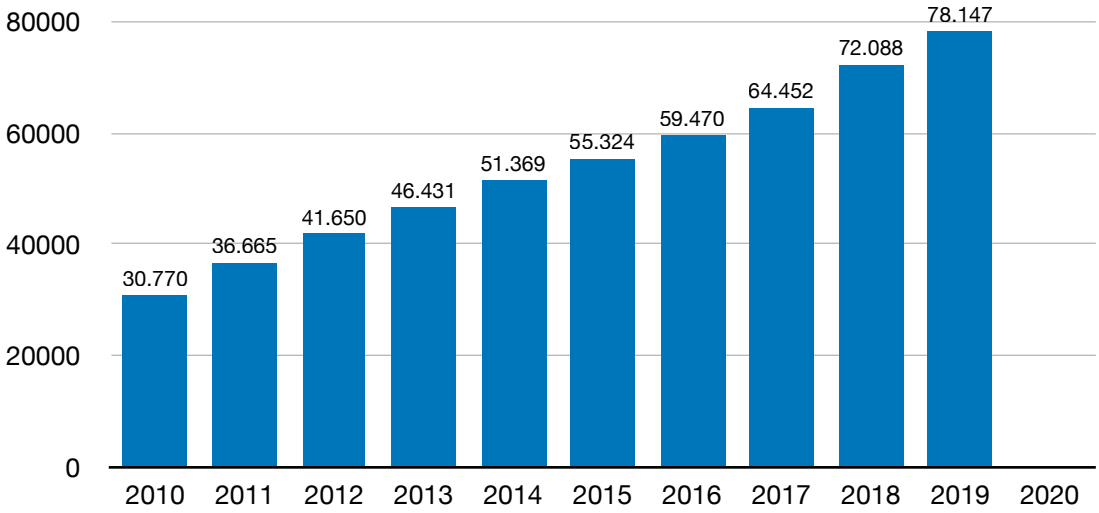
[5]Mitali Das and Papa N'Diaye, Research Department and Asia and Pacific Department, International Monetary Fund, 2020

Quoting the words of an interview conducted by Robyn Dixon for The Los Angeles time

> let someone else be the world's cheap factory. A generation of young Chinese is turning its back on the factory jobs that once fuelled China's growth — and they are helping to transform the economy by doing it[6].

China already acknowledged the necessity to transform its economy by promoting the tertiary sector and focusing on high-tech industries and consumer-driven services. In this regard, the Chinese government in 2015 launched the manufacturing industry development program "Made in China 2025". The aim of the program is to revive China by abandoning its role as a world's factory and manufacturer of cheap products and become instead an important post-industrial technological and innovation economy. Made in China 2025 will put a lot of emphasis on supply chain facilitation, elimination of waste, and better management of production and transportation processes. This will counteract wages increase, managing to achieve a win-win situation, both for companies and workers.

Figure 2.4: Average annual wage in manufacturing sector in China from 2010 to 2020 (yuan).



Source: National Bureau of Statistic of China

[6]Robyn Dixon, Chinese millennials are rejecting dull factory jobs — and transforming the economy, Los Angles Times, 2020.

2.2.United States-China trade war

The second major challenge that manufacturing companies operating in China are facing is the Sino-American trade war. In 2018, the US government began to impose a series of tariffs on goods coming from China in order to balance the trade deficit, encourage American product consumption and also stimulate local employment. According to the statements of the American president, China use "unfair trade practices," keeping its currency low, favouring its exports and so damaging the competitiveness of American products in the local and international market. He also openly criticised the well-known practice of theft of intellectual property perpetrated by many Chinese companies asking U.S firms to move elsewhere and thereby avoid the misappropriation of technologies and Know-How. Similarly, the Chinese government has responded by issuing duties and tariffs on many goods from the United States. In this crescent period of uncertainty, many companies have found themselves in the midst of power games between the two biggest world's economies, suffering substantial losses that compromised their revenues. In order to avoid running into tariffs, limitations, delays, companies are rethinking their entire supply chain operations and evaluating what could be the best options to implement to remain competitive in the market.

- Brief overview on US-China trade war.

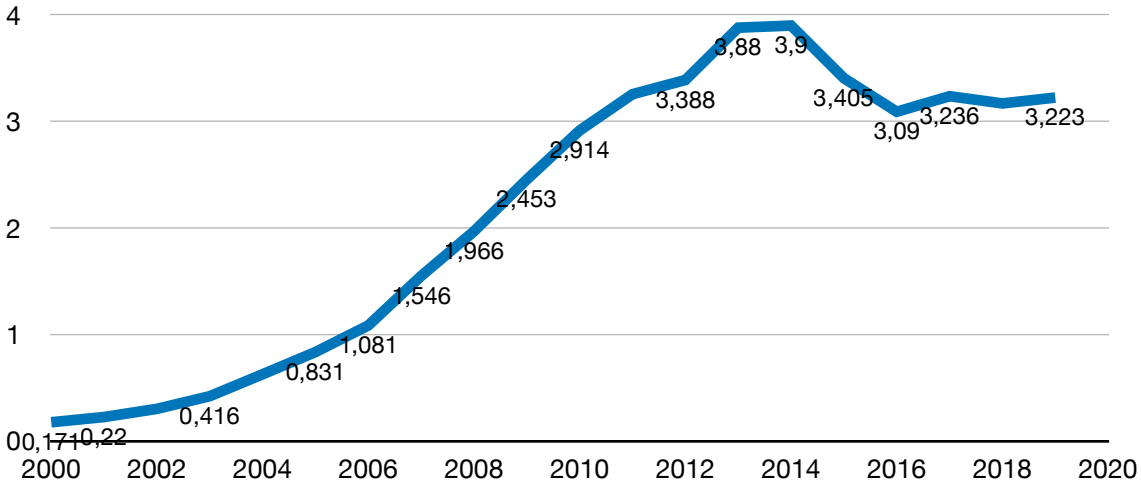
The United States and China have been important trading partners for years. The flow of goods and people between the two nations is considered to be worthing over 5,58 trillion US$ in 2020, crucial for the entire world economic environment. Over the past two years, China ranked as the third largest importer of American goods, while it ranked as the top exporter to the United States. Since his first day in the White House (2016) until his electoral defeat against the new president of the United States Joe Biden (2020), Donald Trump's political agenda has focused on reviving the American economy, putting particular emphasis on the manufacturing sector, favouring employment and "made in the USA" products. In this regard, he has diverted the attention of its citizens to the role of China in the global economy and how it is part of the recent sinking of US power. In the previous chapter we discussed about the importance of China in the global supply chain and how Chinese manufacture has gained a very prestigious position in the worldwide industry. Over the years, many American consumers have purchased Chinese products mainly for their price competitiveness and because they are qualitatively similar to American ones.

Economists agree that the competitive prices of Chinese products stem from two main factors such as the lower cost of living and consequently lower labor costs and the favourable exchange rate that the Chinese Yuan have on the dollar.

The renminbi (also called ¥Yuan), is the currency issued by the People's Bank of China and is not convertible on international markets, meaning that there is no free exchange market for Chinese currency as is the case with other many currencies. The Chinese currency is therefore not free to float and it is always subject to the control of the central government since individuals and banks holding foreign currencies aren't allowed to exchange it. Those who are willing to sell foreign currency to buy renminbi must exclusively ask to the Chinese central bank that will incorporate the foreign currency in its national reserves.

The rigidity of the renminbi exchange rate continues to be an important source of discussion at all major global financial meetings: the devaluation favors Chinese exports while limiting other countries' exports to China. As a result, China's balance of payments recorded large surpluses, causing Beijing to accumulate a massive foreign exchange reserves which are estimated to be around 3.2 trillion US$ (figure2.5).

Figure 2.5: China's foreign exchange reserves ($trillion)



Source: The World Bank

The Chinese government thanks to this huge amount of foreign exchange reserves (mostly US dollar) can control its trade policy: selling (devaluing) foreign currency would strengthen the renminbi and thus favour imports. Buying (valuing) foreign currency would weaken the renminbi and thus will benefit exports.

A considerable amount of China's foreign exchange reserves is in the form of US Treasury bills. After Japan, China is the second largest holder of US treasury securities and this poses a significant threat to the United States. Many economist and politicians fear that this will give China leverage in controlling US monetary policy, especially in

the selling scenario. By buying Treasury bonds, China has contributed keep U.S interest rates low, but if it starts selling them or just stops buying them, the interest will inevitably go up and push the US into recession. While not in China's interest, Beijing could gradually reduce its stakes in US treasury acquisitions, both to finance domestic projects, tackle coronavirus induced damages and as retaliatory weapon to use against Washington.

Under the light of these premises, those US companies unable to compete with Chinese low prices have either had to reduce production costs or have been forced to close. To minimise costs, the vast majority of companies have opted for outsourcing to China, India and later Southeast Asia. Since 1998, the U.S employment rate in the manufacturing sector has progressively decreased, reaching in 2010 the historical low of the last 72 years. Since then, there has been a modest regrowth and in 2019 about 15 million 65 thousand workers found employment. Overall, after the end of the 1990s, the number of jobs in this sector has fallen by 27%. One of the strong point of the Trump administration has focused on reviving employment in the United States both through accommodative fiscal policies and through protectionism prompting an anti-globalization economic stance. In this direction, the American president announced the political campaign "America first" and "make America great again" where every decision regarding taxes, trade, immigration took into account only the interests of the American people without worrying about diplomatic relations or the mutual interest with other nations. It is therefore evident how China represented the main obstacle to the realisation of this political agenda. For years, thousands of American companies have decided to produce in China for the advantageous labor costs, thus increasing the unemployment rate; in the commercial sphere, the trade balance was entirely in favour of the Asian giant with a respective outflow of US dollars. Finally, China has always implemented an economic system diametrically opposite to that of the capitalist countries, also becoming a worthy opponent both on a political and military level.

Since July 2018, after months of incessant threats and the ultimatum to China asking to change its trade practices, President Trump has begun to impose a series of tariffs on imports from China. Likewise, China has responded by imposing tariffs on many imports from the US. In the following months until the truce of January 2020 that led to the signing of the so-called Phase One Agreement, the two countries engaged in countless negotiations, menaces, retaliations, restrictions that led to a real trade war. So far, in the period from July 2018 to December 2019, the two countries have set tariffs on $550 billion of Chinese goods (US) and $185 billion of US goods (China), respectively. Table 2.2 gives us an overview of the ten main imported products between the United States and China in 2018, their economic value in $billion and finally the percentage they occupy in total imports.

According to OEC and UN Comtrade data, in 2018 China's top ten imported goods from the US were aircraft ($16.5 billion), electrical machinery ($13.2 billion), optical and medical equipment ($12.9 billion), other machinery ($11.5 billion), non-rail vehicles ($9.56 billion), mineral fuels ($8.56 billion), plastics and similar items ($5.83 billion), oil, seeds, agriculture ($3.89 billion)), wood pulp or other cellulosic fiber ($2.87 billion) for a total value of $87.75 billion. As for U.S imports from China, we find: electrical machinery ($132 billion), other electrical devices ($111 billion), furniture bedding ($34.5 billion), toys, games, sporting goods ($23.2 billion), plastics and plastics items ($18.9 billion), non-rail vehicles ($18.1 billion), knitted clothing and apparel ($15.8 billion), non knitted items ($13.4 billion), iron steel items ($12.5 billion) and footwear and footwear component ($12 billion) for a total value of $372.5 billion. The gap in the respective import values between the two countries is quite evident.

Table 2.2: US-China top exported goods

2018 top 10 goods typology exported from the U.S. to China (HS2)			2018 top 10 goods typology imported from the China. to the U.S.(HS2)		
	value billion US$	% export to China		value billion US$	% import from china
Aircraft	16,5	13,9	electrical machinery	132	26,5
electrical machinery	13,2	11,1	other electrical	111	22,2
Optical and medical equip	12,9	10,9	furniture beddings	34,5	6,95
other machinery	11,5	9,56	Toys, games, sports	23,2	4,64
Vehicles other than railways	9,56	8,06	plastics and articles thereof	18,9	3,78
mineral fuels, oil	8,56	7,21	vehicles other than railways	18,1	3,63
plastics and articles thereof	5,83	4,91	apparel and clothing, knitted	15,8	3,17
oil, seeds, agriculture	3,89	3,28	clothing not knitted	13,4	2,65
pulp of wood or other fibre cellulosic	2,94	2,48	iron, steels articles	12,5	2,5
Pharmaceutical products	2,87	2,42	footwear and footwear component	12	2,6
Total	87,75	73,82	Total	372,5	78,62

Source: 2018 OEC data, Data from UN Comtrade

For these reasons, the President of the United States Donald Trump, as early as January 22, 2018, began to impose tariffs on products such as steel, solar panels and aluminium from all over the world. Starting from June 2018, the United States began to impose tariffs exclusively targeting China by drafting List 1; this included duties at 25% on products such as machinery, electrical products, vehicles, etc., for a total value of 34 billion dollars. As Sino-American relations worsened, in August 2018, the United States launched a second list of 25% tariffs on Chinese products worth $16 billion. In the same period, the Chinese government responded by launching the first batch (2 product lists) by imposing duties at 25% on U.S agricultural products, automobiles, aquatic products, chemicals, etc., for a value of over 50 billion dollars. In September 2018, the escalation of the dispute between the two countries reached its peak. Throughout the List 3, the U.S started imposing 10% tariffs on more than $200 billion of new products coming from China, which in turn, through the second batch, has imposed of 5-10% tariffs on more than $60 billion worth of US products. In May 2019, after an apparent period of détente, both the U.S and China decided to increase tariffs on products previously taxed in September 2018. Finally, in the period between September and October 2019, the Trump administration launched the 4A and 4B lists, taxing additional Chinese products for a total value of over $300 billion at 7.5-10%. Similarly, chairman Xi Jin Ping through the third batch increased fees of up to 15% on many of the products belonging to the first two batches and some additional products. In February 2020, after a long period of negotiations, the two presidents signed the Phase One Deal Agreement. The united states agreed to reduce tariffs from 15% to 7.5% on products belonging to list 4A and suspending tariffs on products belonging to list 4B. China, on the other hand, has agreed to reduce the pending tariffs on batches 1 and 2 from 10% to 5% while from 5% to 2.5% for batch 3.

Table 2.3: Timeline on US-China trade war

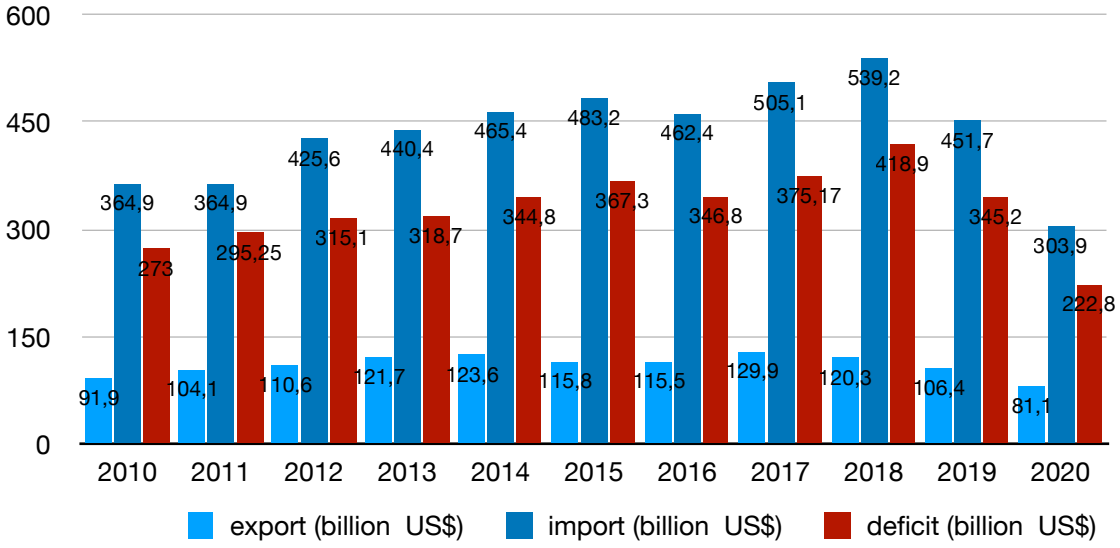
	US tariff Action on China based on section 301			Chinese tariff action on US		
Date	Impacted goods	Value in Billions $US	Tariff rate	Impacted goods	Value in Billions $US	Tariff rate
January 22 - April 2, 2018	Us tariff on imported solar panel, steel and aluminium from all countries				3	15-25%
June-July , 2018	(List 1) machinery, electrical goods, Vehicles	34	25%			
August, 2018	(List 2), polymers, plastics, generators	16	25%	First batch, 2 lists:Agricultural products, automobiles, aquatic products, chemicals, etc.	50	25%
September 24, 2018	(list 3) over 6000 commodities consumer products, chemical construction materials textiles tools food etc	200	10%	Second batch, 1 list. Agricultural products, chemicals, textiles, etc	60	5-10%
May , 2019	(List 3) increase tariffs rate	(200)	25%	Second batch increase of tariffs	(60)	5-25%
September-October 2019	(List 4A,4B) food, metal product, clothing, apparel, footwear,..	300	7,5-10%	Third batch: Additionally applies to certain products in the first two batches and some additional goods	75	2.5-15%
February 2020	Phase one deal Agreement					
After One Deal Agreement.	-US Section 301 tariffs on List 4A goods: from 15% to 7.5% - suspension of US Section 301 tariffs to be imposed on List 4B goods			-tariff rate applicable to products in batch 1 and 2 reduced from 10% to 5% - tariff rate applicable to products in batch 3 is reduced from 5% to 2.5%		

Source: Author

- The impact of trade war in the global supply chain.

Tariffs have not brought a real improvement for United States in the trade balance with China as it still leans in its favour. As shown in figure2.6, in 2018 the US trade deficit with China reached a record value of 418,9 billion, while 2019 registered a sharp decline to 345.2 billion. Nevertheless this did not translate an increase in US exports to China, but was simply the result of a decline in trade relations between the two countries, given that in 2019 the total trade volume amounted to 558.1 billion dollars while in 2018 it stood at $659.5 billion. This contraction of commercial activities has simply led the two countries to diversify their operations by expanding their range in search of new partners with a consequent increase in costs, especially in the case of the United States. In 2019 U.S exports to China fell by about 11.8% compared to 2018 with a considerable decline in the agricultural sector (soybean, honey, meat) putting at risk the ability of many American farmers to operate, given that many of them have China as their only customer. Similarly, Chinese exports to the United States fell by 16.2%, deeply impacting the revenues of many companies that had to turn to other markets, but which nevertheless symbolises that, despite the heavy tariffs imposed by the US, it remains difficult to change trade relations especially in the short run.

Figure 2.6: Total value of U.S trade in goods (export and import) with China from 2009 to 2019 billions$

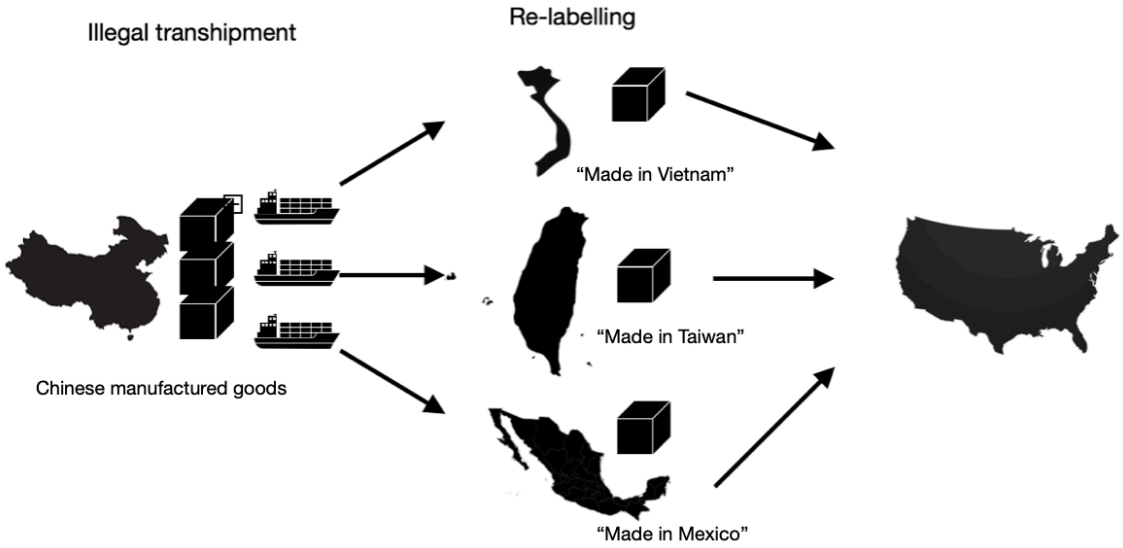


Source: The World Bank

Companies that have the entire or a part of their supply chain associated with China or the US, are unlikely to be able and desire to shift it to another country in a short time. Unfortunately, the effects of the trade war have mainly rebounded on companies.

Continuous tariffs escalations, retaliations, regulatory burdens and other barrier as well as uncertainty, brought many questions on how firms should establish their supply chain in order to avoid commercial risks. The costs associated with moving the supply chain from one country to another are enormous and often these operations do not perform as expected. Moreover, many times, the tariffs are only temporary, aleatory and can affect any country. It is therefore evident that the plan conceived by the Trump's administration did not bear the hoped-for results due to a numerous of reasons. One of them is transshipment alias when the traded goods layover to a third place en route before reaching the final destination. This practice is often used to change means of transport during the shipment of commodities (trans-loading), combining small shipment into big ones (consolidation), divide large shipment into smaller ones (de-consolidation) or sometimes to sidestep tariffs (illegally). A large number of Chinese suppliers have adopted this tactic to avoid the tariffs imposed during the trade war. Commodities are shipped from China to neighbour counties (Taiwan,Hong Kong, Vietnam, Cambodia, Singapore,Mexico, etc.) which usually are trade partner with the US. Here the goods are re-labeled ditching their Chinese origin and are finally shipped to the United States without incurring in ulterior penalties imposed on "made in China" products. Transhipment used with the aim of counterfeiting the origin of the goods is obviously an illegal practice and according to the U.S law, constitute civil and criminal violation often leading to heavy financial penalties and also prison. Nevertheless, in the past couples of months this phenomenon increased, becoming in many cases almost systematic, difficult to recognise and in which special economic zones play a central role such as the alleged case of Sihanoukville SEZ in Cambodia. Some governments accepted this practice or at least turned a blind eye, given that China invests enormous capitals influencing part of their economical choices. This could be precisely the case of Cambodia, since China is its biggest investor and aid donor, and has included the country in the future plans of development associated with the Belt and Road Initiative (BRI). On the contrary, some countries oppose this practice. According to the data provided by Vietnam Briefing, in 2019 Chinese FDI into Vietnam grew by 7,2% as compared to the same period in 2018. It is natural to think that part of these investments are associated with re-labelling. However, the Vietnamese government officially declared that such deceitful practice only damages the interest of the Vietnam, affecting both the industry and the consumers, ruining the reputation of Vietnamese manufactured products and companies. So the Vietnamese customs is currently working side by side with the US in order to eradicate this practice and clearing the name of the Country from being perceived as a transhipment hub.

Figure 2.6: The phenomenon of illegal transhipment

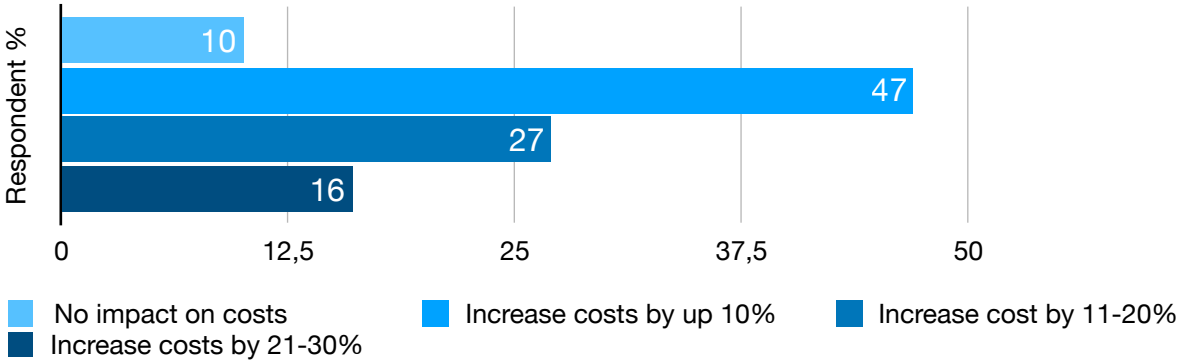


Source: Author

After the signing of the One Deal Agreement, the trade war seems to have subsided but many doubts about the future still remain. How the administration of the new president of the United States, Joe Biden, intends to deal in bilateral relations is undoubtedly one of them. In the meantime, all the companies with operations both the United States and China are considering the best solutions to adopt in order to ensure the best possible return. Another characterising aspect of the trade war and that mustn't be undervalued, is the non-tariff barriers. Restriction and uncertainty of possible future tariff represents one of the most prevalent non-tariff issue as well as the increased custom clearance delays (striker and more time spending controls), security audit and product inspections as well as business and licensing barriers. The rising cost of raw material and goods sold from the upstream suppliers force global supply chain to rethink their medium-stream strategy. The increase of tariff and non-tariff barriers obliges companies to move their production, reduce their scale operations affecting their margins and, ultimately, force them to raise the price to the end consumers, fuelling the inflationary spiral. During the trade war, many companies seriously considered about decoupling from China (some did) and relocate elsewhere but few have found themselves ready to face the practical challenges that this operation entails. However, despite the turbulent trade war, characterised by sanctions, threats, tit for tat strategy, the vast majority of business have not abandoned China or their Chinese suppliers. In this regard AmCham China, AmCham Shanghai and PwC China between September and October 2019 conducted a survey in order to understand better how the bilateral tension affected the operations of companies that work in China and what might be the next supply chains strategies adopted by these

companies. According to the result of the survey, the US-China trade war had an impact on the supply chain operations for 90% of the respondents, forcing companies to diversify their supply base (64%), add additional risk management protocol (57%), adopting cost control measure (54%), relocate manufacturing or sourcing capabilities out of China (24%); only for 4% of respondents it didn't have a significative impact.

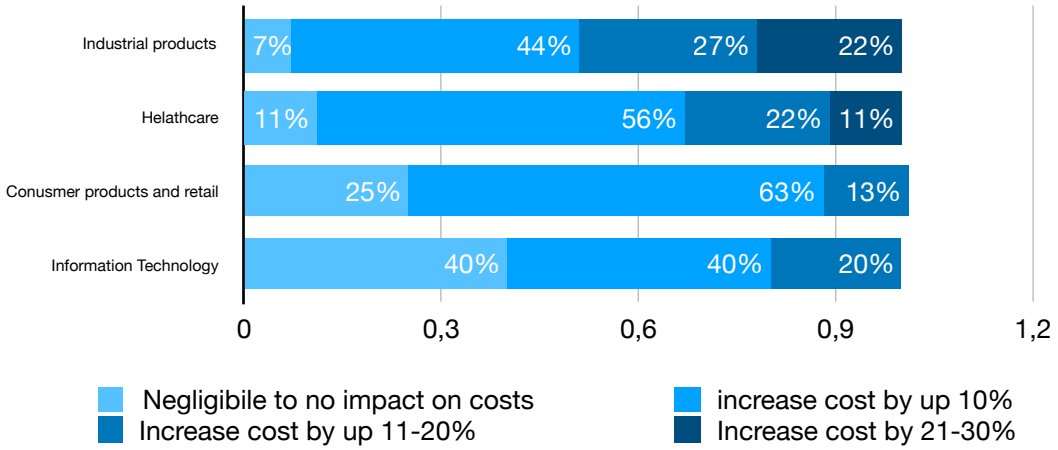
figure 2.7: Survey about impact of trade war on supply chain, 2019



Source: AmCham China, AmCham Shanghai, and PwC China

Always according to the survey, the trade-war and the relative tariffs, for 47% of respondent it has increased the supply chain cost up to 10%, for 27% of them it increase costs by 11-20%, for 16% of companies costs rose by 21-30% and for the remaining 10% it didn't have any impact on costs. The trade war has affected some sectors over others. Technological products and industrial products (energy, cars, chemicals, machinery) have paid the greatest expense. Many Chinese electronics companies are highly dependent on the United States as about 90% of the microchips and processors in computers and smartphones are imported. Similarly, many US auto and machinery manufacturers have suffered a severe backlash from tariffs on steel, aluminum, chemicals and electronics. About 22% of US industrial product manufacturers experienced a 21-30% cost increase within their supply chain, while the average cost increase for all other industries was generally around 10%.

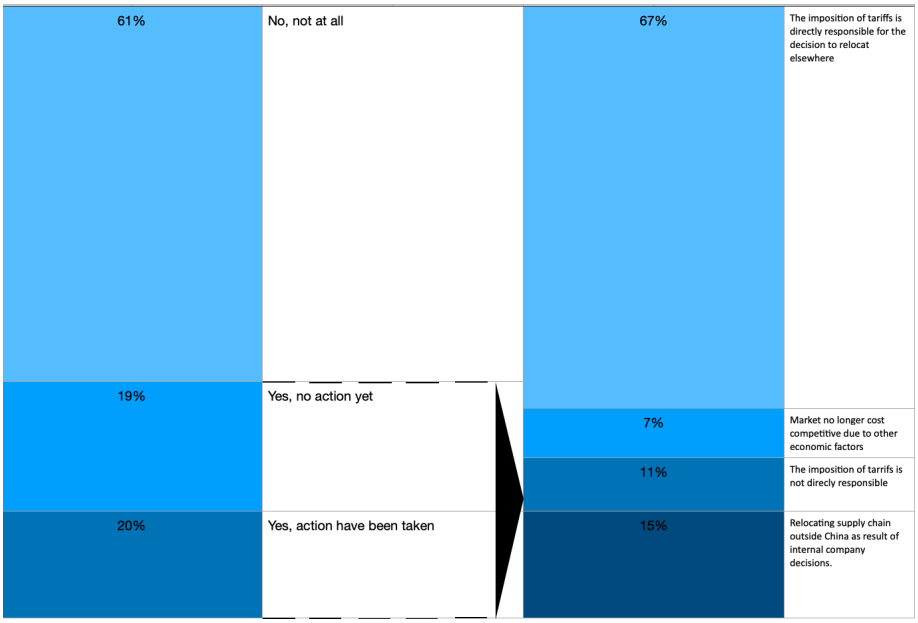
Figure 2.8: How the imposition of tariffs by the US and China affected costs associated with supply chain by industrial sector.



Source:Source: AmCham China, AmCham Shanghai, and PwC China

Although the trade war has unquestionably jeopardised the ability of many companies to remain competitive in the market, eroding some of their profits, only 20% of the companies surveyed intend to relocate outside China to mitigate the effects brought by the increase of tariffs. As can be seen from figure 2.9, 61% of companies operating in China have no intention of leaving the country, 19% are considering the idea but have not yet taken any initiative while as mentioned above only 20%, have already undertaken some relocation actions. The main reasons that motivated the decision to relocate are directly attributable to the tariff increase as 67% of respondents affirmed that the tariff imposition is directly responsible for their decision to relocate production / source outside China. Only 7% of those willing to relocate said they are moving their supply chain because the Chinese market is no longer cost competitive due to other economic factors. The other 11% of respondents stated that tariffs are not directly responsible but still played an important role and lastly, 15% said they wanted to relocate outside China as a result of internal company decision.

Figure 2.9: Companies considering relocation manufacturing or sourcing outside China and the what are the main motivations



Source:Source: AmCham China, AmCham Shanghai, and PwC China

2.2.The impact of Corona Virus on Chinese supply chain.

The third major challenge that many companies operating or having part of their supply chain in China are facing is the destruction brought by the COVID-19 pandemic. Starting from Wuhan in the Hubei province (China), the novel coronavirus (COVID-19), after only two months of circulation in China, has spread all over the world. After an initial period of uncertainty and indecision, from December 2019 to February 2020, the Asian giant has imposed severe containment measures. By implementing general lockdowns and quarantines nationwide and subsequently targeting specific provinces, according to the Chinese government statements, the country has managed to limit the transmission of the virus with less than 40 reported cases in the last few months[7]. But if in China the cases of transmissions seem to have drastically decreased, in the rest of the world they have dramatically skyrocketed. The large majority of countries have imposed containment measures similar to those adopted by China, enforcing

[7] Latest data refers to December 2020

prolonged lockdowns, long quarantine periods and the closure of borders. The implementation and the extensions of business and factories shutdowns, cancellations or long delays in international shipping and finally the closure of borders with the relative denial of movement of goods and people have led to a unheard-of disruption in the supply chain, causing incalculable damages to the world's economy. The fact that such destructive pandemic originated in China was a catastrophe since, as we all know, in many industrial sectors, China plays a core role in global supply chain. Production disruption not only harms companies but also families and consumers because a shortening of products availability leads to price rises. Companies, due to the temporarily impossibility to procure from China, suffered in the search of alternative suppliers, ending up forced to reduce their overall volume of production and sometimes to limit the losses, in the scenario of inelastic demand, increase the sale prices. In other cases the opposite occurred. The price of oil, hitting historic lows, has influenced a myriad of different sectors. Ethanol and biodiesel suddenly lost competitiveness, so, many sugar cane and vegetable seed producers preferred to turn their crops into sugar seed oils; in doing so they caused a surplus in the market and consequently leading to the collapse of their relative prices. Although some sectors such supermarkets and food industry benefitted from the pandemic, many other registered huge losses. Services, including hospitality industry and retail were hit the hardest, followed by manufacturing and wholesale. Concerning manufacturing, the most affected industry was high tech goods, as China is the largest exporter and producer of electronic components. The disruption of the supply chain led to a slowdown in production and sales, impacting on revenues. But while the demand for many technological products such as smartphones, computers and tablets has increased during the pandemic, the automotive sector has seen a steep decline. Furthermore, besides manufacturers, every transport company felt the impact as carriers due to the travel ban imposed by governments, had to cancel their routes. The novel COVID-19 pandemic has changed the entire business environment, enlightened the importance of being able to react promptly and to adapt to the unpredictable. Flexibility, the ability to operate in new circumstances, having backup plans and being able to diversify are all essential features that a competitive company must have if it desires to continue doing business in the modern and most adverse conditions. Another important truth that the pandemic has revealed is the extreme dependence that the global supply chain has with China. Many companies around the world are hugely reliant on production and suppliers from China, Southeast Asia and all the other cheap labor cost jurisdictions. In this regard, in order to avoid future disruptions and limitations in the procurement of raw materials and component, many companies started rethink their stability and reliability for the long term period by evaluating their supply chain operations. Consideration must incorporate the revision of contractual

obligations between parties, definition of hardship and force majeure clauses, assessing relocation costs, visa issues, tax rate and employment conditions. Moreover keeping open the possibility to change course if the situation dictates it or if are discovered circumstances for which it is necessary to maintain the supply chain as agile as possible are equally important. During the COVID-19 pandemic, a record number of force majeure clause certificates were issued in China, attesting the difficulties that many companies had in managing to carry out their contractual obligations. With the purpose to protect themselves, companies with operation in China, before looking somewhere else, must first of all, review the contractual conditions previously signed; so, in the event they run into similar situations, they will not suffer fatal damages. Before assessing, whether due to the recent COVID-19 pandemic, many foreign companies intend to hijack their supply chain operation away from China in search of possible safer solutions, it is necessary to provide a brief picture of the Chinese economic and logistic situation of the period immediately following the outbreak of the pandemic.

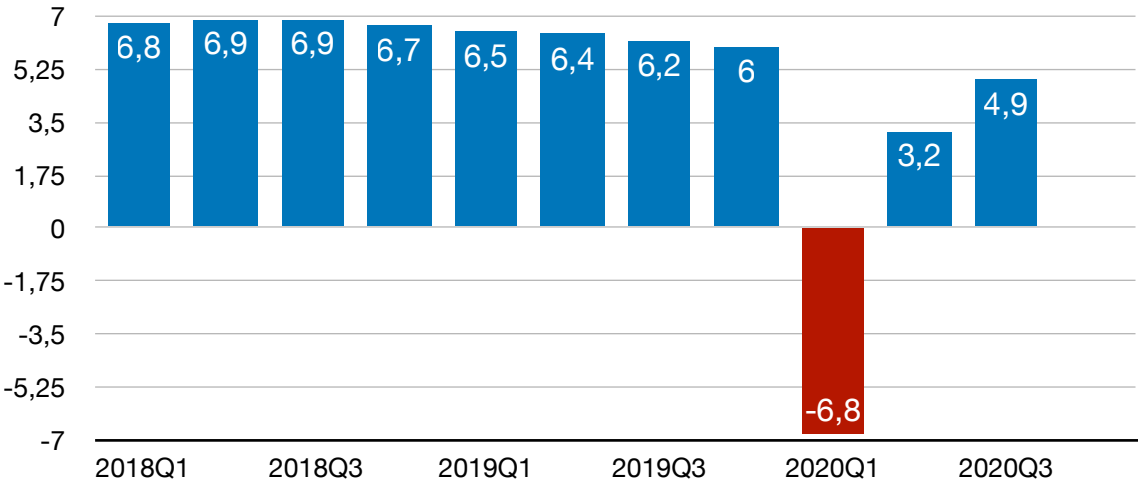
With more than half of the global population in lock down, factories and economic activities temporarily shut down, more than 400 million full-time job were lost, according to international labor organisation. After the initial peak of 14.5% in April, the Unites States unemployment rate decreased to 6.9% in October a value still far higher than the one registered in the same period of 2019 (3.6%). In October 2020, In the European Union (27 countries) the average unemployment rate was 7.4%, an increase of 0,8% compared to the same period of 2019 (6.6%). In China the average unemployment rates rose from the 3.6% of 2019 to 3.8% in 2020.

On April 14, 2020, the International Monetary Fund (IMF) predicted that the global economy will shrink by nearly 3% in 2020, with the US economy shrinking by 5.2% and Europe by 7.3%. The deepest global recession since the end of World war two. A survey conducted by the International Monetary Fund's inquiring 995 small and medium-sized companies showed that 58% of companies reported that the epidemic caused them to lose more than 20% of their income, nearly 30% of companies believed that their revenues were reduced by more than 50%, and some companies were on the verge of bankruptcy.

In accordance with the International Monetary Fund (IMF), in 2019, countries real GDP growth rate were almost everywhere positive with the exclusion of Venezuela (-35%), Iran (-6.5%), Argentina (-2.1%), Mexico (-0.3%), and other few African countries such as Sudan (-2.5%) and Namibia (-1%). As regards of 2020, the picture is totally different. After the outbreak of COVID-19 pandemic and the related containment measure adopted by governments to limit the spread of the virus, the countries that have managed to maintain their real GDP growth rate positive can be counted on one hand: Egypt (+3.5% in 2020 vs +5.6% in 2019), China (+1.9% vs +6.9%), Vietnam (+1.6% vs

+7%) Myanmar (+2% vs 6.5%). On the other hand, the real GDP growth rate of the European and American countries collapsed. The most affected countries were Spain (-12.8% in 2020 vs +2% of 2019), Italy (-10.6% vs +0.2%), India (-10% vs +4.2%), Portugal (-10% vs +2.2%), France & U.K (-9.8% vs +1.5%), Canada (-7.1% vs +1.7%), Germany (-6% vs +0.6%) United States (-4.1% vs +2.2%) and Russia (-4.3% vs 1.3%).
Concerning the Chinese economy, as shown in figure 2.10, in Q1, due to the ongoing COVID-19 pandemic, GDP has contracted by 6.8%, reaching its lowest point in more than four decades (last negative growth rate registered was in 1976 with-1,57%). The total fixed asset investment declined by 16.1%, real estate investment dropped by 7.7%, the growth of industrial added values decreased by 8.4%, total retail sales of consumer goods fell by 19% and imports and exports contracted by 6.4%. In Q3, with the total reopening of production plants and the end of the pandemic's severe containment measures, the GDP growth rate advanced by 4.9%, faster than previous quarter Q2 (+3.2%), but still slower than the forecast 5,2%. However, despite having partially disappointed the expectations, during this quarter there are promising indicators that the expansion is extending to the consumptions and not only to the industrial sector (the government spent considerable amount of economic resources to support industry and accelerate its recovery).

Figure 2.10: China's GDP growth (quarterly %)

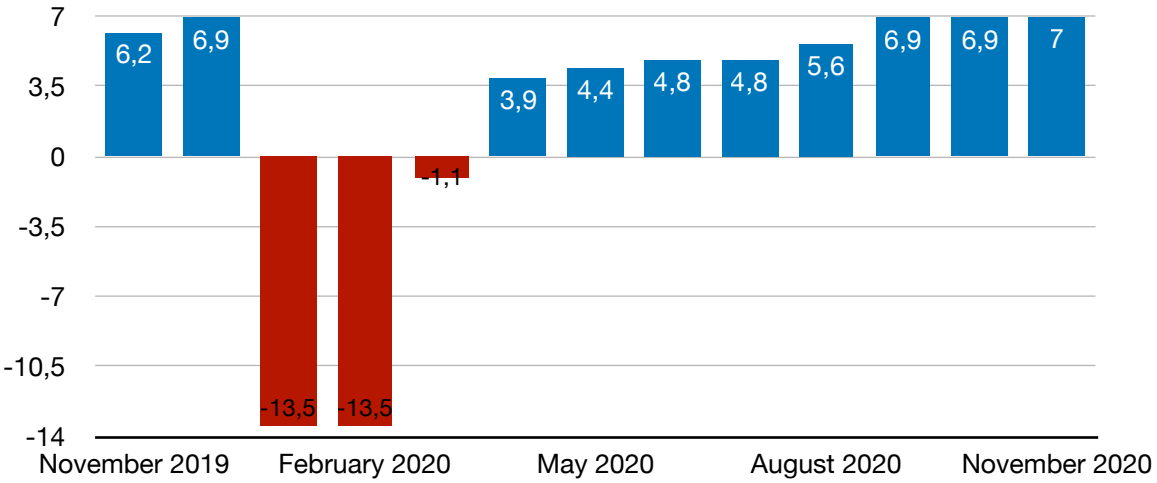


Source: The world Bank

In Q3 industrial production increased by 6.9% (higher than the expected 6.5%) resulting the biggest gain in 2020. Retail advanced by 3.3% year on year (September). In general for the first time since January the economy expanded 0.7 point percent, able to fully recover from the previous losses and managing to remain positive in the overall annual growth. From January 2020 to October 2020 the primary sector increased by 2.3% the secondary sector raised by 0,9% and the tertiary (the most

affected by the pandemic) 0.4%. The secondary sector (the driving force of the Chinese economy) has managed to recover in such a short time thanks to the incessant rising demand for Personal Protective Equipment (PPE)[8], generic medical equipment and work from home (WFH) technologies that many countries required to counter the advance of the virus. Also, the government expansionary maneuver that guaranteed a series of subsidies and tax reliefs, reduction in landing rates and allowing banks to reduce their minimum monetary reserves had a positive impact.

Figure 2.11: China's industrial production output growth (monthly %)



Source:National Bureau of Statistics of China

According to the data provided by National Bureau of Statistics of China, after the initial two-three months of lockdown, China's manufacturing were able to recover from the initial COVID-19 shock. Since September 2020, China's secondary sector returned to previous coronavirus values, marking a growth of 6.9%. In the first ten months, the value added of industries above designated size increased by 1.8 percent year on year and 0,78% to the previous month. In October, the value added of the mining industry increased by 3.5% year on year, up 1.3% points over September; manufacturing industry rose by 7.5 percent, 0.1% less over last month; distribution of electricity, heating, gas and water increased by 4.0% meaning a 0.5% point decrease over last month. Among the other major industries, in October, the value added of agricultural and sideline food processing industry rose by 4.8%, textile industry increased by 9.5%, chemical raw materials and chemical products manufacturing industry incremented by 8.8%, non-metallic mineral products industry by +9.3%, ferrous metal smelting and processing industry and non-ferrous metal smelting and processing industry +11.2 & +4.7%; general equipment manufacturing industry, special equipment manufacturing

[8] Personal Protective Equipment refers to clothing, masks, helmets, etc, designed to protect individuals from infections, injury or general perils.

industry and automobile manufacturing industry respectively rose by +13.1%, +8.0% +14.7%; railways, shipbuilding, aerospace and other transportation equipment-0.7%; electrical machinery and equipment manufacturing, and manufacturing of computer, communication and other electronic equipment rose by +17.6%, production and distribution of electric power, heat and water +3.6%. For the first time since January industrial output increased by 1.8%

Since the end of March and the beginning of April, most of the Chinese companies, after implementing all necessary safety measures, returned to producing at full capacity. During the period between January and February 2020, the percentage of industrial enterprises above designed size[9] that had to stop production due to COVID-19 was significantly high. Depending on the cases recorded and the spread of the virus, Chinese cities, municipalities and provinces had more or less prolonged lockdowns involving a different number of companies shutdowns. Regarding the four provinces (excluding Hong Kong, Taiwan) with the highest GDP, Fujian province and Guangdong province were hit the hardest since in mid-February the number of companies that resumed work were just around 50%. During the same period, in Zhejiang province and Jiangsu province the percentage of companies that resumed work were higher with respectively 56,2% and 65%. By the end of March, almost all the companies were able to resume work in all these jurisdictions. At the present, the containment of the virus in China seems to have taken place with great success and thanks to the encouraging news of the discovery of the vaccine by Chinese, Russian and the American pharmaceutical companies such as Pfizer and Moderna, the danger of new lockdowns within the whole country seems to be concluded.

Table 2.4: Industrial enterprises that have resumed work in China (%)

Percentage of industrial enterprises above designated size (规模以上企业) which have resumed work				
Province	Mid-February	End-Febraury	Mid-March	End-March
Jiangsu	65%	99%	99%	100%
Zhejiang	56%	98%	100%	100%
Fujian	50%	89%	96%	100%
Guangdong	50%	90%	97%	100%

Source:National Bureau of Statistics of China

[9]规模以上企业, Enterprises above designated size is a statistical term used in the People's Republic of China to refer to industrial enterprises with annual main business revenue of 20 million yuan or more.

Although the factories have resumed operating at full volume, operations along the entire supply chain are not as smooth as before the outbreak of the pandemic and it will most likely take years before returning to the values of early 2019. The major problems that are still affecting the entire supply chain functionality are the weak consumer demand both on national and international scale, bottlenecks situations arising during the procurement of raw material or components, the production and distribution and finally the still ongoing limited transport capacity.

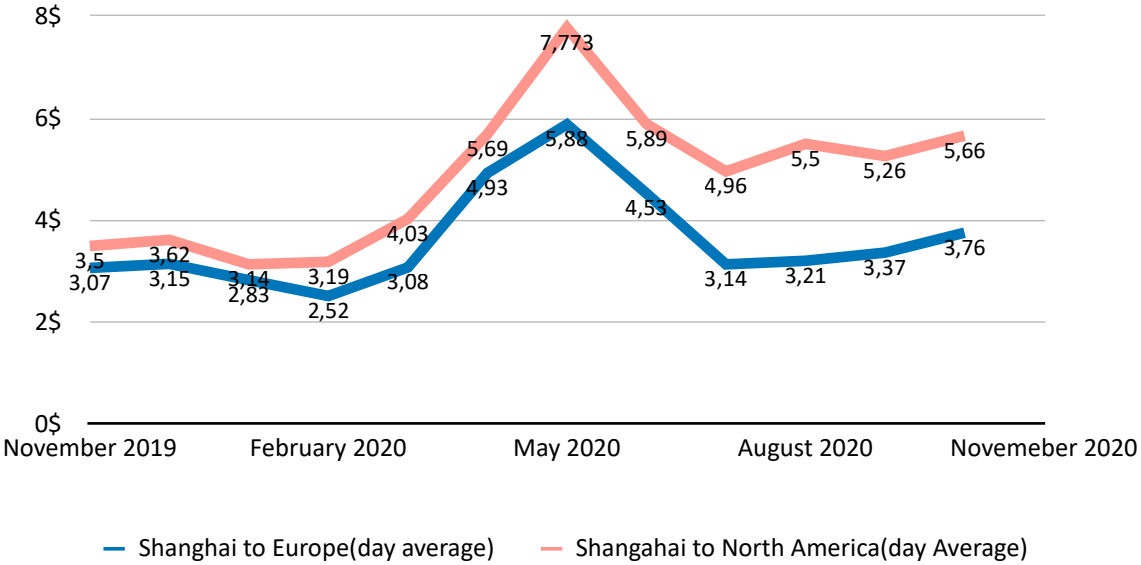
One of the difficulties that many Chinese manufacturers are encountering is the complexity of sourcing intermediate goods or component from countries or regions overseas affected by the virus. Even worse, is the inability to delivery goods to foreign countries due to the ongoing closure of borders, entry restrictions and prolonged quarantine period. Although Chinese factories are now totally back up online, many manufacturers are still facing these sort of problems. The demand of specific products is still lacking behind, and many companies find it hard to keep their order book filled and have to face an increasing number of product cancellation or shipment delays. International transport plays an essential role for trade and since travel and human relations are a core part of it, the shipping industry was highly affected both directly and indirectly by COVID-19. Although now the situation has almost returned to beginning 2019 values (in some cases even higher), many transport companies are still reckoning on the costs and difficulties that this pandemic has brought. In China, traffic has returned to its usual liveliness, but road freight transport is not yet at full capacity as there are still some difficulties in finding truck drivers given the different quarantine requirements and methods to comply across the provinces. When in March and April almost all the Chinese factories and warehouses reopened, many companies experienced a battle for trucks, inevitably leaving someone unsatisfied. In the first two quarters of 2020, revenues growth for the freight trucking industry has seen a-10.1% due to the declining demand. Road freight export incurred in severe delays at the gateway (took 4 to 5 days on the customs clearance) and imports needed around 1 to 3 days before clearing.

As for air carriers, all commercial flights have suffered a drastic reduction in their regular schedules. Civilian airlines were the one that suffered the biggest losses. The suspension of airlines means that there is no source of income, but companies still need to pay various expenses such as depreciation, maintenance, salaries and bank interests. The epidemic may cause some airlines to go bankrupt, especially those that do not have sufficient cash flow reserves or are caught in price competition. For example, after the 2008 financial crisis, many U.S airlines went bankrupt due to the shrinking demand for air transportation. Under such background, it is difficult to implement leasing agreements between financial institutions and airlines, and

overcapacity will also lead to oversupply in the secondary market. Aircraft giant Boeing did not receive any new orders in January 2020, and its stock price has suffered an unprecedented plunge. However after the peak in February, air traffic in China gradually started to grow again and approached pre-COVID-19 levels. The missing share is related to international travel to and from China, which remain very limited, mainly due to the restrictions on international arrivals that the Chinese government maintains in place. Domestic traffic, on the other hand, has not only recovered, but has even exceeded the levels of 2019. According to official data from the Chinese Civil Aviation, in fact, in September 2020 there were a total of 371,000 passenger flights within Chinese borders, a 3.5% increase compared to 2019. In October, thanks to the boom in bookings during the Golden Week[10] driven by promotional tourist offers and by the optimism that reigns in China for being able to keep the spread of the pandemic under control, the numbers were even higher.

Even during the peak of the pandemic, freight forwarding was still possibile in all region (except Wuhan) but still with limited connections. According to the data provided by WorldACD Market, even due to the gigantic disruption in air freight demand and capacity (limited flights) with the consequent massive drops in volume, in the first half of 2020 air freight revenues rose by 20%.

Figure 2.12: The average monthly spot rate per kilogram from Shangai to Europe and North America (U.S$)



Source: Eurocontrol, Aireon

[10] Celebration of the anniversary of the founding of the People's Republic of China which begins on October the 1st and ends 7-8 days later.

However this wasn't an isolated case affecting just China but a trend on a global scale. The data provided by Eurocontrol in conjunction with Aireon, gives us a clear insight. The largest increase in air freight cost were registered in the Asia Pacific area (+76%) while the smallest was from Latin America (+10%). Thanks to the rising demand for PPE, China did not show any decrease in YoY volume and so remained flat. However, the transportation of PPE goods and subsequently the rising demand of technological product such 5G smartphones put pressure on an already limited capacity. Under this scenario in 2020, compared to the first half of 2019, air cargo charges from China increased by an incredible 136%. Generally about half of the cargo capacity on the Europe-China route is provided by the belly space of passengers airliners, but given the recent suspension of many flights routes, the carrying capacity of air transport has halved. The cancellation of flights has forced many exporters to turn to other airports or air routes, forcing them to take additional steps that often affect costs. Others, not finding suitable solutions, have preferred to turn to maritime freighters. Concerning naval transport, ship carrying passengers (Passenger ships, Cruises, roll-on roll-off ships) were the most affected by the epidemic. Cruise ships remain one of the sectors most distressed by COVID-19, especially following the numerous cases of infection registered on board in which many people have lost their lives. For this reasons, almost every major cruise companies have suspended theirs voyages since March 2020. As the spread of the virus around the world has worsened, ports have seen a considerable increase in vessel at anchor and vessel queued up waiting their turn to load and unload their cargo, leading to a significant increased of time to complete these operations. Concerning the other sectors, although they were affected, trade didn't stop. Maritime transport not only is the beating heart of international trade but it is also the backbone on which the global economy rests; according to UNCTAD "approximately 80% of global trade by volume and over 70% of global trade by value are shipped by sea and are handled by ports around the world". It is therefore unthinkable to suspend it since the economic damage would be incalculable. However, this does not mean that there have not been limitations and reductions. If we consider the data provided by European Maritime Safety Agency (EMSA), when comparing the period from March to November (week 1-46) 2020 with the same period in 2019 we can visibly attest a reduction of the ship traffic in the route from Europe to China (and vice versa). Their analysis is based on "ship calls in Europe by ships which had previously called at any Chinese port approximately one month before[11]" and viceversa. As we all know container ships are the most numerous and frequent vessels that sail the seas on the Europe China route, and the most interesting to analyse if want to focus on changes in international trade. Even if the data provided by EMSA do not certify the real direction of the traded goods with exact precision, whether a ship is loading or unloading or the volumes and values

[11] One month is the average and reasonable amount of time that a ship from Europe takes to reach a Chinese port or vice versa.

of the traded cargo, they still remain an excellent tool for determining import / export volumes and the traffic trend from 2019 and 2020 period. Considering the time-frame from the first week to the forty-sixth week (1-46) we will notice that there are substantial differences in the maritime traffic of commercial vessels (containers, vehicle carrier, general cargo gas carrier, bulk carrier) in the Europe-China and China-Europe routes. Compared to 2019, in 2020 there was a sharp decline in seaports calls and therefore in the total volume of goods transported and traffic flow, recording an average decline of-38.0% for the route China to Europe, while a considerable reduction of-50.9% in the Europe-China route.

Table 2.5 shows the total number of port calls per ship type both from Europe to China and the China to Europe routes. The time period considered is the one starting from week 1 to week 46 of the year 2019 and year 2020.

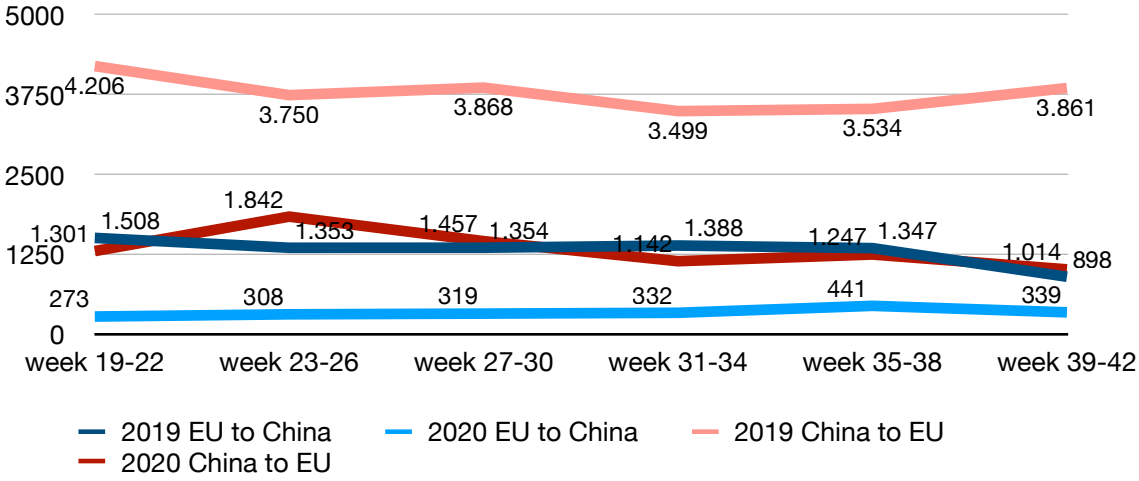
Table 2.5: Number of port calls per ship type both from Europe to China and China to Europe

Ship type	China to Europe			Europe To China		
	2019	2020	Var (%)	2019	2020	Var (%)
Container-ships	43,632	26,834	-38.5%	16,098	6,995	-56.5%
Vehicle carriers	1,383	850	-38.5%	3,126	1,327	-57.5%
General cargo	331	444	34.1%	189	653	245.5%
Gas carrier	202	131	-35.1%	361	424	17.5%
Bulk carrier	217	155	-26.6%	368	393	6.8%
Total Average	45,765	28,414	-38.0%	29,142	9,729	-50.9%

Source: European Maritime Safety Agency

The number of ship calls from China to Europe in 2020 decreased significantly with a reduction by 38,5% both for containerships (43,632 vs 26,834) and vehicle carriers (1,383 vs 850) while general cargo rose by 34.1% (331 vs 444). Concerning gas carrier and bulk carrier both decreased by 35.1% (202 vs 131) and 26.6% (217 vs 155). Regarding the EU-China route containerships, calls decreased by a massive-56.5% (16,098 vs 6995) and vehicle carrier also dropped by-57.5% (3,126 vs 1,327). However there have been registered positive results concerning general cargo with a +245.5% (189 vs 424) gas carrier +17.5% (361 vs 424) and bulk carrier +6.8% (368 vs 393).

Figure 2.13: Containerships traffic China to Europe and Europe to China



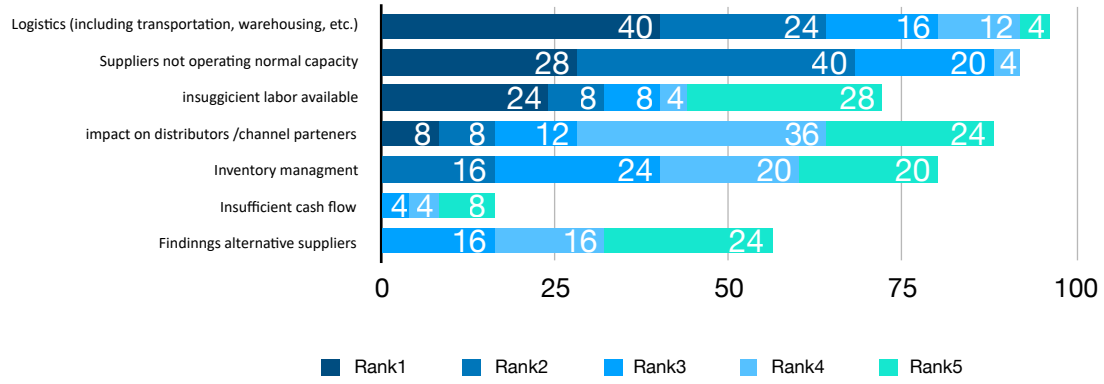
Source: European Maritime Safety Agency

So far we have briefly explained how COVID-19 epidemic affected part of the supply chain with a putting particular focus on the disclosure of factories and the limitations of transports. But what are the main repercussions that this unprecedented situation brought to the companies that work with China? The surveys conducted by AmCham China, AmCham Shanghai, and PwC China give us and interesting insight about the major problematic that many companies that operate within China had and still have to face today. The survey was conducted in March 2020, a period which coincides with the reopening of the production plants in China. About 25 American multinationals were asked what are the impact that COVID-19 has brought on their supply chain and what processes were implemented to cope with this epidemic. Certainly the number of companies involved in the survey is not high but it still provides a good representation of what foreign firms experienced and what challenges are still facing. Since the survey was conducted towards the end of March, the first question was whether their factories or manufacturing facilities were running at normal capacity. Only 52% of companies replied that they were operating at full capacity while 40% of respondents were above 50% and the remaining 8% said they still running below 50%. To those businesses still heavily affected were also asked when they think they will reach normal capacity; 48% of respondents are still uncertain while, the remaining believe to be fully operative in May 2020. Second question was about their China supply chain operations. More than 68% of responders thought that their supply chain operations will return normal in less than 3 months, 28% between 3-6 month, 4% in more than 18 months. This indicates that the interruption of the supply chain does not

to seem protract in the long run since there are very encouraging signs about the resumption of normal commercial operations. The third question was concerning their supply chain import and export activities. In general it seems that the epidemic did not have an extremely negative impact on import-export operations, leaving instead a limited shock; Concerning imports, 36% of companies suffered a minimal impact, 24% didn't have any impact, 24% said is too soon to tell, 16% suffered strong impact, and less than 4% had severe impact. Regarding exportation, 44% of respondents had limited impact, 24% no impact, 20% too soon to tell, 8% suffered strong impact and 4% severe impact. On average, the damage caused by COVID-19 seems to be of similar magnitude for both sectors, albeit more substantial losses registered in importation. Then it was asked about the greatest supply chain challenge over the next few months. Logistics (transportation, warehousing, etc) were the biggest issue for more than 40% of interviewed companies followed by supplier not operating at normal capacity (28%), insufficient labor available (24%), impact on distributors and channels management (8%). Inventory management, insufficient cash flow and difficult of findings new supplier were also commonly reported challenges.

Table 2.15 represents the major challenges that firm must face in their China supply chain operation on a scale 1-5, with 1 the greatest.

Figure 2.14: Major next few months challenges that firm must face in their China supply chain operation on a scale 1-5, with 1 the greatest.



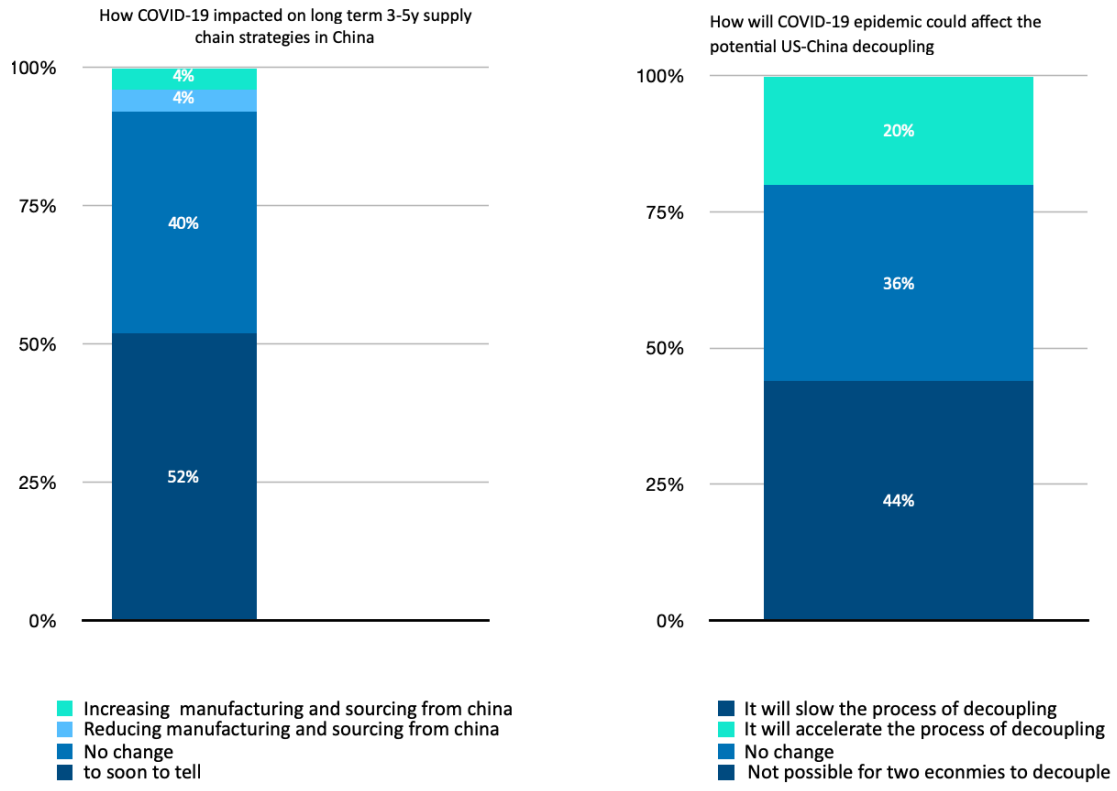
Source: AmCham China, AmCham Shanghai, and PwC China

The final part of the survey focused on the possibility if coronavirus epidemic will have an impact on the choice to move the supply chain and production activities out of China, favouring the decoupling. The first question asked was about if firms have plans to move production or sourcing operations to other Chinese regions or outside China

due to COVID-19 pandemic. Surprisingly 84% of the firms answered that they don't have any intention of doing so, 12% believe that they will adjust part of supply chain both domestically and outside China, 4% are thinking of moving operations outside China and 0% are willing to relocate in other Chinese regions and provinces. Concerning how the pandemic impacted on the long-term supply chain strategy (3-5 years) in China, 52% of firms believe is still too early to tell, 40% think there will not be any changes, 4% think they will reduce manufacturing and sourcing from China while on the contrary 4% will increase their operation in the Country. As we have seen in the previous pages, US-China decoupling is a hot topic in recent years; it has been asked whether COVID-19 will favour this trend. Only 20% of companies believe that the pandemic will have a significant impact on acceleration the process of decoupling, 44% think is not possible for the two economies to decouple, 36% believe there will be no change.

Figure 2.15 represent how COVID-19 impacted on long term supply chain strategies in China (3-5 years) and how could affect the potential US-China decoupling.

Figure 2.15: Impact of COVID-19 on long term supply chain strategies in China (3-5 years) and how could affect the potential US-China decoupling



Source: AmCham China, AmCham Shanghai, and PwC China

In an incalculable number of organisations the COVID-19 outbreak has triggered a crisis in their global supply chain operations. This was mainly due to the lack of understanding and flexibility of the multiple layers of their global supply chains and the absence of diversification in their supply strategies. The impact of the epidemic on the world's economy can be divided into two stages: spread within China and spread across the world. Compared to the SARS epidemic period, today the service industry accounts for nearly 60% of China's gross domestic product (GDP), instead of 46.5% in 2002-2003. This implicate that the epidemic is already having a more profound impact on China and the world economy. In addition, the Chinese sectors, including mechanical, electrical, chemical, transportation, medical equipment, textiles and many others, are closely linked to the European or US economy. The epidemic may cause the transfer of problematic to related industries between different countries or regions. According to the International Monetary Fund's research, China's contribution to the world economy reached one-third in 2019; so without considering the spread of the virus around the globe, just the shutdown of China's manufacturing industry induced by the epidemic had alone a very negative impact on the world economy. According to the analysis of Nikkei, for every US$ 10 billion lost in China's manufacturing industry, overseas production and sales felt by US$ 6.7 billion. As we all know the Unites States and EU countries have a huge import demand for China's intermediate products, primary processing products and finished product. However, in order to produce these products and components, especially in automobile and semiconductor industries, China is hugely reliant on countries that play an important role in the global supply chain such as Japan, Italy, South Korea and Iran. In the globalization era, the interconnection of supply chains and economies between the various countries of the world is so high that if one country might encounters problems, this would affect the entire worldwide production.

During the early stages of the outbreak some companies have considered to move away from China and source somewhere else. However, now this proposition seems illogical since the vast majority of alternative countries are still dealing with COVID-19 while China has successfully defeated the virus. Moreover, shift the supply chain operations to other Asian counties during the pandemic period may not as easy as it seems. Many industries such as textile and apparel, automotive and electronics in Asia are heavily reliant on China's component. Furthermore, due to the Sino-American trade war, many US companies have already limited their sourcing from China by choosing neighbouring countries that are currently already experiencing capacity constraints (for example, at the moment the capacity of production plants in Vietnam is completely saturated). In addition, due to the still ongoing travel restriction, flight suspension and prolonged observance quarantines period, management teams coming from China cannot visit their facilities in other Asian countries or make arrangement to move

production to new sites. Moreover we have to consider that China has a unique knowledge and technologies that counties like Bangladesh, Myanmar or Philippines still don't have and thereof they are unable to substitute or match Chinese production. In these time of crisis, after an initial period of alarm and uncertainty, sourcing in China seems to bring quite a few benefits considering that the trend reversed. While India, Indonesia and the Philippines are still battling the second wave of coronavirus, China has, according to Chinese government data, eradicated the disease and has already reopened all the factories and economic activities at full capacity, keeping its economic advantages over the apparent cheaper solutions. Another aspect to consider is that moving supply chain need important capital investments. South Eastern Asian and South American countries don't have the proper facilities to replace China and companies, before reaching the current Chinese standard, have to shell out large sums. These operations are also time-consuming and they need long time before being completely functional. On the contrary as we have seen in previous chapter, Chinese mature industry clusters have responded very efficiently during the pandemic and they do not require further funding from foreign companies. This can influence their decision of relocating especially in the post coronavirus period as many companies have eroded their liquidity reserves to deal with emergencies. Another aspect worth to mention is the ability that many Chinese manufacturers displayed in handling the crisis, succeeding to recover from the initial shock and demonstrating China's superior competence in confronting unpredictable threats and admirable resilience of its supply chains. This is the case of the electronics manufacturing in Chongqing. The municipality hosts an important industrial cluster and despite the outbreak, the output of smartwatches, LCD screens, integrated circuits, smartphones and laptop has increased; in some fields, they even registered an impressive growth of +430%. Thanks to the integration of suppliers, operators and ancillary manufacturers, all the sourcing and supply chain activities related to the productions are carried out in this restricted geographic area, limiting the transfer of components along the Chinese territory, promoting efficiency and convenience. According to ichongqing "for every three laptops and ten mobile phones sold worldwide, one is produced in Chongqing". This is not an isolated case. All the other major cities cluster span across China had similar situations. For certain industries it seems that sourcing from China can reduce the risk of running out of parts and components caused by supply chain disruption as manufacturers rely on the numerous local suppliers.

In the long run, companies need to meticulously review their supply chains operations and come up with contingency plans and risk management policies that can support the smooth functioning in their supply chains. We have seen that, in the short term deciding to decoupling from China in favour of other destinations does not entail any economic benefits, but it may be different if companies intend to conceive this

transaction in the long run. The rising labor costs, environmental and workers protections promoted by the Chinese government, the Sino-American trade war and finally the destruction brought by the COVID-19, are certainly impacting on the choices of manufacturers. A salient point of the discussion is that, in order to dodge new interruptions along the logistic chain, companies must avoid “all in” procurement strategies from a single supplier or geographic area, meaning the necessity of a differentiated and agile supply chain management (SCM). The unknowns that might compromise the normal development along the value chain can be numerous and differ by nature: from natural disaster such as earthquake, tsunami, floods, volcano eruptions, etc., to political related issues such as wars, trade disputes, protectionist measures and finally to the less common, but still, as we have recently witnessed, extremely current such as industrial incidents and epidemics. Diversifying the portfolio and having backup plans with a broader supplier network is all the more necessary in these uncertain times. Many companies that have links in their supply chain with China are evaluating all the alternatives considering the possibility of onshoring or nearshoring, moving to other foreign countries, continuing only in China or implementing the increasingly widespread practice of China Plus One. Certainly, there are several solutions and each one has specific advantages but also drawbacks.

Chapter 3:
Reshoring

In the international sourcing (IS) and international manufacturing (IM) choices are hidden several unknowns and risks, which if ignored can cause costs to soar, compromise the achievement of the pre-established set objectives, eroding return on investment (ROI) and ultimately undermining company competitiveness. In principle, each type of business involves a certain amount of risks but it must be said that, compared to local companies, the risk percentage of multinational or global companies tends to be much higher. After an initial phase of euphoria that has seen a rush to relocation, many companies are now re-evaluating their supply chain choices. This came from the fact that there is an increasing awareness that the real costs of global sourcing are higher than originally expected.

Not only transport costs tend to be more and more expensive every year, but also foreign currency fluctuations, monetary and exchange risk and the ever-increasing need to maintain high inventory levels (the further the production or sourcing country is, the longer are the transport time, the greater the inventory stocks for precautionary purposes) entail higher costs.

Furthermore, in markets characterised by a short product life cycle, the threat of obsolescence is noteworthy, leading to downward price trends or cancellations from buyers. Being able to satisfy demand in the shortest possible time plays a priority role. In addition, manufacturing in foreign countries can lead to product quality problems or the risk of intellectual property theft. Added to this, the risks involving international suppliers / client with the possibility of insolvency, leading long and exhausting legal disputes in often adverse jurisdictions, cannot be neglected. We also must not forget that due to the recent and growing concern of environmental problems, many companies are trying to limit their carbon footprint and thereof forced to reduce the overall pollution volume that their production plants leave behind.

These are only a small part of the difficulties that a company must face in case it wants to internationalise. Differences in judicial and banking systems, customs and tax rate differences, cultural differences including religion, language, economic, political philosophy and social norms, as well as geographical and climatic differences may also play a prominent role. Finally, there are all those unpredictable problems that can disrupt the correct functioning of the supply chain and in the last 4-5 years are playing a primary role in the choice of location.

All of these issues are forcing many companies to reassess their procurement decisions and relocation of their manufacturing facilities. One of the solution that is constantly

cited in the international debate refers to the possibility of reshoring, alias the practice of corporate repatriation.

Reshoring, also known as onshoring, inshoring or back-shoring, oppose the practice of offshoring that has characterised world's manufacturing for decades, by seeking the competitive advantage in the local market putting a brake on global supply chain practices. In general, the term reshoring indicates all those activities of geographic relocation about part or entire supply chain processes in the company's home economy. The definition also includes the practice of back-sourcing, the process of bringing operations back in-house after they have been outsourced. It may also include the transfer of the company based on the location of suppliers and therefore limiting the procurement of materials inside national borders. On the other hand, the practice of nearshoring does not fall within the definition, i.e., establishing one's own production plants or choosing an outsourcing partner located in a country close to that of the company (for example, a neighboring country). Since is relatively recent concept (it was totally unknown before the 1990s), there is no uniformity in the description and formalisation of the phenomenon. However, precisely because it is arousing great interest in the most advanced economies, it is reasonable to think that, in the future, the concept will be canonised in a definitive theory. Generally thanks to the definition assessed by Gray (2013, p. 28) and later discussed by many international scholars, we can subdivide the term of reshoring into four main groups:

- In-House Reshoring: When a company relocates wholly owned offshore facilities back to wholly owned domestic-based facilities
- Reshoring for Outsourcing: a company relocates its own manufacturing from foreign locations to domestic suppliers.
- Reshoring for Insourcing: previous offshoring strategies have been coupled with out-sourcing, but a firm decides to perform manufacturing activities by its own domestic facilities.
- Outsourced Reshoring: a company replaces foreign suppliers with offshore domestic-based suppliers.

In the following pages of the paper, by convention, only the generic term of reshoring will be used, incorporating all its possible facets and distinctions.

During the US-China trade war, due to the heavy tariffs imposed on goods from China, many US or European companies experienced a general appreciation on raw materials and components, affecting the price of the finished product on the end market. The COVID-19 pandemic has instead shown the fragility of modern global supply chains and the extreme dependence they rely on China. In the wake of the Sino-American trade war and the destruction brought by the COVID-19 pandemic, many US and European

companies are seriously considering the repatriation of their supply chains. Nevertheless, the two aforementioned situations represent only the tip of the iceberg regarding the reasons that push a firm to decide to implement this process. The criteria that impel a company to reshoring its production activities are numerous and might vary depending to the sector but are generally attributable to two macro groups: costs factors and risk factors.

On this regard, an argument that goes to corroborate these considerations lies precisely at the base in the choices of offshoring in China: the wage-rate inflation.

As we saw in the previous chapter, the cost of labor in the second world's economies is year by year becoming more expensive, eroding companies' profit margins and ROI. At first glance, it is therefore clear that once the primary motivation that drives many business to relocate to China has ceased, there is no further reason to take on all the complications that this operation may entails.

The choice of reshoring may also incorporates political motivations, such as bringing production back to the home economy and promoting local employment, winning the favour of home consumers by leveraging the country of origin (COO) principle.

Table 3.1, inspired by the work conducted in 2007 by MAKERS "RESHORING TRENDS AND DRIVERS OF SHORTER VALUE CHAINS" shows the major reasons that motivate international companies to consider the reshoring practice both in term of pull and push factors, subjected by exogenous and endogenous variables. So this trend of moving the supply chain back to the home economy isn't just a mere response to the recent issues related with the US-China trade war (in the case of American company) or the outbreak of COVID-19; it is instead fuelled by an increasingly higher number of consideration that if summed up together can influence the final decisions. Despite that, moving the supply chain from one country to another is not an operation that can be achieved in just few days. Before focusing on the bigger picture and the long term project, companies need also take care what are the costs that relocating might entail, as well as figure out what economical benefit this operation can bring to the business. Focusing on the cost factor, reshoring can lead to numerous advantages as well as simplifications concerning to the logistics apparatus.

The first competitive advantage that the practice of reshoring can exploit, holds in the fact that manufacturers first producing and then subsequently supplying a product closer to the final customers, can manage to streamline or even eliminate the long lead time required by offshoring. Thanks to a shorter supply chain, companies are able to better control the movement of freights, reduce transport costs and implement inventory management. Reducing the long and tortuous procedures for the procurement of goods can promote savings on the economic outlay. Making agreements with the freight forwarder, renting containers, packaging, paying customs clearance fees, import taxes, renting warehouses to deposit the goods, are all

operations that have a significant impact on final costs. In principle, in the logistics process there are hidden several costs before that the costumer orders transform into cash. Usually the largest disbursement is represented by the cost of inventory including the cost of capital, storage and handling, damage and deterioration, insurance, obsolescence, management, shrinkage and pilferage. Depending on industry and product, the cost of holding inventory could differentiate greatly, but on average represent the 25% of its book value. It is logic to believe that with a shorter supply chain, these costs could be reduced significantly. The second competitive advantage is the implementation of more agile supply chain strategies thanks to more reliable supply sources.

It must be specified that the problem of relocation of production plants and the supply network does not only concern companies operating in labor-intensive sectors or companies that do not use highly automated production plants. It represents a phenomenon that also involves other types of companies, such as those operating in the capital-intensive[12] sectors, which aim to recover the long-ago lost competitiveness caused by the rising western costs or to access to a new lively and developing markets. In this case, the service levels in terms of quality and punctuality of deliveries must necessarily be very high, since capital-intensive production plants are by their nature more sensitive to variations in these aspects compared to human resources. Errors in component specifications and delays from suppliers can cause plant shutdown so is vital to avoid discontinuities, delays or quality problems arising in the supply of components from a supply network located in a certain country to one located in a low-cost countries. On this optic besides seeking the competitive advantage by reducing production costs, companies must also

> Achieve greater agility such that it can respond in shorter time-frames both in terms of volume change and variety change[13].

In other words, a modern company must be able to quickly adjust production to meet market demand and be able to quickly switch from one variant to another by exploiting the volatility of demand to its advantage. These operations are possible both with push[14] and pull[15] supply chain strategies.

However, concerning push strategies, in order to be able to respond dynamically to changes in demand, it is necessary to implement an excellent demand forecasting

---

[12] Industry that required large investments of money for machinery and infrastructure to make a profit

[13] CHRISTOPHER, Martin, *LOGISTICS & SUPPLY CHAIN MANAGEMENT*, Pearson, London, 1992

[14] A push-based supply chain procurement, production and distribution denote a strategy where products are pushed through the channel from production up to the retailers. Production is thereof based on demand forecast

[15] A pull-based supply chain procurement, production and distribution are mostly demand driven meaning that products are made only in the amount needed

system (Material Requirement Planning, MRP[16]) and warehouse management; if badly managed this can lead to some major problematic such as excessive or insufficient level of inventory, with consequent high warehousing cost or client loss. Conversely, those companies that are planning the reshoring, can gain the competitive advantage minimising storage and inventory costs by implementing pull supply chain practices. With the reduction of procurement time, transportation times, greater dialogue and synergy with local suppliers and final costumers, manufacturers can more easily carry out Just-in-Time solutions, allowing them to simplifying warehouse management and reduce inventory cost as well as all other waste, typical of push strategies. This system is certainly also possible for foreign companies that work in China or other low cost countries, but, it must be remembered that the trust placed in suppliers as well as their skills in being able to satisfy the manufacturing company's requests must be very high. Dialogue, sharing of production processes and exchange of information are put in the first place. So, is thereof hard to believe that this could happen within China, where intellectual property thefts are quite common and where there is a general lack of dialogue with suppliers (often due to language barriers); in this regard, a large amount of literature has shown that, if not in possession of special 关系[17] (guanxi), companies may encounter difficulties in finding reliable business partners who can work in synergy with firms objectives. Without strong connection, Chinese suppliers consider the cooperation with a specific company less important than being able to interact with the entire industry, and so, putting the single foreign manufacturing company in a lesser position. For these reason implement a just in time (JIT) method in China could be troublesome and in the most of cases unrealistic. So for all those SME's that are planning to relocate in the home economy, a more agile supply chain could help them reduce a significant amount of cost. Moreover, rather than putting emphasis on mass markets, firms can focus instead on costumer precise needs with a consequent shifting from B2B to a B2C model type. Another important feature that reshoring could bestow to companies is the quality advantage. Although in many cases this is not necessarily true, offshoring has often affected the quality of the products. Especially in the very first phase of the process, companies have often relied on low-cost solutions to increase revenues by making use of unskilled labor, inadequate tools and machinery, second choice raw materials, thus neglecting the quality of the final product, focusing instead on the market price. Businesses that are planning reshoring can increase quality standards without necessarily tripling the final costs. Through an accurate supply chain planning, reduction of logistics costs and a greater focus on innovation, they can obviate labor costs also thanks to an increased automation of production

[16] Material Requirement Planning, process to produce goods or service ahead of time

[17] Guanxi could be translated with connections or relations and in business indicates relations of trust between parties involving moral obligation and favour exchange.

processes. Although the research and development of first-level machinery often involves a considerable financial expenditure, with the amortisation of these costs, in the long run it can instead represent an advantageous and extremely long-lasting solution. Furthermore, the recent tendency to prefer product quality over quantity should not be overlooked; Consumers are increasingly willing to pay a larger share for products they consider to be superior in quality due to their longevity. This makes reshoring even more tempting. The recent trend of "less but better" is also supported by the movement of environmental protection, possible through the limitation of the overabundance of low-cost products characterised by a short life given that they represent a major source of pollution on the planet.

Reshoring is also a valid countermeasure to protect against intellectual property theft. In many countries around the world there are no laws protecting intellectual property or at least it is extremely difficult to enforce them and limit the practice. For these reasons, many foreign manufacturers that have felt threatened by this type of piracy have decided to close their factories in China. In Europe or the United States, violations of patents, trademarks, copyrights are heavily sanctioned and generally always protect the interests of the injured party. Although these are only a spectrum of the factors that can push a company to consider reshoring in home economy from China or other low-cost jurisdiction (especially after the crisis brought about by the US-China trade war and the COVID-19 pandemic), they still provide the necessary tools to understand the origin of this phenomenon. What remains to be verified is the extent of this event and its actual feasibility.

Table 3.1: Exogenous and Endogenous Push and Pull supply chain strategies that favour reshoring

Pull	Push
Exogenous	
• High Employment rate • Subsided for relocation • Union's pressure • Proximity to customers • Policy's agenda Responsiveness • Technology clusters and Spill overs benefit • Political Stability • Sustainable natural resource • Infrastructure availability • New Customer Rising in Developing Countries • Privilege relationships • New ecosystem thinking • regional concentration and specialisation • Positive stock price reaction	• SC Resilience • Transportation and Logistic cost increased • Security of Supply Chain • Regulatory Environment • Global Crisis Trade and Tariff scheme • Lack of flexibility Cultural and psychic distances • Exchange rate shift Regional financial instability • Declining Wage Gaps • Repeated environmental and/or human rights violations • Security breeches and piracy problems
Endogenous	
• Configuration and restructured cost • Quality and Brand Image • Customer Satisfaction • Product process automation • Manufacturing productivity Innovation • Enhanced Quicker product development • Shorter Supply Chain • Reduction of Carbon foot print • Strategic Coupling • Sunk Cost • Innovativeness • Standardisation of regulations Proximity to R&D and product development • Time-to-market • Flexicurity • QMS Suppliers SC Network more visible and controllable with few suppliers • Joint R&D and supplier collaboration • Company's values • Uniqueness Changes in corporate strategy • Production rationalisation	• Need Rapid Turnover • Lead Time • Cost of managing operations overseas • Container Size and Order Loss of Know How • IP protection • Governance relationship (Subsidiaries larger amount of autonomy and focusing on short term financial performance) • Extra supplier training and assistance organizational cultures, Difficulties of monitoring quality levels De-motivation of the internal staff • Weakening of the market motivated by the international economic and financial crisis

Source: MAKERS the RESHORING TRENDS AND DRIVERS OF SHORTER VALUE CHAINS.

3.1.Measuring the magnitude: the reshoring Indexes.

3.1.1.The USA perspective:

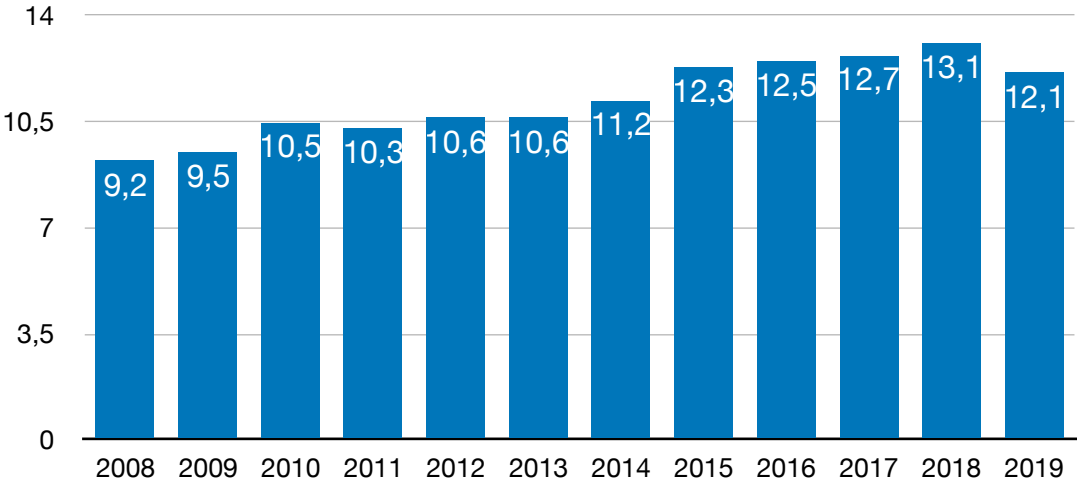
When we think of the phenomenon of reshoring from China, American manufacturing companies immediately come to mind. This is essentially due to the fact that during or following the trade war some US companies have decided to transfer their production and avoid the tariffs and complications that this dispute between the two main world's economies has brought. The former president of the United States Donald Trump, strongly supported this practice since reshoring could helps balance the trade and budget deficit with China, creates jobs, reduces unemployment rate, helps maintain strong industrial capabilities for national defence purpose and limit the dependency that US manufacturing industry and US firms have on China.

However, it is necessary to clarify that the Sino-American trade war represented only one of the many reasons for companies to re-evaluate their operations along the supply chain. Nonetheless, the trade war has helped to pave fertile ground for all those business that already intended to relocate their production facilities or their procurement strategies.

For these reasons, the magnitude of the reshoring phenomenon in America is significantly higher than those reported by European companies or the more developed Asian countries (Japan, Korea).

Before decreeing the extent of the reshoring phenomenon or to better understand the causes that led the US administration to support this practice, it is necessary to provide some numerical data. The datas provided by the coalition for prosperous America (CPA) in conjunction with the US Bureau of Economic Analysis, US Census, represented in table 3.2, deliver a clear picture of what is the real background situation concerning

Figure 3.1: US Manufacturing Import ratio (MIR) with LCCs (2008-2019)



Source: A. T. Kearney

the US manufacturing trade deficit (imports vs exports). In 2019, manufacturing import penetration decreased compared to 2018 which stood at around 31.2% while the manufacturing trade balance rose by about 12 billion dollars respect previous year (-794.4 vs-782,2). This basically means that in 2019 imports of commodities products decreased, but at the same time exports of the same type of products declined to a greater extent. In general, about 30 percent of US demand for manufactured products is met by imports. In almost less than ten years (period 2010-2019), the trade deficit of commodities products has almost doubled, with an increase of 0.96% as a share of GDP. In table 3.3 we find a more complete picture of the trade deficit of the manufacturing sector during the period from 2018 to 2019, expressed in sub-categories.

As mentioned above, the 2019 trade deficit compared to 2018 was around 11.9 billion US dollars. What immediately catches the eyes, concerns the category of non-durable goods, which recorded a deficit of 202,7 billion dollars and an increase of about 23 billion dollars compared to 2018. In 2019 the United States collected 10 $billion less than in 2018 for what concerns exports of oil and its derivatives, increasing, instead, the imports of chemical products.

Table 3.2:Import Penetration and manufacturing trade balance.

Year	Manufacturing Import Penetration	Manufacturing Trade balance ($ Billions)	Manufacturing Trade Balance as %of GDP
2010	26.5%	-$466.0	-2.75%
2011	28.5%	-$440.5	-2.83%
2012	29.0%	-$467.7	-2.89%
2013	28.7%	-$458.8	-2.73%
2014	29.5%	-$526.9	-3.01%
2015	30.7%	-$629.8	-3.46%
2016	30.8%	-$647.3	-3.46%
2017	31.0%	-$696.0	-3.57%
2018	31.2%	-$782.4	-3.80%
2019	30.6%	-$794.4	-3.71%

Source: CPA's Manufacturing Reshoring Index, US Bureau of Economic Analysis, US Census.

Analysing the category of durable goods, the trade deficit in the sub-sector of electronic and computer products registered a sharp reduction; this was mostly due to the shrinkage of electronics product imports from China happened during the trade war escalation. In relation to this event, the trade deficit of durable products thinned,

marking a positive +11.2 billion compared to the previous year. Ultimately, the deficit between US exports and imports of manufactured products remains extremely substantial; however, most likely in relation to the measures implemented during the trade war, in 2019 is started reducing.

Table 3.3: Manufacturing trade balance by sub-sector (billion US$)

Sector	2018	2019	Change 2018-2019
Total Manufacturing	-$782.4B	-$794.2B	-$11.9B
Durable goods	-$602.8B	-$591.6B	$11.2B
Wood product	$13.6B	-$11.4B	$2.2B
Nonmetallic mineral product	$12.9B	-$12.3B	$0.6B
Primary metals	-$36.9B -	$33.8B	$3.1B
Fabricated metal products	-$29.3B	-$27.2B	$2.1B
Machinery	-$45.8B	-$53.0B	-$7.2B
Computer and electronic product	-$200.2B	-$180.8B	$19.4B
Electrical equipment, appliances and components	$63.3B	-$63.9B	-$0.6B
Motor vehicles, Bodies and Trailers, and parts	-$201.9B	-$202.5B	-$0.5B
Other transportation equipment	$85.9B	$75.5B	-$10.4B
Furniture and related products	-$39.7B	-$36.6B	$3.0B
Miscellaneous manufacturing	-$45.0B	-$45.4B	-$0.4B
Non durable goods	-$179.6B	-$202.7B	-$23.1B
Food and beverage, tobacco products	-$17.2B	-$20.5B	-$3.3B
Textile mills and textile products	$19.1B	-$19.3B	-$0.2B
Apparel and leather and allied products	-$117.2B	-$117.8B	-$0.6B
Paper products	$3.4B	$2.5B	-$0.9B
Printing and related activities	-$0.8B	-$0.9B	-$0.1B
Petroleum and coal coal products	$40.6B	$30.7B	-$9.8B
Chemical products	-$45.3B	-$51.8B	-$6.4B
plastics and rubber products	-$23.9B	-$25.7B	-$1.8B

Source: US Census, CPA calculations

From this first analysis, it is possible to begin to establish the extent of the reshoring phenomenon taking place in the United States. According to the data provided by the Unites States international commission, United States Department of Commerce, Bureau of Economic Analysis (BEA) and subsequently elaborated by the Kearney Institute, in its "Kearney seventh annual Reshoring Index," in the last five years (2015-2020) there have been considerable changes compared to the past. Last year, the US manufacturing industry increased its share at the expense of the 14 leading Asian low cost countries (LCC) mainly due to the fact that imports of Chinese manufactured products have plummeted. In 2019, the sum value of all manufactured imports from the US major Asian low-cost trading partner (China, Vietnam, Taiwan, Hong Kong, Cambodia, Malaysia, India, Bangladesh, Pakistan, Singapore, Indonesia, Philippines, Sri Lanka, Thailand) was approximately around $757 billion: a significative decline compared to the $816 billion registered in 2018.

The shrinkage was most exclusively a direct consequent of the US-China trade war since manufacturing importation from China dropped by 17%. In contrast, in 2019 the US manufacturing gross output (MGO), maintained the similar value of 2018 (6259.2 vs 6240.3 billions US$) meaning that American Industry didn't suffer economical repercussion.

The Reshoring index formulated by Kearney Institute is the YoY difference expressed in basis point of the percentage relation between the manufactured imports goods (MIR) from the 14 Asian LCCs with the US domestic gross output of manufactured goods (MGO). Mathematically can be express:

Manufacture Import Ratio (MIR) = (Manufactured Imports LCCs (billion US$) / US Manufacture Gross Output (MGO) (billion US$)) X100

MIR 2019 = (757/ 6259.2) x 100 = 12,09%

MIR 2018 = (816/ 6240.8) x 100 = 13.07 %

Reshoring Index = MIR 2018 - MIR 2019

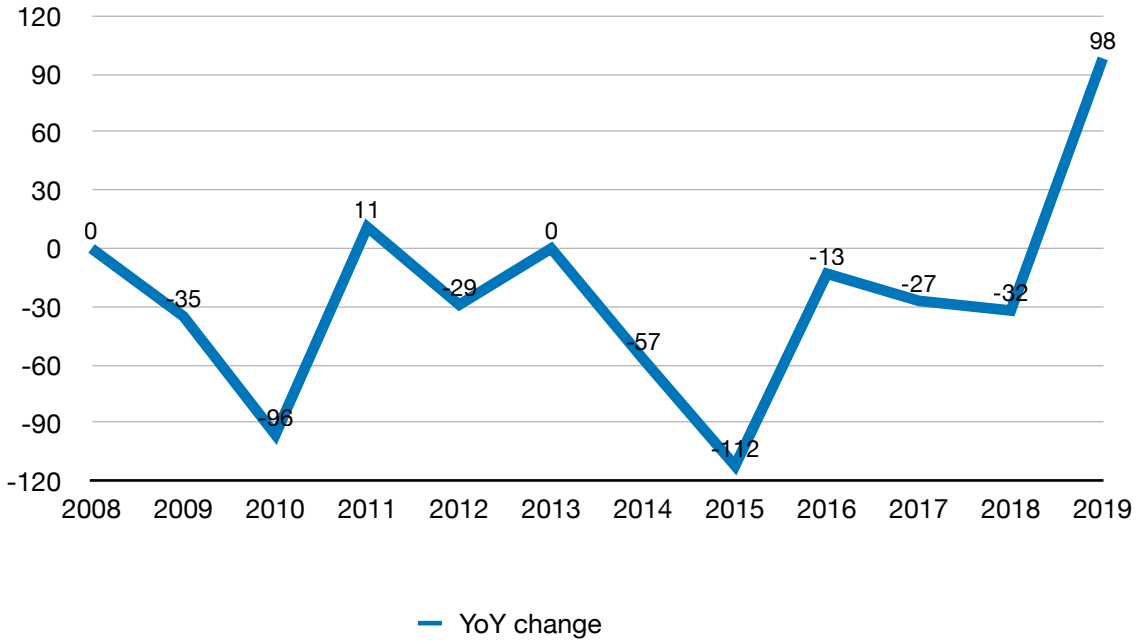
= 13,07 - 12,09 = 0,98= 98 basis point[18]

The 98-basis-point showed in figure 3.2 represents the biggest YoY positive change since 2015 and, in a certain extend, portray encouraging signs that the policies implemented by the US administration were working. This consideration can be easily demonstrated given that US Manufacture Gross Output in 2019 remained almost

[18] The us reshoring index is the YoY change in the MIR expressed in basis point (1 percent change = 100 basis points).

unchanged from 2018; this essentially means that there have been no increases in US production output but instead imports from the 14 Asian low-cost countries have dropped by seven point percent.

Fig 3.2: US manufacturing Reshoring index

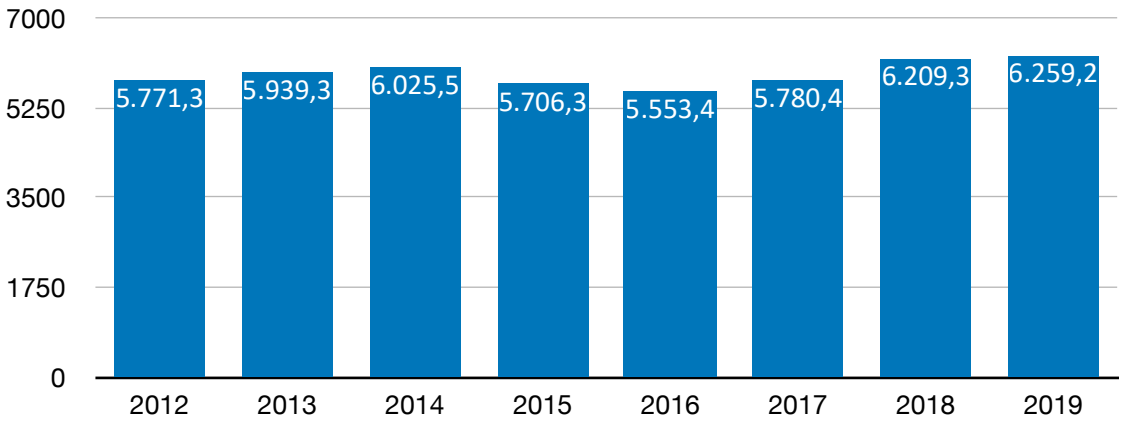


Source: A. T. Kearney

In brief, the importation felt while domestic manufacturing output stayed flat, occupying a biggest share of the market. Therefore the value obtained above and elaborated by Kearney does not represent the quantity of companies that have decided to bring production back to the United States, but rather the trade deficit that subsists between the imports from 14 LCCs and the American manufacturing output. In 2019 the US imported $2,174 trillion worth of manufactured goods (manufacturing imports account for more than 85% of total US imports), while in 2018 amounted for a total of $2,213 trillion registering an overall decline of $40 billion (US Bureau of Economic Analysis, US Census). This sharp decline is mainly due to the fact that in 2019 imports from China felt by 16.2% ($87.6 billion, see figure 2.6). However, during the same period, the manufacturing goods imports from other Asia low-cost countries (excluding China) rose by $31 billion as well as the one from Mexico ($13 billion) and European countries ($23 billion) and in total amounting to $68 billions. It is therefore appropriate to believe that these countries will play the pivotal role of replacing China rather than a massive back-shoring on Unites States soil. A particularly interesting figure is that of the 31 billion dollars imported from the United States from the 14 main Asian trading

partners (excluding China), almost 46% were absorbed by Vietnam. However it remains to be remembered that part of the imports from some of the Asian low-cost countries or from Mexico are traceable to the phenomenon of transshipment, but since it is an illegal practice, there is no concrete data to establish its actual extent.
Nevertheless, is thereof clear that the United States has already begun to limit its interdependence of manufacture goods imports from China by preferring alternative solutions such as sourcing and relocating to other low-cost countries or reshoring on US soil.
As can be seen from the figure 3.3, although not on an overwhelming extent, the American manufacturing capacity seems to be growing. Part of this positive trend can be associated with reshoring, as American companies have decided to return to manufacturing in the United States, contributing to the country's economic growth.

Figure 3.3: U.S. manufacturing industry gross output (in billion U.S. dollars)



Source: statista

In recent years, after a period of stagnation, the American manufacturing industry seemed to have recovered, registering a moderate increase thanks to the tax cut and deregulation activities promoted by the late Trump administration. So far, we have discussed the manufacturing sector trade deficit situation that the United States has vis-à-vis both globally and therefore specific to its main low-cost Asian partners. Empirical analysis has demonstrated that in 2019 the US manufacturing import ratio with the 14 Asian LCCs fell by one point percent, meaning that manufacturing import penetration is diminishing. This was mainly caused by a consistent drop of imports from China rather than a massive increased in domestic manufacturing output that, however, had seen a not negligible growth. Such progression in the manufacturing industry was fuelled by a mix of factors like tax incentives and reshoring. Although a reshoring index has been calculated, this does not properly define the extent of the phenomenon, nor the number of companies and jobs that are moving production back

to the United States. So, to get a complete overview of the situation and go deeper into the study of reshoring, it is necessary to analyse case by case all the companies that have decided to bring production back home. Fortunately "Reshoring Initiative, bringing manufacturing back home" reported most of the cases of all those companies that from 2010 to June 2020 have decided to move their production plants or part of the production process to the US. According to their datas, the number of jobs brought back in the US in the last ten years was around 955,814, involving more than 3790 cases. The list not only incorporate cases of reshoring but also foreign direct investments (FDI), and kept from offshoring (KFO). The most significant examples are undoubtedly those of Apple, General Motors, Boeing but there are also a myriad of other small and medium enterprises (SMEs) that have decided to reshore, contributing the growth of local manufacturing sector.

Although the number of jobs back-shored in the United States in the last ten years is not so terrific, it must be remembered that even a small amount can contribute to change and support the well-being of a country. Unemployment, besides creating economic and financial problems such as lack of funds from job contribution and cost of unemployment benefits, may lead to general discontent and an increase in social tension.

Table 3.2: Manufacturers that brought back the production

Company	Number of job Reshored
Apple	22,200
General Motors	12,988
Boeing	7,725
Ford	4,200
Intel	4,000
Dow Chemical	2,900
General Electrics	2,656
Whirlpool	2,165
Caterpillar	2,100
Polaris Industries	2,000
Solar city	1,900
Merck & Co	1,633
Amgen	1,600
Gentex	1,600
Element Electronics	1,500
Insulet Corp.	1,500
Total	72,667

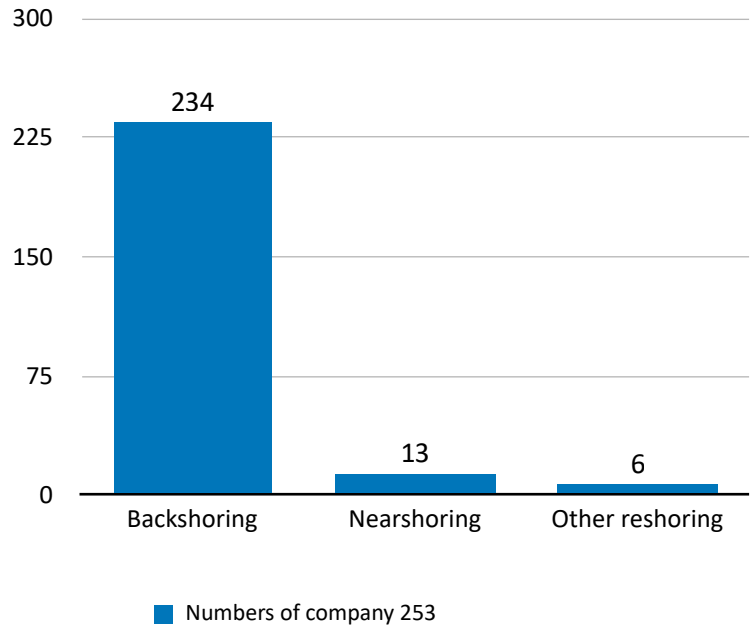
Source: USA TODAY, Money.

3.1.2. The European prospective

Similarly to the United States, also in Europe the practice of reshoring is gaining ground but differs in intensity. This is mainly due to two reasons: the first is that the number of European companies that have undertaken an offshore policy are fewer compared to the US ones, second there wasn't the threat of tariffs; European companies were not directly affected by the Sino-American war trade that partially contributed to enlarge the phenomenon. Despite that, reshoring remains an attractive practice for all those companies that decide to change their supply chain policy by focusing on the local market. The European Restructuring Monitor (ERM) is a branch of Eurofound and one of the principal entities that measure the impact of offshoring and reshoring in Europe. The ERM has been monitoring the offshoring and reshoring impact in Europe since 2002 and collected a impressive amounts of datas from a pantheon of sources such as several media (newspaper, scientific literature, etc), case study, survey and other

specific reshoring cases. In February 2019 the ERM published its most recent report, reviewing the reshoring trends occurred in Europe during the period of time from 2015 to 2018 analysing 253 reshoring cases. According to the data, the strategies implemented by the EU companies can be divided into three different paths such as back-shoring (bringing back the production in the home country), nearshoring (move the production in a neighbouring country) and other-reshoring (moving the production to a not bordering country). As it is displayed in figure 3.4, the back-shoring strategy, with 234 companies out of 253, was the most common one, followed by nearshoring (13 out of 253) and lastly the other-reshoring (6 out of 253).

Figure 3.4: Reshoring strategies

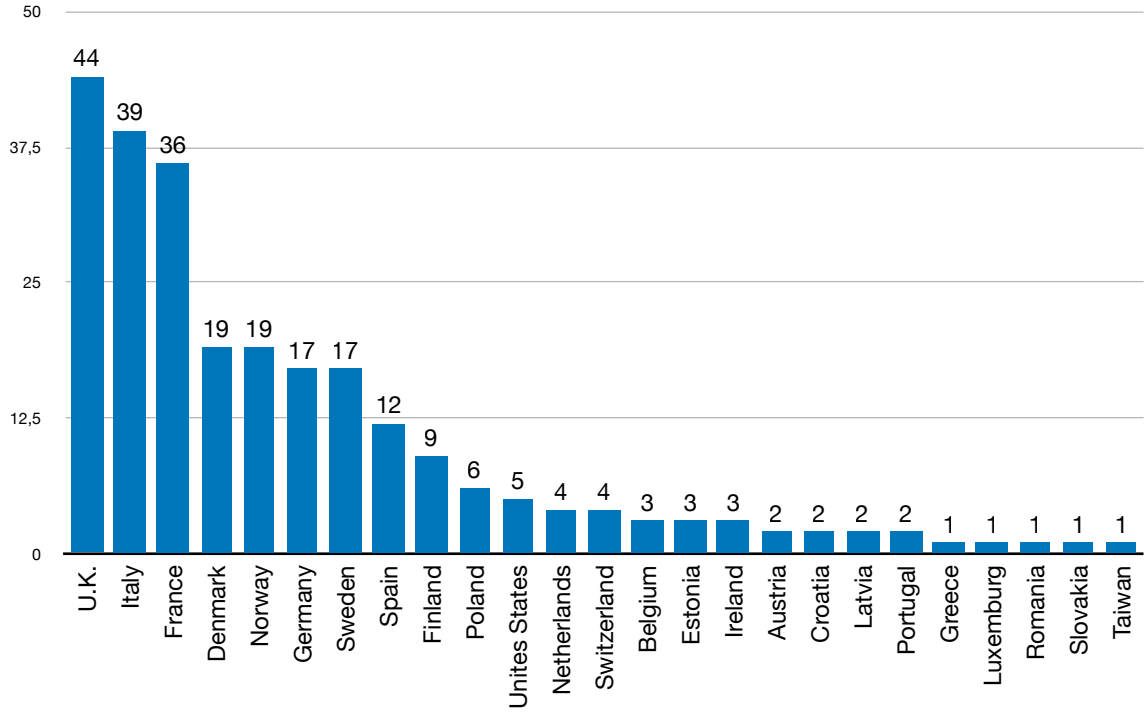


Source: The European Restructuring Monitor, Eurofound

Surprisingly, the number of back-shoring cases is significantly higher than the other strategies. This makes it evident that the reshoring choices are not primarily motivated by the cost factors but by other variables, especially if we analyse the origin of these companies, play a considerable more important role.

As can be seen from figure 3.5, the number of cases of reshoring mainly occurred in countries with high labor costs and high taxation rate. Therefore the main reason that led to this practice is difficult to be traced back to the lower production costs (the vast majority of cases are represented by the manufacturing sector). The United Kingdom, Italy and France are the countries that have primarily benefited from back-shoring, managing to accelerate the process of bringing home their firms.

Figure 3.5: Reshoring case by country



Source: European Reshoring Monitor

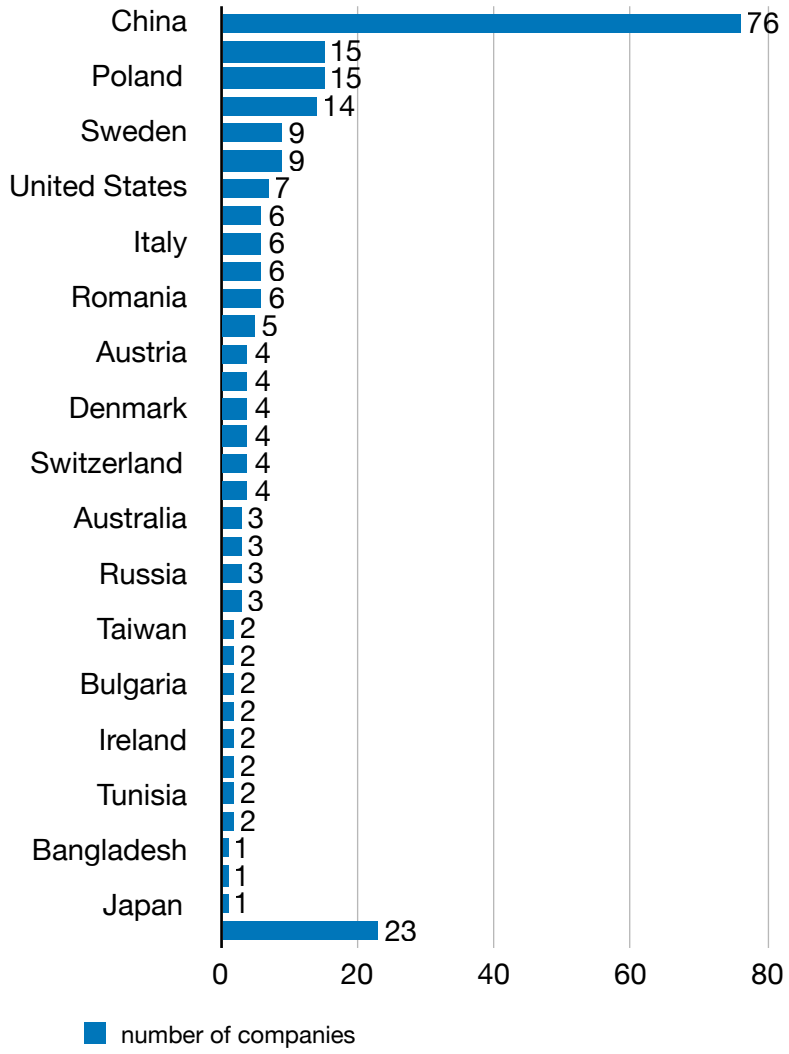
Where there is profit, very often elsewhere there is a loss. Frequently, reshoring involves the total abandonment of one country in favour of another; in fact, the closure of production plants or services (depending of the industry) involves a considerable loss, which, if projected on a large scale, can harm the economic fabric of a jurisdiction or nation. So what are the principal victims of reshoring? Always according to the study conducted by European Restructuring Monitor, the countries whose suffered the most were China (76 out of 253), India (15 out of 253) and Poland (15 out of 253).

This is a significant record because first of all it allows us to understand how Europe is first and foremost dependent on China and later on how the decoupling from the Asian giant affects not only the United States but also the more developed European countries.

However, china is not the only low-cost country that is suffering the repercussions of reshoring, given that India also has a fair number of cases. Focusing on Europe, the main cause that pushes European companies to abandon Chinese soil is due to Firm's global reorganisation. Delivery time or lead time are the second most frequent factor that drive companies to rethink their supply chain operations. In some sectors, such as in manufacture of wearing apparel, delivery times play a fundamental role. As we all know, the fashion sector is subjected to many variables such as seasonal changes, current style, festivity, etc., so responding to the various trends and consumer demand in the shortest possible time is thereof essential. Reducing steps and time within the

supply chain is one of the top priorities, so many businesses are considering bringing production back home to implement leaner supply chain strategies.

Figure 3.6: Principal victim of reshoring by country



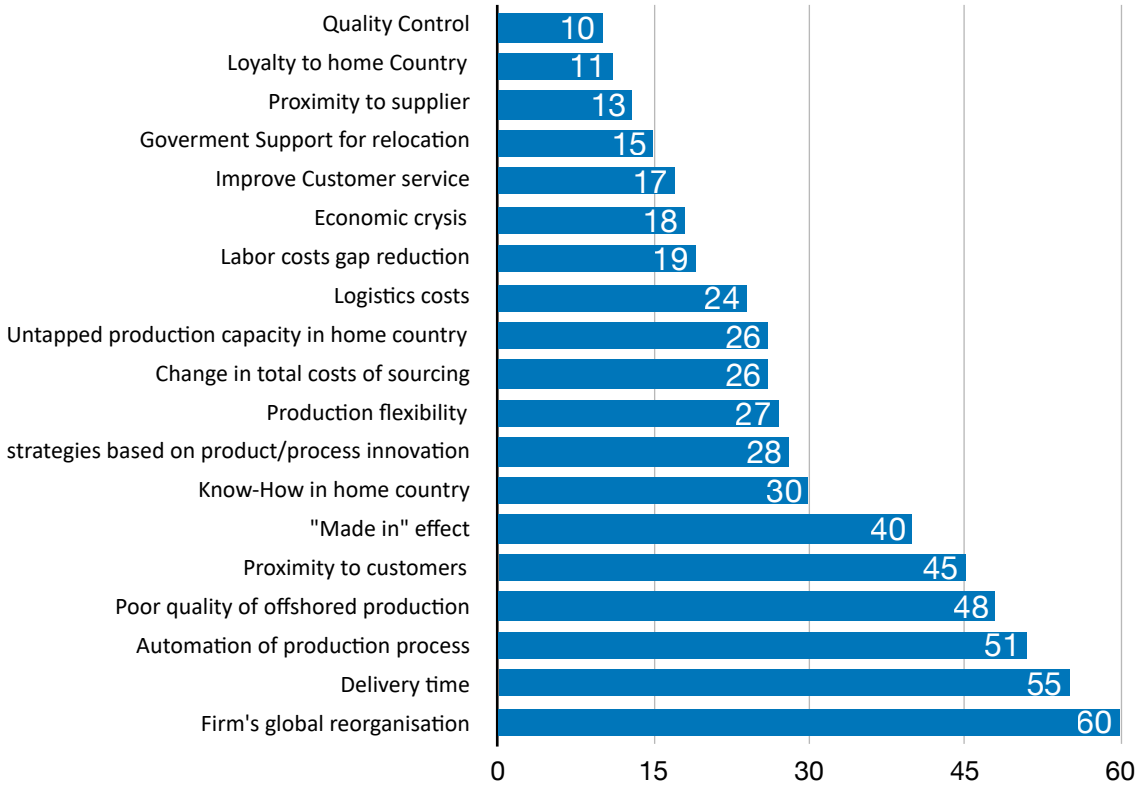
Source European Reshoring Monitor

Local labor is becoming less and less meaningful even in typical labor intensive industry. Nowadays rather the quantity, the quality of workers and production is being prioritised.

For multinational companies and firms that exploit economies of scale, labor costs are still a decision-making factor, but as we discussed in Chapter 2, the wage gap between the most industrialised European country and Asian one is narrowing. Certainly, in the event of an ever higher inflation of wages in China, some firms may consider to move production elsewhere such as Vietnam, Bangladesh or other low-cost countries. However, this can only represent a short-term solution and, to a certain extent, also

economically disadvantageous, especially given the costs of relocation and the "country risk"[19].

Figure 3.7:Major reshoring motivation for European firms.



Distribution of the most-cited motivations by number of cases.
Source: Eurofound: The Future of Manufacturing in Europe – European Reshoring Monitor

For this reasons, where possible, thanks to a progressive degree of robotisation, many corporation have embarked on the path of reshoring. Nevertheless, it remains to be said that, according to the data provided by European Restructuring Monitor (ERM), a sub-group of Eurofound that measures job losses in Europe due to offshoring, offshoring has never contributed to a massive loss of jobs in Europe. During the period from 2003 to 2007 offshoring accounted for the 7% of the total job losses in EU. Since then and most precisely since the 2008 economic crisis it has declined to 4% in 2008-2010 and 3% during 2015-2016. With a particular focus on manufacturing (the sector most offshore-prone), the number of annual offshoring cases reported in 2018 appears to be less than half as compared to 2008 and the number of lost jobs due to offshore practices declined from 12% to the current 8%. Regarding the service sector,

[19] Country risk is the risk of investing or lending in a specific nation.

although the initial concern that many jobs could be transferred abroad, this has never concretised.

In general, the sectors most subject to reshoring are manufacturing (85%), information and communication (12%) and financial and insurance activities (9%). Regarding manufacturing, the most industrial sub-sector were manufacturing of weaving apparel, manufacture of food products, manufacture of machinery&equipment, manufacture of computer, electronics and optical products.

So far we have analysed the phenomenon of reshoring in Europe, decreeing how China represents the main victim of this phenomenon. However, if we examine the data relating to the trade deficit that the European Union has vis-à-vis China, we will notice that this is far from truth. Over the years, the EU has actually increased its dependence on the Asian giant both for exports but above all for imports especially in manufacturing sector including imports of components, finished goods or semi-finished goods for further processing and trade. China represents 9% total export (goods and services) destination from EU, only preceded by Unites States 18% and United Kingdom 15%. In terms of imports, China classifies first in the list meaning that 19% of EU imports came from China, while Unites states absorb just 12% and U.K 10% (mostly in financial activities). These datas provide a clear representation of how the European Union is closely bonded with China in terms of trade and supply chains. Hence, it is quite evident that, the possible reshoring tendency will impact China first among the others.

Table 3.3 represents the EU-27 counties trade in goods with China. In 2005 the EU exports toward China were only 51,7 billion euro while in 2019 increased almost +400% reaching €198 billion (less than the €208 billion in 2018). The year 2009 registered a consistent shrink in imports from China especially due to economic recession while China's import continued to grow, partially reducing the EU trade deficit. However, this situation did not last over long time and the growth of European imports from China returned more vigorous than ever in just one year.

Since then, there have been ups and downs but always in favour of China. 2018 was the year when the EU trade deficit peaked (€ -184.8 billion). In 2019, there was a reversal of the trend; the trade deficit in goods was reduced by about €21.8 billion, a value that bodes well for European manufacturing and likely an indication that some reshoring practices are starting to have a visible effect. Among the EU-27 State member in 2019 only Germany (€+19,511 million), Ireland (€+5,061million) and Finland (€ +1,252million) had a trade surplus with China while all the remains 24 held trade deficit. Netherland (€-74,508 million) ranked first, followed by Italy (€-18,673million) and Spain (€-18,022 million).

Table 3.3: EU-27-China trade of goods (€ billion)

	EU TO CHINA	CHINA TO EU	TRADE BALANCE
2005	51,7	161	-109
2006	63,7	195	-132
2007	71	233	-162
2008	78	249	-170,8
2009	82,4	215	-132,9
2010	113.45	283.6	-170.15
2011	136.42	294.84	-158.42
2012	114.01	291.62	-147.61
2013	148.27	280.06	-131.79
2014	164.73	302.58	-137.85
2015	170.36	350.64	-180.28
2016	169.7	352.3	-182.6
2017	197.6	374.5	-177.7
2018	209.9	394.7	-184.8
2019	198	361.3	-163

Source: Eurofound: The Future of Manufacturing in Europe – European Reshoring Monitor

Table 3.4 provides a complete picture of the goods exports, imports and related trade balance of all the countries of the European Union with China. This makes us immediately understand the degree of interconnection that European nations have with the Asian country; Germany dominates both in exports (export to China accounts about 15.2% of its total exports of goods to countries outside the Eu-27), and in imports, 18.8%, synonymous of how much the two countries are connected to each other.

In general, the top European powers by gross domestic product are those responsible for the largest share of trade with China, but both France, Italy and Spain have a heavy goods trade deficit with China. What is surprising is the data from the Netherlands, which ranks as the first importers of goods from China and first in the relative deficit list.

Table 3.4: Eu-27 import, export with China in 2019(€ million)

	Imports	%of China in extra Eu-27 imports	Export	%of China in extra Eu-27 exports	Trade balance
Germany	76 772	18.8	96 283	15.2	19 511
Ireland	3 146	5.8	8 207	8.6	5 061
Finland	2 296	11.2	3 548	12.0	1 251
Malta	255	8.6	36	2.9	-219
Latvia	511	12.1	159	3.0	-352
Cyprus	410	12.2	34	1.9	-376
Estonia	651	16.7	173	3.8	-478
Croatia	726	13.6	108	2.1	-618
Lithuania	929	8.7	277	2.1	-652
Bulgaria	1 484	13.8	814	7.8	-671
Austria	5 606	14.3	4 611	9.0	-995
Slovakia	2 904	17.2	1 690	10.5	-1214
Luxemburg	1 509	42.7	198	6.7	-1311
Denamrk	6 253	21.4	4 837	10.2	-1416
Slovenia	2 016	13.6	435	3.9	-1580
Sweden	8 424	17.4	6 763	9.9	-1662
Portugal	2 953	14.0	604	3.4	-2349
Greece	4 061	14.9	892	5.5	-3169
Romania	4 537	19.3	612	3.3	-3925
Hungary	7 470	24.9	1 456	6.1	-6014
Belgium	16 704	10.9	7 108	5.1	-9596
France	31 426	15.1	20 959	8.5	-10 467
Czechia	14 806	35.6	2 146	5.9	-12 660
Poland	20 536	25.9	2 651	4.3	-17 885
Spain	24 821	16.4	6 799	5.6	-18 022
Italy	31 665	17.3	12 993	5.5	-18 673
Netherland	88 414	26.1	13 906	6.3	-74 508

Source: Eurostats and author calculation

Concluding, thanks to the data shown both in tables 3.3 and 3.4, we can get a clear idea of what is the extent of the commercial dependence that the European Union has towards China, especially in the sector of imported goods. Except for a few sporadic cases, China always maintains its trade balance positive with European Union countries, consolidating itself as one of the EU's major commercial partner. It remains necessary to underline that the EU is in a better position than the United States, which in 2019 recorded a trade deficit of about 794.4 billion dollars while the EU-27 only

consisted of 163 billion euros. The COVID-19 pandemic has shown the entire world the fragility of the modern supply chain and the extension of the dependency that European Union's countries and US have in the towards China. Measures to reduce this dependence have already been undertaken and new ones will most likely be implemented. The reasons are indeed conspicuous and especially costs-driven; however, the shortening of lead-times, the incentive for automation, a higher quality of production and proximity to consumers also stand out. Moreover, risk factors are starting to be taken into great consideration as well as future possibilities of supply chain disruptions. Bringing production closer to consumers would simplify all the dangerous procurement and transport processes reducing the relative peril. Unfortunately, is easier said than done.

According to data provided by Bruegel (Brussels European and Global Economic Laboratory), in Q2 of 2020, Western European imports from central Europe have plummeted while importations from China increased. Since half of the of global trade consist in intermediate products for manufacturing, amid the recent plague, EU companies weren't able to obtain such materials, hence, many expected that due to COVID-19 epidemic, several firms and countries would limit their supply chain activities towards China, and so, reduce the risk of new disruptions in the production line. The main candidates to receive a possible reshoring from China are in fact the countries located in Central, Eastern, South-Eastern Europe[20] (CESEE) since there, the cost of labor is decidedly lower compared to Western Europe and enjoy a favourable closer position compared to far East Asia. However, trade data reveals a totally different picture: EU-15[21] imports from the CESEE countries dropped visibly during Q1,Q2 and Q3 of 2020 while imports from China, after an initial moment of uncertainty and difficulty reverted back to 2019 level in Q2 of 2020, especially after the reopening of its industrial sites in April. In detail, in April, imports from CESEE dropped by 35%, imports within EU15 fell by 30% on average, imports from US and japan declined by 25% while imports from China even during its worst period (February-March) only reduced by 16% on average compared to the same period of previous year and in April rebounded to late 2019 values.

Among the CESEEE countries, Slovakia, Romania, Hungary and Czech Republic (EU15 major offshoring countries destinations in Europe) were the ones that suffered the most damages, witnessing their export reduced by an average -40%, while the exports of other countries especially the Baltic republics "only" reduced by 15% on average.

---

[20] Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Turkey, and Ukraine.

[21] European Union first fifteen, number of member countries in the European Union prior to the accession of ten candidate countries on 1 May 2004

Similarly to the US market, given the premises due to the pandemic, the composition of EU15 product imports from China differed from previous years. Some sectors have experienced significant growth such as data processing machines (+€884 million, +33%), articles of apparel of textile fabrics (+€129 million, +36%) and electronic tubes, valves and related articles (+€92 million, +12%) and PPE related to COVID-19 medial equipment. Other product categories suffered drastic reductions including footwear (-254 million euros, -52%), telecommunications equipment (-232 million euros, -6%) and toys, games and sports equipment (-225 million euros, -28%). The remaining, led by intermediate goods, were basically untouched. China's ability to respond to the crisis brought about by COVID-19 has been proved successful. Although it was the first nation to suffer damage, thanks to a skilful containment measures and security program, the Asian giant was the first to reopen factories and businesses, graduating as one of the few powers capable of containing the spread of the virus. This has benefited its economy. China has not only not lost its market share but it has also replaced many other countries that are still fighting against the spread of the disease. At this moment reshoring in CESEE countries seems unthinkable and will be for another couple of years. This is due to a multitude of factors: first of all, even if the countries of Eastern Europe are geographically close to the EU15 countries, they are light years away in terms of capacity and production quality compared to China. Furthermore, although the distances are shorter, the Chinese logistics apparatus is superior allowing a smoother and often faster flow of freights. Concluding, even if there have been some tensions with the US, China maintains good political and commercial ties with the countries of the European Union; being a very stable country does not present the typical country risk that can instead affect less secure jurisdictions. It is difficult to think that internal political and social problematic could upset the production capacity and supply chain within the country. The COVID-19 pandemic has instead shown us the resilience and responsiveness of China as well as the reliability of Chinese suppliers. Relocating production elsewhere for fear of possible supply chain disruptions now seems to be beyond all logic.

3.2.China-Plus-One strategy.

The above mention consideration don’t actually implies that companies aren’t re-evaluating their overall supply chain strategies. Numerous multinational and global firms, especially American ones, are planning to limit their dependence on China. This is due to the recent concern of a possible return of the Sino-American trade war and

the progressive wage increase that is currently affecting China. These anxiety are displayed in the recent trend called "China-Plus-One strategy"

> Whereby multinational enterprises investing in China are coupling this with a second investment in a nearby location, the most popular of which include Vietnam, Cambodia, Thailand and Indonesia."[22]

In response to recent supply chain complications caused first by the trade war and later by the COVID-19 pandemic, many international companies are considering alternative plans to limit their dependence on a single country. The risks related to the practice of single-country sourcing are becoming more and more evident and for these reasons an increasing number of enterprises have decided to implement the so called multi-country sourcing system. This is the case of China. In the last decades, global companies from all over the world have opened their production plants and launched business in the service industry, motivated by the strong enthusiasm to access the booming Chinese market while taking advantage of low production and labor costs. However, in recent years, China's cost advantages are shrinking while other nations are emerging in the international theatre, as possible substitutes. In China, the increase in the production costs (including labor costs) is not a homogeneous phenomenon and mainly affects the East coast, while labor costs in the center and west of the country remain significantly lower. For this reason, some companies have decided to transfer or open their production facilities in China's interior. Nonetheless, this tactic is exclusively driven by cost factor and it doesn't take into account some risk factors that may arise in the future neither intends to curtail the over-dependence in the supply chain. This is mainly motivated by the fact that the Asian giant is not only a competitive manufacturing base but, given the huge number of inhabitants and their growing purchasing capacity, it is also an important final market. For these reasons, enterprises have almost exclusively focused on the Chinese market as the revenues and sales potentials are still unexpressed. It must also be considered that relocating the production or procurement of components is not an effortless process and involves a significant economic outlay. Leaving China, especially during COVID-19 pandemic, is not feasible but instead, the option of finding a new business partner to be added alongside China seems very appealing. China-Plus-One (China + 1) can bring countless benefits both in the sphere of cost containment and in business risk.

Although there are several reasons that push for the implementation of this strategy, according to FTI Journal, the main factors are to be traced back to cost control, risk diversification and new market access. For those business that decides to implement this strategy, it makes more sense to broaden their facilities to other asian developing country given the proximity and the overall cost factors that this operation may entails. ASEAN countries share proximity to China; from a purely economic perspective this is a

---

[22] ENDERWICK, Peter, *A 'China-Plus-One' Strategy: The Best of Both Worlds?,* Auckland University of Technology, Auckland, 2010.

major advantage since this can facilitate a smoother relocation of the production facilities. These countries not only have highly interconnected supply chains with China but they are also the best candidates for serving the Chinese market in the proximate future. Another important factor to take into account is the cost of labor. China has lost competitiveness on this ground and quoting China Briefing

> The average cost of labor in China, excluding Malaysia and Thailand, costs much more than any other emerging economy in Asia, especially when considering wages and welfare[23].

Table 3.5 provides us a quick representation of average minimum wages in China and eight major Southeast Asia developing countries.

Table 3.5: China and ASEAS developing countries minimum hourly and monthly wage in 2020.

country	Avg*. minimum hourly wage (US$)	Avg. minimum monthly wage (US$)
Indonesia	$1,19	$190
Malaysia	$1.36	$217,6
Cambodia	$0.73	$116,8
Laos	$0.55	$88
Myanmar	$0,41	$65,6
Philippines	$1,32	$211,2
Thailand	$1,37	$219,2
Vietnam	$0,60	$96
China	$2,59	$414,4

Source: ASEANBriefing.
*The countries in the list don't have a unique and specific minimum wage policy valid for the entire nation. Wages may differ greatly form region, province and city. Generally local governments set minimum wages in accordance with their own local standards. The numbers mentioned above are an average of the highest and lowest values relating to the minimum hourly wages of the various provinces / cities.

Labor costs, particularly in the municipalities of Beijing, Shanghai and the provinces along the East coast, are much higher than countries such as Laos, Cambodia and Vietnam. Since none of the nation in the list has a unique and specific minimum wage policy valid for the entire territory, minimum wages are calculated doing an average between the highest and lowest minimum wages around the country. Average minimum monthly wages are calculated starting from average minimum hourly wage and then multiplied by 40 hours per week. ASEAN countries not only are characterised by low labor costs but also, compared to some latin America and African countries, they have the virtue of being relatively safe nations. In general, China is a rather safe

[23] DEVONSHIRE-ELLIS,Chris, China Now Has Third Highest Labor Costs in Emerging Asia, China Briefing, 2011.

country and apart from the delicate situation in Hong Kong, within the country there are no particular political situations or social tensions that could undermine foreign investments or interrupt the production chain. This is not the case in international relation. In recent years, China has embarked on a series of skirmishes with many of its neighboring countries, magnifying the already strained diplomatic relations. Vietnam and the Philippines have long accused China of illicit fishing in their waters and of how It has illegally occupied some of their islands (or is artificially creating them) for territorial expansion along the South China Sea. Moreover, in 2020 China and India had a series of small clashes over the territorial claim of the border regions between the Indian Ladakh and Chinese Tibet. These tensions, if grouped together with the US-China trade war, show the Chinese political turmoil in the international framework. Another important motive that may favour the implementation of such strategy lies in China's economic transition process. In the last four decades China's economy shifted from being an agricultural to an industrial base and now is focusing on services and technological innovation. The ruling party of People's Republic of China is aiming to construct a modern and prosperous country for all its 1,4 billion citizen by improving their living standards, enhancing environmental protection reforms, increasing innovation and diminishing economic disparities. The Chinese Government is determined to transform the country into a world leading nation by leaving behind the infamous role of being the world's factory. This can be evinced from the strategic program "Made in China 2025" which plans to modernise its industrial apparatus through the integration of new technologies, information security and in increasing local manufactured high tech goods that can reconcile economic development with a general improvement in the living conditions of the Chinese people. This can lead to a change in attitude towards foreign investment. Although China still welcomes FDI, the authorities are becoming more selective towards potential foreign partners, especially in certain sectors, with a tendency to favour local enterprises. In the future, open a business in China may not be as simple as it was in the past, while instead, ASEAN countries are well disposed in receiving FDI. Relating to this matter, another aspect that deserves some mention is the possible economic return of such investments. Given their fast economic growth, these countries have all the credentials to become important end markets as happened in the past for South Korea and China. China+1 strategy could favour the penetration of many companies in these fast growing economies assisting them in the process of grabbing larger market share. Around 662 million people live in the South East Asia area, with a YoY ever-increasing purchasing capacity. Neglect these nations to focus only on European and North America countries could be a fatal error. In principle, the China-Plus-One strategy represents one of the best solution to reduce the dependence that many firm have towards China, aiding them in the avoidance of those risks that may endanger the normal performance of

supply chain activities. This does not imply that companies are necessary abandoning China in favour of the Southeast Asia nations but rather they will reap all the benefits that multi-diversified production can bring. Thanks to its advanced technological apparatus, China remains an important industrial base, especially in the high value added activities as well as more processed product, while ASEAN countries represent a valid and economic alternative for all those sectors that do not require a sophisticated high-tech level. Furthermore, this strategy could encourage regional specialisation. The investments scattered in Southeast Asia may vary depending to the intrinsic peculiarities of the different nations, favouring the emergence of manufacturing clusters characterised by high grade of expertise. Table 3.6 provides a simplification of what may be the major motivation and related benefit in implementing China-Plus-One strategy.

Table 3.6: Major Motivation&Benefits in China+1 strategy.

Motivation	Benefit
Increasing in China's production cost	Opportunities to lower cost
Risk diversification	Access to new market
Reduction of dependancy toward China	Regional specialisation
China economic transformation	Reduction of disruption in the supply chain

Source: VietnamBriefing.

In recent years, even before the COVID-19 pandemic and trade war, an increasing number of multinational companies, particularly from the US, Japan and South Korea, have begun to put this strategy into practice, transferring part of their operations to those countries that they deem most suitable to be paired with China. According to a report conducted by the International Institute for Strategic Studies (IISS), in April 2020 the Japanese government allocate $2 billion in subsidies for Japanese manufacturers to relocate locally and a further $230 million for firm to relocate from China to South East Asia (Lucy Patchett Why 'China Plus One' could be the answer for global supply chains, 2020). Table 3.7 gives us an overview of some of the major international companies that have already implemented or intend to implement the China+1 strategy and therefore limit their activities in the country by favouring of other destinations. As can be seen from the data, the main beneficiaries of this strategy seem to be precisely the countries of South East Asia, particularly Vietnam.

Table 3.7: Major multinational companies that intend or already implemented China+1 strategy

Famous international company pull out of China or consider doing so in face of trade war and COVID-19 pandemic.		
Company	Target country	Affected goods
Pegatron (U.S)	India/ Vietnam	telecom equipment (Apple supplier)
Sketcher (U.S)	India /Vietnam	Shoes
Apple (U.S)	India/ Vietnam	Airpods, Iphone11
Iris Ohyama (Japan)	South Korea	Fans
Komatsu (Japan)	Japan	Constructions equip components
Toshiba Machine (Japan)	Japan	Injections molding machine for plastics part
Keihin (Japan)	Japan	Auto parts
Sumimoyo heavy industries (Japan)	Japan	Robot component
G-teck (Japan)	Japan	Auto parts
Mitsubishi electric (Japan)	Japan	Laser processing machine
Casio Computer (Japan)	Thailand	Wristwatches
Ricoh (Japan)	Thailand	Printers
Citizen Watch (Japan)	Thailand	Wristwatches
Panasonic (Japan)	Thailand	Stereos, other in car equipment
Asustek Computer (Taiwan)	Taiwan	Personal computers
Compal eletronic (Taiwan)	Taiwan	Routers, telecom equipments
HP (U.S)	Taiwan/ Vietnam / Philippines	Personal computers
Dell (U.S)	Taiwan/ Vietnam / Philippines	Personal computers
Mitsuba	U.S/ Vietnam	Auto parts
Asics (Japan)	Vietnam	Running shoes
Kyocera (Japan)	Vietnam	Printers
Sharp (Japan)	Vietnam	Personal computers
Nintendo (Japan)	Vietnam	Video games console
TCL (U.S)	Vietnam	TVs
Brook Sports (China)	Vietnam	Running shoes
GoerTek	Vietnam	Manufacturer of wireless earphones for Apple
NIke (U.S)	Vietnam	Running shoes, sportswear
Samsung (South Korea)	Vietnam	Personal computers
LG-Electronics (South Korea)	South Korea	
Adidas (Germany)	Vietnam	Running shoes, sportswear
Puma (Germany)	Vietnam/ Cambodia/ Bangladesh	Running shoes, sportswear
Zoom	India/ U.S	telecom equipment
Sharp (Japan)	Japan/ Southeast Asia	TVs
Hasbro (U.S)	Vietnam	Toys
Kia motors (South Korea)	India	Auto parts
Hyundai Motor (South Korea)	India	Auto parts

Hyundai Mobis (South Korea)	South Korea	Auto parts
Stanley Black & Decker (U.S)	U.S	Industrial tools
Google/Alphabet (U.S)	Vietnam	Smartphone component
Microsoft (U.S)	Vietnam	Personal computers
GoPro (U.S)	Mexico	Action camera
Intel (U.S)	Vietnam	Wares
Sony (Japan)	Thailand	Smartphone
Nintendo (Japan)	Vietnam	Switch console
Under Armour (U.S)	Vietnam/ Philippines/ Indonesia	Sportswear
Steve Madden (U.S)	Cambodia	Footwear and accessories
Old Navy/Gap (U.S)	Cambodia	Footwear and accessories
Superdry (U.S)	Unknown	Clothing and apparel
Space NK (U.K)	Unknown	Clothing and apparel
Topshop/Arcadia (U.K)	Unknown	Clothing and apparel
The New York Times (Hong Kong office)	South Korea	Information services
Naver (South Korea)	Singapore	Data back up centre
Quanta Computer (Taiwan)	Taiwan	Electronic manufacturing services

Various sources: VietnamBriefing, Eurostat, ChinaBriefing.

Chapter 4:
The Role of Vietnam in the global supply chain

In the previous chapter we discussed the phenomenon of reshoring. The reasons that led many companies to evaluate and consequently to complete the process are innumerable but some emerge to be extremely recurrent. The proximity to final consumers, the reduction of delivery times, the desire to increase the level of automation and finally firm's global reorganisation turn up to be some major motivation. Moreover, the recent COVID-19 pandemic have shown the fragility of the global supply chain and could be the boosting factor that may incentives this already ongoing trend. However, for those companies that seek competitive advantage while minimising operational risks, reshoring represents more a valid long-term plan rather than a short-term solution and requires all the right conditions to be aligned in order to be effective. After careful analysis, empirical datas have shown that China could be addressed as the major victim of this spreading practice. Certainly, the percentage of companies that in the first place had delocalised production in the Asian giant is far greater compared to those in other countries, so from a purely mathematical point of view, it is rather normal to assume that the number of companies that intend to reshore from China could be substantial. Nonetheless, with the exception of sporadic cases, reshoring seems targeting China only. The ever increasing production costs, the heinous dispute with the United States and the extreme dependence of the global supply chain are, without any doubt, the main reasons. In the face of this situation, many multinational companies are thereof considering a decoupling plan from their operations within the country. Quoting the words of Michael Kokalari, chief economist with VinaCapital in Ho Chi Minh City, “Firms thought they had a global supply chain, and what Covid showed them was that they had a China supply chain". China has unrivalled manufacturing facilities, an advanced logistics level, cluster of specialisation, highly skilled workers, and all, on such a large scale enabling to become the world's factory. Replacing the Asia’s top manufacturing entails way too many difficulties while the diversification of the supply chain seems to be a more valid strategy. In this perspective, the possible candidates capable to host part of the operations previously carried out in China are countless, but, among all, the case of Vietnam stands out.

Overview on Vietnamese economy:

When we think of Vietnam, the nefarious war against the United States immediately springs to mind. However, once one has the opportunity to visit the country will instantly realise how that sad chapter, is only an infinitesimal part of its millennial history. Vietnam is indeed a beautiful country with breathtaking landscape, ancient culture, friendly people and a vibrant economy.

In some circumstances, albeit on a smaller scale, the Vietnamese economic development model can be compared to the Chinese one. After the end of the Vietnam War and the country's reunification in 1975, the country's economy was facing huge hardship. In the period immediately following the end of the war, the massive damage caused by the conflict combined with rising inflation, the imbalance between supply and demand, bureaucratic inefficiencies and constantly growing debts led to a serious economic crisis. The Vietnamese economy became one of the poorest in the world, with no or very low growth in all economic sectors, including agriculture and manufacturing. Before the mid-1980s Đổi Mới (renovation) reforms

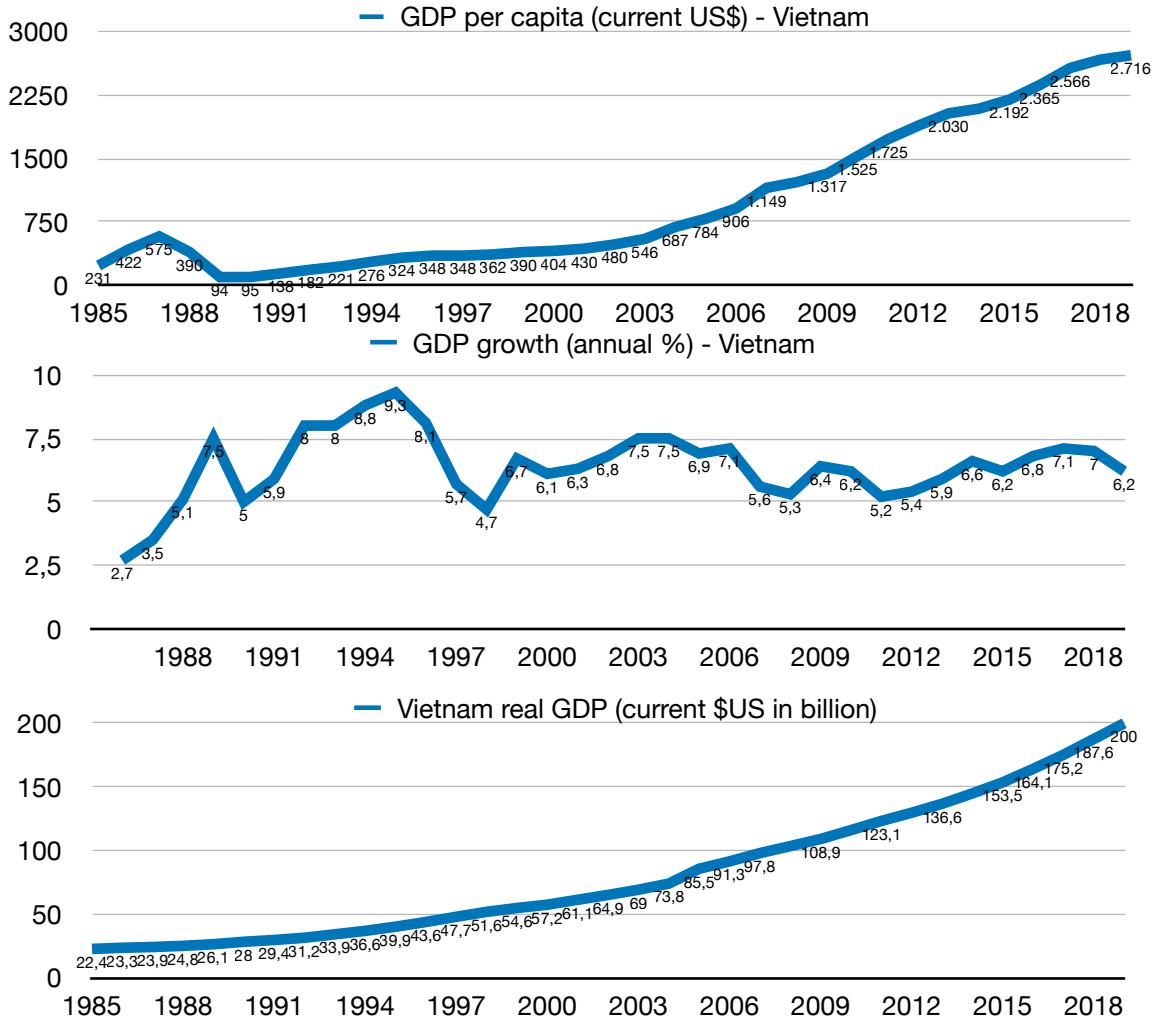
> Vietnam was a backward agricultural country under a socialist economic system based on the centrally directed allocation of resources through administrative means.[24]

At that time, although most of the workforce was involved in agricultural production, it could not meet local demand and thereof forced to import even rice. The industrial sector was almost non-existent. In the early stages of the reforms, the government mainly focused on the removal of self imposed barriers and implementing some market-oriented policies while maintaining the role of state-owned enterprises (SOW's). Later on, the Communist Party of Vietnam (CPV) started to diminishing the subsidies towards SOW's, encouraged foreign direct investments (FDI), the liberalisation of domestic market and the private sector. These gradual policies have allowed Vietnam to be channeled towards its current tremendous economic development path, managing in 1989 to export for the first time 1.4 million tons of rice. Nowadays, Vietnam is the third largest rice world's exporter behind India and Thailand. In the last thirty years, Vietnam recorded an average annual economic growth of 6,5%, one of the highest among the developing countries and since 2008 the country is no longer in the list of the world's least developed and poor nations. In 1989, Vietnam's per capita GDP was $94.5, one of the lowest in the world; it has since grown exponentially to the current 2715.2 recorded in 2019. The years of reform coincided with an improvement in diplomatic relations. In 1991 Vietnam normalised its relations with China and in 1995 established important diplomatic ties with the USA. This has led the country to accelerate its level of integration into the global economy by fostering

[24] HERR Hansjörg, SCHWEISSHELM Erwin, VU Truong-Minh, *The integration of Vietnam in the global economy and its effects for Vietnamese economic development,* Global Labour University, 2016

connection with many other countries and joining various regional and multilateral institutions. In 1995 the country became the seventh member state of the Association of Southeast Asian Nations (ASEAN), in 2007 it became part of the World Trade Organisation (WTO), in 2015 signed the Trans-Pacific Partnership Agreement (TPP) and more recently joined the Chinese economic project of the new silk road (BRI) and the Regional Comprehensive Economic Partnership (RCEP). Economic reforms and openness have shaped the country making it more materialistic, modern, dynamic and less ideological. This has boosted FDI, creating fertile ground for the country's economic development supporting it in the process of becoming one of the future most glowing economy in the world.

Figure 4.1: Vietnam's GDP per capita, GDP growth rate and real GDP



Source: The World Bank

4.1.The integration of Vietnam in China-Plus-One strategy

After the Trump administration imposed tariffs on many Chinese goods and consequently sparking the well know trade war between the world's two leading economies, Vietnam has often been linked as a possible candidate in the replacing of the Asian giant's position. Over the past year, COVID-19 has somehow limited this process, given the inability of international travellers to enter the nation and in some cases has favoured the phenomenon of reshoring. However according to Hoang Anh Tuan and many other analyst, this mainly concerned those companies that had intended to bring their supply chain close to final consumers and that had long been planning to leave China or other developing countries. The remaining business that still have an interest in relocation but at the same time contemplate on limiting their dependence on China, are deeply interested in Vietnam since offers a significant cost advantage, a favourable position sharing proximity with China, has an ideal network trade agreement and could be a potential flourishing final market.

• Cost

Vietnam has long been recognised as an important manufacturing center for the textile and apparel sector. In the last couples of years, the country started to upgrade its manufacturing facilities attracting a larger share of investors allured by the significant wages benefit especially compared to China or other low income jurisdictions such as India and Indonesia. Table 4.1 confronts China with India and Southeast Asia's major manufacturing countries as regards the cost of labor in the manufacturing sector and the average annual labor-productivity growth. What can be deduced from the data provided by ASEANBriefing is how Vietnam, while maintaining very low wages (about 36% of those in China), has a high average annual labor-productivity growth synonymous that the country is becoming extremely productive. Seeking low wage costs while ignoring the level of productivity of workers can be a serious mistake that in many circumstances affects the success of a company. From this point of view, countries such as Thailand, Indonesia and Malaysia appear less attractive than the competition given the higher wage costs and lower growth in labor productivity.

Taxation is another important financial consideration that favour the case of Vietnam since the country offers one of the best competitive tax regime in Southeast Asia. Moreover, there are several tax incentives and tax holidays that corroborate this already favourable situation. The Vietnamese tax system consists of three main types of taxation namely the corporate income tax (CIT) which is levied at a rate of 20 percent on the locally sourced profits of companies operating within the country and is payable annually; the value added tax (VAT) that is applied at one of three percentages (0, 5 and 10 percent) to the good or service in question (most goods within the country

are taxed at 10%) and finally the personal income tax which is applied on a graduated scale based on the income of the individual in question (from 0 to 35 percent). Vietnamese government has drawn up a series of subsidy packages in the form of corporate income tax (CIT) incentive, import duty exemption for fixed assets and exemption of land rental fees. Preferential tax rates and tax holidays are always granted to new projects of national interest or which, in some way, can favour the country's interests; these are based on the location, industrial sector and scale. Vietnam has also signed many double taxation agreement with over eighty different countries.

Table 4.1: Average annual labor-productivity growth and manufacturing compensation in Asia developing countries

Country	Average annual labor-productivity growth	Annual manufacturing compensation 2017	% China
China	8,7%	US$10,131	/
Vietnam	5,0%	US$3,673	36,3%
India	4,9%	US$3,982	39,3%
Cambodia	4,2%	US$2,631	26,0%
Myanmar	3,5%	US$1,889	18,6%
Thailand	3,3%	US$6,997	69,1%
Indonesia	3,0%	US$5,421	53,5%
Malaysia	2,9%	US$5,900	58,2%
Philippines	2,1%	US$4,102	40,5%

Labor productivity measures output per labor hour

Source: VietnamBriefing

• Proximity

The second major advantage that Vietnam can leverage is its position. Located between the South China Sea and the Gulf of Siam, connects Eastern Asia's countries with those of South East Asia, becoming a fundamental gear of one of the most important sea routes in the world. The border between China and Vietnam stretches for over 1297 km and the distance between the port of Shenzhen (important manufacturing cluster) or Hong Kong and Haiphong (one of the country's main ports) is just 864 km. This distance appears less significant when compared with possible alternatives such as Manila (1145 km), Bangkok (2748 km), Kuala Lumpur (3023 km), Jakarta (3299 km) while Myanmar is located off the main sea routes and Laos doesn't has access to the sea. The location of manufacturing facilities near major Chinese clusters can bring numerous logistical advantages to foreign investors. The shorter the

distance, the faster, easier and cheaper the transfer of machinery and material will be. In addition, the 3200 km of coastline along the Pacific Ocean makes it easy to ship products to international destinations such as the Americas, Oceania and Europe. In the era of e-commerce, shortening transport times is a top priority for those companies that intend to better satisfy customers demand and exploit the product life cycles.
Being a major export country, buyers are able to choose from a good variety of shipping companies for both air and ocean freight. Also, thanks to its proximity to China, in case of a shortage of locally sourced raw materials or components, companies can easily purchase from Chinese suppliers. Hanoi, the second most important economic city and capital of the country, is located just 865 kilometres from Shenzhen, one of the main hubs of Chinese manufacturing; so the shipment or procurement of raw materials or components does not present substantial difficulties while operating costs in Vietnam are about 1/3 less.

- Network trade agreement

During the period between 1992 and 2020, Vietnam developed a dense network of diplomatic relations that allowed to increase its level of integration into the world's economy. On July 28, 1995, Vietnam officially joined the Association of Southeast Asian Nations (ASEAN); this represents a life-changing date because as a country member it was able to seize the advantage from the association's prestige and networking relationships. Since then, Vietnam has joined a multitude of international associations and organisations such as the East Asian Community, the Asia-Europe Meeting (ASEM), the Asia-Pacific Economic Cooperation Forum (APEC), the International Monetary Fund (IMF), the Asian Development Bank (ADB), the World Trade Organisation and the United Nations. In general terms, Vietnam has established cordial trade relations with many countries around the world, making it a safe and profitable place for foreign investors. In 2019 the EU-Vietnam agreement entered in force bringing many benefits for both parties such as the removal of tariffs (elimination of 99% of all tariffs on both sides for many product type), the reduction of non-trade barriers, better access to the Vietnamese public procurement markets, the protection of Geographical Indications especially against food and beverage imitation, promotion and protection of EU investments in manufacturing in Vietnam and making rules effective and enforceable (European Commission). In 2020, the country also joined the Regional Comprehensive Economic Partnership (RCEP), the largest plurilateral trade agreement in the world, comprising around 1/3 of the world's population and global GDP (Fung business intelligence). The RCEP intends to draw up a plan of common trade rules for the entire Pacific area, replacing the multiple trade agreements between countries in order to

simplify the set of regulations and problems that arise between the various trade partners. Over the next twenty years the RCEP intends to eliminate at least 92% of the tariff on goods among the members, facilitating the trade and custom procedures, improved sanitary phytosanitary control, dispute settlement and movement of person. Once successfully implemented, it is expected to stimulate intra-regional trade especially in textiles and clothing sector (with considerable benefit for Vietnam) and deepen the integration of the supply chains in the region. Both the RCEP and the EU-Vietnam agreement support Vietnam's integration into the world economy and encourage the formation of preferential supply channels. Thanks to the harmonisation of rules and the protection of intellectual property, companies will feel much secure in participating in the Vietnamese market and, thanks to the elimination of many tariffs, raw materials, components and finished products, they will be able to travel much smoother through Vietnam, Asia-Pacific area and also Europe.

- Potential final market

Vietnam is one of the most vigorous emerging economies in Southeast Asia and the world. A particularly interesting fact concerns its demographics; the large population (over 90 million) is also very young: around 46% of the total population is composed by under 30s. In recent years, due to the country's excellent economic development model, consumer spending has increased significantly. This has fostered a rise in wages and encouraged consumption, often at an ever faster rate than income given the enormous confidence Vietnamese have in the country's economic prospects and low unemployment rates (in 2020 was around 2.02%). According to the 2020 Societe Generale report, nearly two-thirds of the country's population lives in rural areas and their consumption expenditure account for 58% of the country's total. The remaining third of the population residing in the city is responsible for about 42% of consumption. Nowadays Vietnamese consumers, especially those residing in the cities of Hanoi and Ho Chi Minh City, are extremely prone to consumption (both goods and services) crowding malls, bars&restaurants and specialty shops. Eager to improve their living conditions and enjoy the pleasures typical of Western economies, they buy fashionable products from major international brands, although their income is generally not comparable to that of more developed countries. Brands and chains are making their entry into the country and in many cases are adapting their strategies to the local market distributing medium-priced and value-for-money products to profit from this emerging demand. High-tech items, fashion and clothing, personal care and furniture are particularly sought after among young consumers who rely both on on-site purchases but also on online retailers such as Lazada and Tiki. For this reason,

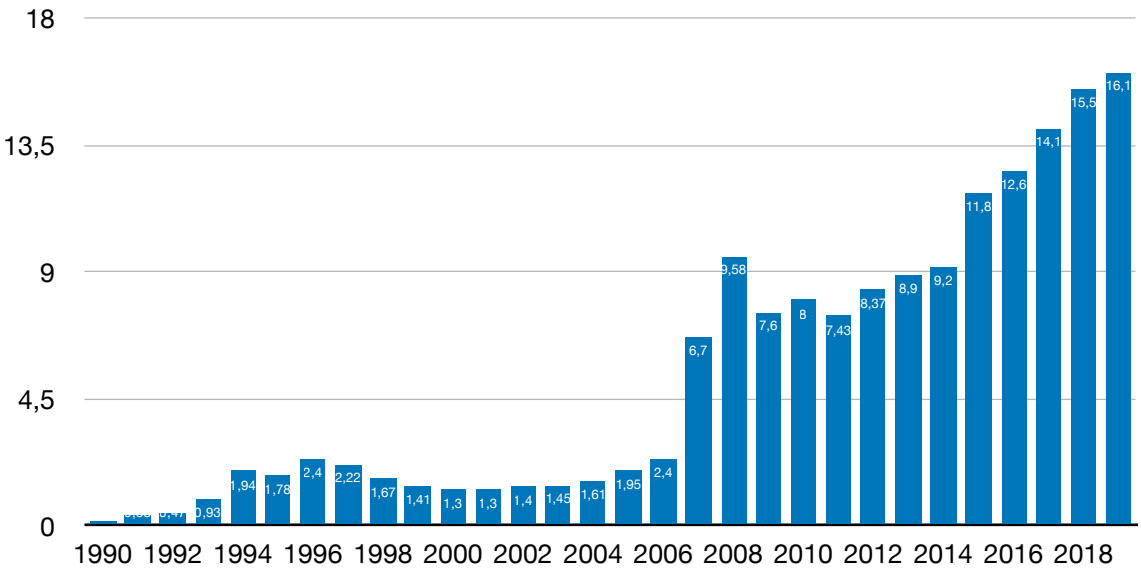
companies that decide to produce in Vietnam can benefit from reselling directly in the country avoiding duties, transportation costs and being closer to consumer demand.

-Foreign investments in Vietnam

Since the 1987 Renovation Policy, attracting foreign direct investment (FDI) has been a crucial ingredient in the development of the Vietnamese economy. The country has long offered many comparative advantages and a great investment climate, but is committing even harder to become even more appealing to foreign investors. In recent years an ever-increasing number of nations, including the United States, have begun to invest heavily in the country also in response to the Sino-American trade war and most likely there will be a further increase in the following years amid the perturbations on the supply chain caused by the pandemic of COVID-19. According to the UNCTAD 2020 World Investment Report, in 2019 the net foreign direct investment to Vietnam were $16.1 million (8% of total GDP), up 3.9% from the previous year ($15.5 billion) which, if added to those of previous stock since 1980, total amount of FDI inflow reached the net value of 161 billion dollars. In 2019 the Greenfield investments were 276 for a total value of 31 billion dollars. Traditionally, the main investing countries come from Asia but new trends suggest that the share of some European nations or US may significantly scale up. In the period between 1990 and 2017, the Republic of Korea was the country's largest investor, occupying approximately 18.1% of the country's total FDI inflow, followed by Japan (15.4%), Singapore (13.3%), Taiwan (9.7%), British Virgin Islands (7.1%), Hong Kong (5.6%), United States (3.1%), Malaysia (3.7%), China (3, 3%), Thailand (2.9%) and others (17.2%). Over the past decade, investments from the Republic of Korea and Japan have alone supported the high level of inflows, however, recently there has been a significant shift of investment by multinationals, mainly to avoid the tariffs caused by the Sino-American trade war; as a direct consequence, they helped push FDI up. Initially, the light industry such as food industry and clothing was the biggest receiver of investments but in recent years electronic, heavy industry, tourism, real estate and construction took the major share. North Vietnam, in fact, thanks to its proximity to China, is defining its position as a crucial industrial cluster for heavy industry and electronics. Companies like Samsung, Canon, Hyundai, Foxconn in association with the local conglomerates such as Vingroup are promoting the development of a prominent supply chain in the region.
In 2019 Vietnamese the government approved many valuable FDI project such us the Beerco Limited’s acquisition of Vietnam Beverage ($3,9 billion), Techtronic Tool invested $650 million dollar in building of a research and development centre in Ho Chi Minh City, Charmvit located $420 million for an amusement park and horse riding field

in Hanoi and LG Display spent approximately $410 million for company expansion. After the EU-Vietnam and the Asia-Pacific RCEP trade agreement, many multinational companies are starting to building up their supply base in the country.

Figure 4.2: Vietnam's net FDI inflow ($billion dollar)



Source: World Bank

According to Vietnam's General Statistics, in November 2020 FDI inflow are down only 2% YoY meaning that despite all the turbulence wrought by the pandemic, foreign investors still firmly believe in the opportunity that the country can entail. In February 2020, the Vietnamese politburo issued Resolution 55, a program that aims to improve the country's energy sustainability. To achieve this, by 2030, the government intends to attract $50 billion by reformulating those regulations that inhibit FDI and enhancing the standards of quality, efficiency, high-tech and environmental protection (Baker McKenzie).

-Trade.

Regarding trade, according to the World Bank, Vietnam is one of the most open economies with a trade-GDP ratio[25] of 210.40% in 2019, an increase of 2,08% from 2018. Since 1987, trade has in fact been the driving force behind the country's incredible economic development.
Over the last thirty years the government has issued a multitude of fiscal and economic measures that in combination with the removal tariff barriers and non-tariff barrier

[25] Trade-GDP ratio is calculated by dividing the aggregate value of imports and exports over a period by gross domestic product.

made outstanding accomplishment in trade liberalisation. Moreover, thanks to the establishment of bilateral agreement with over 80 different nations and as a member of a multitude of political, economic and cultural organisations, Vietnam has managed to increase its integration in the global economy and deepened its participation into global value chains. The major trading partners are Unites States, Japan, South Korea, China and recently even EU. Trading with neighbouring countries (excluding China) is on a certain extend still relatively limited. Vietnam primarily exports are transmission and electronic apparatus, Broadcasting equipment, Telephones, integrated circuits and textile footwear. Imports are mainly in the form of electronic components, integrated circuits, refined oil, cell phones and high-tech technology and knitted fabrics. Table 4.2 shows the total amount of exports and imports of goods and services from Vietnam in the period from 2000 to 2020 and the relative percentage of gross domestic product. As can be easily seen from the data below, up to 2011 the country's trade balance was constantly negative, especially in the period between 2007 and 2011. The 2008 economic crisis also hit Vietnam. The need to procure components and machinery necessary for the development of the manufacturing sector was very high but at the same time the contraction of Western markets reduced the size of exports. Nevertheless, exports have never been slowed down and have always continued to steadily increase year after year. Since 2012, the country has seen a surge in exports, keeping the value of imports almost unchanged, leading, for the first time, to a trade surplus of over 5 billion dollars. Subsequently, albeit with ups and downs, Vietnam managed to maintain the trade balance positive. The most intriguing data and also the one to which part of our considerations refer is that starting from 2017 with a special mention to 2018. In 2017, exports recorded an increase of more than $35 billion over the previous year, synonymous on how far the economy has progressed in such a short period. However, some of the reasons that have allowed this significant increase are not only due to the country's capacity and its integration into the global economy, but are to be found in the geopolitical changes of the main global economic players. As can be seen from the table 4.3 starting from 2017, the turnover with the United States became conspicuous. In just four years (2016-2019) Vietnamese exports to the American country have increased by over 58%. In 2019, the United States effectively established itself as Vietnamese goods top importing country, completely supplanting China or Japan. Exports increased by nearly $18 billion between 2018 and 2019, resulting in a trade balance in Vietnam's favour with over $54 billion. According to many experts and economists, this incredible progression in US-Vietnam trade relations can be traced back to the recent trade war and the general desire for decoupling of many international companies from China. However, sometimes data can lie. As discussed in previous chapters, transshipment is a real phenomenon and it is assumed that some of these 18 billion exports actually come from China. If we look at

Vietnam's imports from the Asian giant, we will notice that there has been a notable intensification in the last two years. However, being an absolutely illegal practice and extremely controlled by various government agencies, it is difficult to believe that the transhipment has eroded so much of it.

Table 4.2: Vietnam Export and import of good and service

Year	Exports	% of GDP	Imports	% of GDP	Trade Balance	% of GDP
2019	$279.72B	106.80%	$271.36B	103.60%	$8.36B	3.19%
2018	$259.51B	105.83%	$251.28B	102.47%	$8.23B	3.36%
2017	$227.35B	101.59%	$221.07B	98.79%	$6.27B	2.80%
2016	$192.19B	93.62%	$186.93B	91.06%	$5.26B	2.56%
2015	$173.49B	89.78%	$171.96B	88.99%	$1.53B	0.79%
2014	$160.89B	86.40%	$154.79B	83.13%	$6.10B	3.28%
2013	$143.19B	83.63%	$139.49B	81.47%	$3.70B	2.16%
2012	$124.70B	80.03%	$119.24B	76.53%	$5.46B	3.50%
2011	$107.61B	79.39%	$113.21B	83.52%	$-5.60B	-4.13%
2010	$83.47B	72.00%	$92.99B	80.22%	$-9.52B	-8.21%
2009	$66.37B	62.61%	$76.43B	72.10%	$-10.06B	-9.49%
2008	$69.72B	70.34%	$83.25B	83.98%	$-13.53B	-13.64%
2007	$54.59B	70.52%	$65.10B	84.09%	$-10.50B	-13.57%
2006	$44.94B	67.72%	$46.86B	70.60%	$-1.91B	-2.88%
2005	$36.71B	63.70%	$38.62B	67.02%	$-1.91B	-3.32%
2004	$27.13B	59.73%	$33.29B	73.29%	$-6.16B	-13.55%
2003	$22.42B	56.67%	$26.76B	67.65%	$-4.34B	-10.98%
2002	$19.19B	54.74%	$21.72B	61.96%	$-2.53B	-7.22%
2001	$18.00B	55.06%	$18.60B	56.89%	$-0.60B	-1.83%
2000	$16.81B	53.92%	$17.92B	57.50%	$-1.11B	-3.57%

Source: The world Bank

In any case, it remains clear that imports from China are more and more consistent every year making us understand how in its process of economic development and modernisation, Vietnam has increased the demand for technological products and machinery given the inability to produce them autonomously. Also, to meet the huge demand, many Vietnamese manufacturers had to rely on Chinese suppliers due to the inability to source raw materials or components locally. This has broadened the interconnectedness between the two economies as while Vietnam has benefited from the recent Sino-US trade war, it has increased its dependence on China on the other.

Table 4.3: Vietnam imports, export and trade balance with USA and China

Year	Vietnam-Unites States (Billion Dollars) all HS digit and service			Vietnam-China (Billion Dollars) all HS digit		
	Exports	Imports	Trade balance	Exports	Imports	Trade Balance
2019	$67,905	$13,351	$54,554	$41,43	$75,58	$-34,15
2018	$50,289	$11,988	$38,301	$41,36	$65,31	$-23,95
2017	$47,574	$10,26	$37,314	$35,34	$58,53	$-24,19
2016	$43,095	$12,174	$30,921	$21,95	$50,03	$-28,08
2015	$38,947	$9,03	$29,916	$16,56	$49,44	$-32,88
2014	$31,448	$7,569	$23,879	$14,92	$44,64	$-29,72
2013	$25,383	$6,686	$18,696	$13,77	$36,88	$-23,11
2012	$20,989	$6,268	$14,721	$12,85	$29,202	$-16,35
2011	$18,194	$5,686	$12,509	$11,61	$24,86	$-13,26
2010	$15,528	$4,899	$10,629	$7,42	$20,88	$-13,46

Source:BEA (bureau of economic analysis),UN Comtrade database.

4.2.Awaiting challenges.

Vietnam represents an excellent solution for many companies that intend to diversify their supply chain and limit their dependence on China, however it is not without its share of challenges. A large number of international analysts and experts have agreed that in the process of moving production to Vietnam, foreign manufacturers can encounter and have to overcome five major obstacles, namely the availability of capable producers, supply chain transfer costs, Vietnam's infrastructure and logistics, foreign-owned Vietnamese manufacturers and the ease of doing business.

- Availability of capable producers and labor force

The first risk factor in moving production from China to Vietnam is the possibility of effectively being capable of manufacture the desired product there.

The Chinese manufacturing sector is so vast that it is not only capable of producing any class of product but also, importers can choose between the numerous manufacturers available. This is not the case in Vietnam. In the course of its economic development, the country has concentrated its efforts in some key sectors such as electronic products, industrial textiles and food. It is difficult to believe that It could become the new "world's factory" given its limited geographical, demographic and infrastructural extension. Certainly the country has all the credentials to replace China in some segments but it will never be able to do so on a giant scale. Moreover investors may encounter difficulties in finding skilled labor force within sophisticated manufacturing. Many of the products that require superior precision and a high level of proficiency in using machinery or crafts remain difficult to transfer to Vietnam. Furthermore all the value-added activities require specific structures that are not yet present in the country. Vietnamese's industry when compared with China still lack behind in terms of maturity and expertise. According to the Human Capital Index of the World Economic Forum, in 2017 Vietnam scored 41.8/100 points in terms of know-how, ranking 120th out of 130. The factor that substantially affects the overall score of the country is precisely the inability to find highly qualified employees. Although the government is striving to improve the level of its school system, the country still fails to meet the standards of the most developed countries. It is not just the lack of skilled labor that frightens foreign investors. With an unemployment rate of just 2%, many companies struggle to acquire even the least skilled workers, especially in the wake of the US-China trade war. Furthermore, many industrial parks are already running at full capacity and thus they are unable to receive new orders from new foreign investors.

Table 4.4: China-Vietnam Comparison in labor force variables in 2020

Country	Total labor force in million	minimum monthly wage $US	Development rank 1 max-130 min	Human capital rank	Know-how rank	Avaibility of high skilled employees rank	economy complexity
China	778,7	$180-400	47	34	44	41	18
Vietnam	57,7	$96-180	67	64	120	84	54

Source:World bank, World Economic Forum

• Supply chain transfer costs

Producing in Vietnam is cheaper when put in terms of wage costs. However, there are a host of other sunk costs that can negatively impact the overall relocation choices. Buying new machinery, renting industrial parks, environmental regulations, paying compensation to Chinese workers are just some of the costs that many manufacturers face. According to the South China Morning Post, in the wake of trade war, the costs of land, labor and building materials in Vietnam have risen. As for industrial park land rentals, in many cases, such as what happened in the Giang Dien Industrial Park in Dong Nai Province (70 kilometres from Ho Chi Minh City), the costs have soared reaching $90 per square meter in 2018 compared to $60 in 2017.
Another consideration to take into account is that Vietnamese's supply chain is till highly dependent from China. Generally imported materials or components increase the final cost per unit of product. Furthermore, by continuing to rely on China in the upstream supply chain fragment, the dangers of a possible disruption or cost increase due to tariff tensions may not vanish even if companies decide to move to Vietnam.

• Vietnam's infrastructure and logistics

As we have seen in previous chapters, China today has state-of-the-art infrastructure and a logistics system that allows it to optimally manage an unparalleled volume of freight. On the contrary, Vietnam is still far behind. These considerations become evident if we take a look to table 4.5, and compare the logistic performances of the respective two countries. The width of the gap between China and Vietnam seems to be insurmountable especially in the section relating to infrastructures.

Tabella 4.5: LPI comparison between China and Vietnam in 2018

Country	LPI Rank	LPI Score	Customs	Infrastructure	International shipment	Logistics competencies	Tracking & tracing	Timeliness
China	26	3,61	3,29	3,75	3,54	3,59	3,65	3,84
Vietnam	39	3,27	2,85	3,01	3,16	3,40	3,45	3,65

Source: the world bank.

According to Logistic Bureau, the main factors that motivate Vietnamese low infrastructural performance are to be found in:

1. Inefficient customs procedures heavily relying on slow manual operations,
2. Inadequate cargo inspection processes in international gateways,
3. Congestion of the roads linking industrial plants with ports/borders,
4. Underdeveloped and unplanned transport infrastructure,
5. Warehousing and distribution centres are generally far from production hubs and ports,
6. Logistics cost are exceptionally high and account for 21% of GDP (world's average is around 13%).

In recent years, the Vietnamese government has been committed to improve its transport infrastructure by building roads and highways (expressway development plan), ports, airports (Long Thanh international airport), however it seems inadequate to keep pace with the country's rapid development. The total length of Vietnamese roads is over 220,000 km, but only 42,000 (19%) are actually paved (Vietnam Road Administration). In addition, many of the roads are old, run down, often dangerous and generally not suitable for transporting large volumes of goods. Public transport (buses and trains) is almost non-existent while two-wheeled transport is omnipresent. What follows and as can be easily seen especially in the cities of Hanoi, Danang and Ho Chi Minh is a complete congestion of both urban and extra-urban traffic.

- Foreign-owned Vietnamese manufacturers

As can be seen from figure 4.2, during its economic development path, Vietnam has relied heavily on FDI. For this reason, many of the major export-oriented companies operating in the area are de facto foreign-owned. Originally the main investors were from South Korea such as Lotte, Samsung, Hyundai, LG and from Japan such as Sanyo, Sony and Hitachi. However, in recent years, many Chinese and Taiwanese companies have started relocating to Vietnam and, needless to say, they rely on Chinese suppliers to source many materials and components. While this facilitates the process of relocation to Vietnam (it is not necessary to build new supply channels from scratch), on the other hand, Vietnam and local companies are more dependent on China.

- Ease of doing business

The considerations that guide the determination of the attractiveness of one jurisdiction over another must not be weighted solely on the basis of the cost factor or the quality of the infrastructures present in the territory. The ease of doing business index provided by the World Bank, through ten variables, defines the level of difficulty

within a given country in dealing with problems often considered minorities but in reality of vital importance for the optimal functioning of the business. Although Vietnam in 2020 achieved a respectable score (70th position), it is not comparable to China's (31st position). Starting a new business and solving insolvency are the two factors that penalise the Southeast Asian country the most. The procedures necessary to open a business in Vietnam are 8, double those required by the Chinese government while the days are 16 against 9 with five times the cost. On the other hand, the ease of getting credit and dealing with construction permit play in favour of Vietnam.

Table 4.6: Ease of Doing Business comparison between China and Vietnam 2020

Country	DB rank Rank	Starting a business Rank	Dealing with construction permit Rank	Getting electricity Rank	Registering property Rank	Getting credit Rank	Protecting minority investors Rank	Paying taxes Rank	Trading across borders Rank	enforcing contract Rank	Resolving insolvency Rank
China	31	27	33	21	28	80	28	105	56	5	51
Vietnamm	70	115	25	27	64	25	97	109	104	68	122

Source: The World Bank

Conclusion.

The role of China in the global supply chain is of primary importance. After years of political and economic isolation, China has returned of being an economic powerhouse especially after the embracement of the market-based system and the opening up reforms. Thanks to the contribution of the government but above all to local initiative, China has been able to transform its manufacturing sector from underdeveloped to avant-garde, capable of satisfying any type of demand at advantageous prices. This has allowed it to carry on the modernisation process and to catch up with the most advanced countries in the world. Thousands of foreign companies have seen in China a great opportunity to reduce their production costs while maintaining the quality of their outputs. The cheap cost of labor, the large availability of raw materials, industrial clusters, tax incentives and affordable rentals of industrial parks have permitted foreign companies to gain a remarkable competitive advantage. China has also developed a top notch logistic apparatus that allows to contain costs within the entire supply chain. The simplification of customs procedures, the quickening of goods transportation, a better inventory and warehouse management are all factors that positively impact on costs containment. For these reasons, China attracted an unparalleled amount of foreign direct investment and since they were largely oriented in the manufacturing sector, became the hub of world production. As for trade, China has been the world's leading exporter for years; in 2018 the Country was the major trading partner for more than 120 nations consolidating as a pillar on which the world economy rests. However nothing lasts forever. China's growth based on resource-intensive manufacturing, low paid labor and export of cheap products has reached its limits. The rapid economic development not only has affected the industrial sector, infrastructure and logistics but had a profound impact on its citizens who are rapidly becoming richer. The rise in wages (in the manufacturing sector they have almost tripled in the last decade) are not the only source of concern for foreign investors who are constantly struggling to find even less skilled workers. The Improvement in living conditions, the increase in wages, a better level of education have led to a change in job expectations. The new generations are unwilling to carry out stressful shifts in the factory, preferring instead perform qualifying jobs that are not only more profitable but also traditionally prestigious. But while wage inflation remains a predictable event, the trade war and the pandemic have instead unexpectedly disrupted the entire supply chain leaving companies exposed and without backup plans.

The United States, mainly driven by hegemonic motivations, argued the need to limit the dependence that the world economy rests on China. Starting in 2018, the late president Trump's administration began to impose a series of tariffs on goods from China in order to balance the trade deficit, encourage the consumption of American

products and also stimulate local employment. Many companies have found themselves in the crossfire of the world's two largest economies, inevitably suffering substantial losses that have jeopardised their ability to operate in international markets. The third valid aspect of reflection, and which to some extent indirectly affects China, is represented by the recent COVID-19 pandemic.

During the lockdown period in China, the implementation and the extensions of business and factories shutdowns, cancellations or long delays in international shipping and finally the closure of borders with the relative denial of movement of goods and people have led to a unheard-of disruption in the supply chain, causing incalculable damages to the world's economy. China plays an essential role in the global supply chain; an interruption in the production chain would not only affect the countries and companies that work directly with it, but would instead trigger a domino effect on larger scale. The country is, in fact, the leading supplier of components and plays a vital role in processing trade activities; consequently, problems arising in the upstream supply chain would inevitably affect even the vast majority of companies that operate in the downstream supply chain and in value-added production.

Due to these sets of reasons, many companies are reevaluating theirs supply chain strategies and weighing alternatives in the possibility of a decoupling scenario from China. This came also from the fact that there is an increasing awareness that the real costs of global sourcing are higher than originally expected. Not only transport costs tend to be more and more expensive every year, but also foreign currency fluctuations, monetary and exchange risk and the ever-increasing need to maintain high inventory levels entail higher costs. Furthermore, in markets characterised by a short product life cycle, the threat of obsolescence is noteworthy, leading to downward price trends or cancellations from buyers. Being able to satisfy demand in the shortest possible time plays nowadays a priority role. In addition, manufacturing in foreign countries can lead to product quality problems or the risk of intellectual property theft. All of these are just few of the many issues that are forcing companies to reassess their procurement decisions and relocation of their manufacturing facilities. One of the solution that is constantly cited in the international debate refers to the possibility of reshoring. In recent years, the number of businesses that have chosen to restore production to the home economy has been substantial, involving not only American but also European companies. According to USA TODAY, the number of jobs brought back in the US in the last ten years was just under one million covering more than 3790 cases. The choice of reshoring incorporates political motivations, such as promoting local employment and winning the favour of home consumers by leveraging the country of origin principle. The proximity to final consumers, the reduction of delivery times, the desire to increase the level of automation and finally firm's global reorganisation turn up to be some other significant motivations especially for those European firms that haven’t

really been affected by the trade dispute. Moreover, the recent COVID-19 pandemic have shown the fragility of the modern global supply chains and could be the boosting factor that may incentives this already ongoing trend.

Decoupling from China appears to be a hot topic in international debate, often used as a workhorse in political speeches to win over voters. But what is actually true behind this phenomenon? Following the Sino-US trade war, it is undeniable that a large number of American companies have decided to bring production back to the United States and that the imports from China have recently plummeted. However, in 2019, the US trade balance with China not only declined, but reached its all-time high. The US manufacturing imports ratio with low cost Asian countries has certainly declined and China has undoubtedly been paying for it. However, other countries such as Vietnam or those of the European Union have increased their exports to the United States which in fact have not seen a visible increase in local production. Concerning European Union, the reshoring phenomenon was rather limited, also because the number of companies that had moved to China in the first place never reached the extent of the American ones. As for commerce, although with a slight decline, the volume of business generated remains considerable with the trade balance always pending in favour of China.

Leaving China, especially during COVID-19 pandemic, is not feasible but instead, the option of finding a new business partner to be added alongside her seems very appealing. The China-Plus-One strategy can bring countless benefits both in the sphere of cost containment and in business risk. In this perspective, the possible candidates capable to host part of the operations previously carried out in China are countless, but, among all, the case of Vietnam stands out. The country not only offers a significant cost advantage, a favourable position sharing proximity with China, an ideal network commercial agreement but also could be a potential flourishing final market. This process seems to have already been started. In recent years, foreign direct investments from the United States and Europe to Vietnam have grown exponentially as has the volume of business in trade. Many multinationals have in fact decided to move all or part of their production from China in favour of the latter, contributing to the spread of the phenomenon. Vietnam represents an excellent solution for those companies that plan to diversify their supply chain networks and limit their dependence on China. However it is not without its share of challenges. Empirical datas and personal consideration tell us that in the process of moving production to Vietnam, foreign manufacturers can encounter and have to overcome five major obstacles, namely the availability of capable producers, supply chain transfer costs, Vietnam's infrastructure and logistics, foreign-owned Vietnamese manufacturers and the ease of doing business.

Concluding after the US-China trade war period and during the early stages of the outbreak, some companies have considered to move away from China and source somewhere else. However, at the present time, this proposition seems illogical since the vast majority of alternative countries are still dealing with COVID-19 while China has successfully defeated the virus. Moreover, shift the supply chain operations to other Asian counties especially during the pandemic period may not as easy as it seems. Many industries such as textiles and clothing, automotive and electronics, particularly in Asia, are highly reliant on the Chinese component and even in the decoupling scenario, the Middle Kingdom would continue to play a central role. In addition, due to the still ongoing travel restriction, flight suspension and prolonged observance quarantines period, management teams coming from China cannot visit their facilities in other Asian countries or make arrangement to move production to new sites. China has also a unique knowledge and technological know-how that other developing countries still don't possess and thereof they are unable to substitute or match Chinese production. After an initial period of alarm and uncertainty, sourcing in China seems to bring quite a few benefits. While the majority of the countries are still battling the second/third wave of coronavirus, China has, according to Chinese government data, eradicated the disease and has already reopened all the factories and economic activities at full capacity, keeping its economic advantages over the apparent cheaper solutions. Another aspect to consider is that moving the supply chain need important capital investments. South Eastern Asian and South American countries don't have the proper facilities to replace China and companies, before reaching the current Chinese standard, have to shell out large sums. These operations are also time-consuming and they need long time before being completely functional. On the contrary, Chinese mature industry clusters have responded very efficiently during the pandemic and they do not require further funding from foreign companies. This can influence their decision of relocating especially in the post coronavirus period as many businesses have eroded their liquidity reserves to deal with emergencies. Finally, the ability displayed by many Chinese manufacturers in handling the crisis, enabling to recover from the initial shock, demonstrated China's superior competence in confronting unpredictable threats and the admirable resilience of its supply chains.

For these reasons, companies are meticulously reviewing theirs sourcing and production line operations, coming up with contingency plans and risk management policies that can support the smooth functioning of their supply chains. We have seen that, in the short run deciding to decoupling from China in favour of other destinations does not entail any economic benefits, but it may be different if firms intend to conceive this transaction in the long term. The rising labor costs, environmental and workers protections promoted by the Chinese government, tariff escalations and possible further disruptions along the supply chain are certainly impacting on the

choices of manufacturers. A salient point of the discussion is that, in order to dodge new interruptions along the logistic chain, is essential to avoid “all in” procurement strategies from a single supplier or geographic area leading to the necessity of a differentiated and agile supply chain management. Reshoring and offshoring to other low-cost destinations will certainly play a role in reducing the extreme dependence of Western economies rely on China, but they will not diminish its importance within the world economy given its value in the supply chain.

What remains to be defined is how China intends to address and position itself within this ongoing trend. For years the Asian giant has enjoyed foreign investments that has allowed it to establish itself as a leading manufacturing nation. Reshoring and relocating production to other developing countries would inevitably and drastically minimise the inflow of foreign capital, thereby reducing its growth and employment rate in the sector. The stance of Beijing on the possibility of decoupling perpetrated by many companies to the detriment of China is not yet clear: this process is the result of market laws and therefore a direct response to the recent crisis primarily caused by the increase in labor costs, the trade war and the COVID-19 pandemic in which China is passively suffering the negative effects? or is it a movement led by the CCP that is trying to redesign its economic role on the world stage with the aim of limiting its low value-added activities by relaunching itself instead as the leading nation of scientific innovation and engine of technological development?

References

- ABDULLAH Haim hilman, *Make or Buy Strategy and Origin of Sourcing Materials and Their Relationship with Firm Performance,*ResearchGate, 2009.
- Alicke Knut, Azcue Xavier, Barriball Edward, *Supply-chain recovery in coronavirus times—plan for now and the future*, https://www.mckinsey.com/business-functions/operations/our-insights/supply-chain-recovery-in-coronavirus-times-plan-for-now-and-the-future#,March 18, 2020.
- ALICKE Knut, LÖSCH Martin, *Lean and mean: How does your supply chain shape up?,* McKinsey&Company, 2010.
- ANH Ngoc, NGUYEN Thang, *Foreign Direct Investment in Vietnam: An Overview and Analysis the Determinants of Spatial Distribution Across Provinces,* SSRN Electronic Journal, 2007
- ATSMON Yuval, MAGNI Max, LI Lihua, LIA Wenkan, *Meet the 2020 Chinese Consumer*, McKinsey Consumer & Shopper Insights, 2012.
- BAKER MCKENZIE, *Indirect Tax, Trade and Commerce China,* Baker McKenzie, 2020.
- BANISTER, Judith, *Manufacturing employment in China*, Monthly Labor Review, 2005.
- BANOMYONG, Ruth, *A STUDY OF LOGISTICS PERFORMANCE OF MANUFACTURING AND IMPORT-EXPORT FIRMS IN VIETNAM*, department of Logistics and Freight Forwarding, Faculty of Economics and International Business, Foreign Trade University Vietnam, 2014.
- BUGHIN Jacques, MANYIKA James, WOETZEL Jonathan, *OUTPERFORMERS: HIGH-GROWTH EMERGING ECONOMIES AND THE COMPANIES THAT PROPEL THEM*, McKinsey & Company, 2018
- BUGHIN, Jacques, MANYIKA, James, WOETZEL, Jonatan, *China and the world: Inside the dynamics of a changing relationship*, McKinsey Global Institute, 2019.
- BUI Thi Minh Tam, *SEZ Development in Cambodia, Thailand and Vietnam and the regional value chains,* Faculty of Economics, Srinakharinwirot University, Bangkok, 2019.
- BUREAU OF LABOR STATISTICS, *U.S. IMPORT AND EXPORT PRICE INDEXES – OCTOBER 2020*, U.S. Department of Labor, 2020.
- BURKHART, Maegan, *MANUFACTURING IN VIETNAM: 5 KEY FACTORS FOR MOVING FROM CHINA*, Intouch, https://www.intouch-quality.com/blog/3-key-factors-for-sourcing-in-vietnam, 16 Oct 2019.
- BYERS L.Stephen, FERRY Jeff, *CPA's New Manufacturing Reshoring Index Shows Strong Gains in 2019,* ProsperousAmerica.org, 2019.

- CHANG, James, GILBRAITH, Mark, NICOLAS, Jan, *Supply Chain Strategies Under the impact of COVID-19of large American Companies Operating in China*, AmCham China, AmCham Shanghai, PWC, 2020.
- CHEN Lihua, LU Yi, RUI Zhao, *Analysis and application of modern supply chain system in China*, Peking University, Beijing,2019.
- CHIN Helen, KONG William, HE Winnie, CHEUN Denise, *COVID-19 impacts on China's economy and global supply chains: Recent developments and updated assessments*, Fung Business Intelligence, Hong Kong, 2020.
- CHIN, Helen, KONG, William, *China-US Trade Disputes Series: What would a Biden presidency mean for China and trade?*, Fung Business Intelligence, Kowloon, Hong Kong, 2020.
- CHIN, Helen, KONG, William, He,Winnie, *RCEP: A game changer for trade in Asia, Fung Business Intelligence,* Kowloon, Hong Kong, 2020.
- CHRISTOPHER, Martin, *LOGISTICS & SUPPLY CHAIN MANAGEMENT*, Pearson, London, 1992.
- DARVAS, Zsolt, *Relocating production from China to Central Europe? Not so fast!*, Brugel, https://www.bruegel.org/2020/08/relocating-production-from-china-to-central-europe-not-so-fast/, 2020.
- DEAN M.Judith, *Explaining China's Position in the Global Supply Chain,* U.S. International Trade Commission K.C. Fung, University of California, Santa Cruz and USITC, 2009.
- DEVONSHIRE-ELLIS,Chris, China Now Has Third Highest Labor Costs in Emerging Asia, China Briefing, 2011.
- DING Juan Ming, KAM H.Booi, ZHANG, Ying Jia, JIE Ferry, *Effects of human resource management practices on logistics and supply chain competencies – evidence from China logistics service market, College of Business*, RMIT University, Melbourne, Australia, 2014.
- DIXON, Robyn, Chinese millennials are rejecting dull factory jobs — and transforming the economy, Los Angles Times, https://www.latimes.com/world/la-fg-china-millennials-jobs-20190512-story.html, May 12 2020.
- DUONG My, HOLMES, J Mark, STRUTT, Anna, LIM, Steven, *Effects of Trade Agreements and Foreign Direct Investment on Trade: Evidence from Vietnam*, International Journal of Economics and Financial Issues, 2019, 9(3), 116-126.
- ECB Economic Bulletin, *Trade links between the euro area and China,* 2017.
- ENDERWICK, Peter, *A 'China-Plus-One' Strategy: The Best of Both Worlds?,* Auckland University of Technology, Auckland, 2010.
- EUROPEAN MARITIME SAFETY AGENCY,*COVID-19 – impact on shipping*, 2020.
- FARELL Henry, NEWMAN Abraham, *Will the Coronavirus End Globalization as We Know It?*, Foreign Affairs, 2020.

- GACC, Statistics, 2020.
- GIFFI, A Craig, RODRIGUEZ, Drew Michelle, GANGULA, Bharath, ROTH, V Aleda, HANLEY, Tim, *2016 Global Competitiveness Index*, Deloitte, 2016.
- GOLUD, S Stephen, *Just How Low are China's Labour Costs?*, World Economy, 2007
- HARRIS, Dan, *Illegal Transshipping/False Country of Origin — Help Us Help You Get Rich*, Harris Bricken, 2019.
- HAYAT, Raphie, *Leaving China: Which countries might benefit from a relocation of production?*, Rabobank
- RaboResearch - Economic Research,August 08, 2019.
- HERR Hansjörg, SCHWEISSHELM Erwin, VU Truong-Minh, *The integration of Vietnam in the global economy and its effects for Vietnamese economic development,* Global Labour University, 2016.
- HONG C.Paul, *Global supply chain strategy: A Chinese market perspective*, Journal of Enterprise Information Management, 2006.
- HOU Jun, GELB Stephen, CALABRESE Linda, *THE SHIFT IN MANUFACTURING EMPLOYMENT IN CHINA,* SUPPORTING ECONOMIC TRANSFORMATION, 2017.
- HUANG Ying, STERNQUIST Brenda, *Guanxi practice and Chinese buyer–supplier relationships: The buyer's perspective*, ResearchGate, 2010.
- KINKEL, Steffen, *Measuring reshoring trends in the EU and the US*, MAKERS, 2017.
- KONG, William, CHIN, Elen, *China Sourcing Update*, Fung Business Intelligence, Kowloon, Hong Kong, 2020.
- KPMG, *China Tax Alert*, KPMG, 2017.
- KPMG, *Managing Trade & Customs in China,* KPMG, 2020.
- LEMOINE, Francoise, UNAL-KESENCI, Deniz, *China in the International Segmentation of Production Process*, Centre d'Etudes Prospectives et d'Informations Internationales, 2002.
- LEONARD, Jenny, *Finding Suppliers Outside China Means Kissing 'a Lot of Frogs*', Bloomberg, https://www.bloomberg.com/news/newsletters/2020-08-18/supply-chains-latest-leaving-china-in-search-of-other-suppliers, August 18, 2020.
- LEUNG, E Suiwah, *Vietnam: an economic survey*, Asian Pacific Economic Literature, 2010.
- LI, Minghao, BALESTRIERI, J Edwards, ZHANG, Wendong, *The U.S.-China trade war: Tariff data and general equilibrium analysis*, Journal of Asian Economics, Elsevier, 2020.
- LIU Ting, WANG Zhenye, *Practical Problems in the Customs Supervision on Cross-Border E-Commerce Goods and Its Solutions*,AtlantisPress, 2019.
- LIU Yuanchun, *Recovering Chinese Economy Cannot Only Rely on New Infrastructure,*China Finance 40 Forum, 2020.

- MARONDE, Ulrike, *The Effect of Reshoring on Purchase Behavior,* Midwestern State University, 2014.
- MAROTTA, Michele, *Euro area international trade in goods surplus €24.8 bn*, Eurostat, 2020.
- Member Survey, *US-China Business Council 2020, 2020*.
- MEYER, Annie, *Moving the Supply Chain Upstream for Competitive Advantage*, Australia-China Business, 2020.
- MITALI Das, PAPA N'Diaye, *Chronicle of a Decline Foretold: Has China Reached the Lewis Turning Point?,* International Monetary Fund, 2013.
- Mo Shu Lin 莫淑霖, *How Will the Sino-US Trade War Change the World's Clothing Supply Chain*, Fiber Industry Sight, 2019.
- MONTENEGRO, Claudio, *L'internazionalizzazione d'impresa e il fenomeno del reshoring*, Università Ca'Foscari, Venezia, 2016.
- MORRISON, M Wayne, *China's Economic Rise: History, Trends, Challenges, and Implication for the Unites States*, Congressional Research Service, 2019.
- MUHA, Robert, *An Overview of the Problematic Issues in Logistics Cost Management*, Multidisciplinary SCIENTIFIC JOURNAL OF MARITIME RESEARCH, 2019.
- NATIONAL BUREAU OF STATISTICS, 2020.
- NGUYEN Thi Lan Anh, SALEH Ali Salman, SAFARI Arslan, *The impact of government policies on FDI decision of multinational corporations: an application to the Vietnamese service industry,* International Journal of Economics and Business Research, 2018.
- NGUYEN, Hoang Tien, *The economic integration process of Vietnam achievements and limitations,* International Journal of Research in Management, 2019.
- Oberhaus, Daniel (2019-08-12). *"How Smaller Cities Are Trying to Plug America's Brain Drain"*, Wired, 2019
- O'CONNOR, David, LABOUR MARKET ASPECTS OF STATE ENTERPRISE REFORM IN VIET NAM, OECD DEVELOPMENT CENTRE, 1996.
- OECD Economic Survey, *China*, OECD Publishing, March 13, 2013.
- OECD, *MANAGING AID FOR TRADE AND DEVELOPMENT RESULTS Vietnam Case Study*, OECD, 2012.
- OJALA Lauri, ÇELEBI Dilay, *The World Bank's Logistics Performance Index (LPI) and drivers of logistics performance,* International Transport Forum, 2015.
- OUERGHI, Dalila, C*hina issues record number of force majeure certs to coronavirus-hit businesses,* Fastmarket, https://www.metalbulletin.com/Article/3921083/China-issues-record-number-of-force-majeure-certs-to-coronavirus-hit-businesses.html, February 26.
- PEGORARO Diletta, PROPRIS Lisa De, BAILEY David, *Reshoring trends and drivers of shorter value chains*, MAKERS, 2017

- PHENG Low Sui, SHANG Gao, *The Application of the Just-in-Time Philosophy in the Chinese Construction Industry,* Journal of Construction in Developing Countries, Vol. 16(1), 91–111, 2011.
- PINES, Lawrence, *China Commodity Imports & Exports: How China Continues To Dominate World Trade*, COMMODITY.COM, https://commodity.com/data/china/, November 6, 2020.
- PRAVAKAR Sahoo, RANJAN Kumar Dash, GEETHANJALI Nataraj, *Infrastructure Development and Economic Growth in China,* INSTITUTE OF DEVELOPING ECONOMIES,2010.
- PREEN, Mark, China's Mega City Clusters: Jing-Jin-Ji, Yangzte River Delta, Pearl River Delta, China Briefing, 2018.
- PRICEWATERHOUSECOOPERS, Vietnam Chamber of Commerce and Industry, *A reference guide for entering the Viet Nam market Doing Business in Viet Nam*, 2017.
- RESILIENCE360, *IMPACT OF THE US-CHINA TRADE WAR ON GLOBAL SUPPLY CHAINS*, DHL, 2019.
- ROMANO, Pietro, Danese Pamela, *Supply Chain Management la gestione dei processi di foritura e distribuzione,* McGraw-Hill, Milano, 2006.
- RUSHTON Alan, WALKER Steve, *INTERNATIONAL LOGISTICS AND SUPPLY CHAIN OUTSOURCING From Local to Global,* Kogan Page Limited, London, 2007.
- RYSER Christina, FRITSCHE-STERR Yvonne, TNS Emnid, Bielefeld, *Logistics in China: An All-inclusive Market?,* PricewaterhouseCoopers, 2012.
- SCHWARTING Detlef , WEISSBARTH Robert, *Make or buy Three pillars of sound decision making*, Booz & Company, 2011.
- SCOBELL Andrew, BURKE J Edmund, CORTEZ Coper, SALE Lilly, CHAD J. R. Ohlandt, WARNER Eric, J.D. WILLIAMS,*China's Grand Strategy Trends, Trajectories, and Long-Term Competition*, RAND Corporation, Santa Monica, Calif, 2020.
- SERIC Adnan, WINKLER Deborah, *COVID-19 could spur automation and reverse globalization – to some extent*, World Economic Forum, 2020.
- SHEIKH, Abdullah Zafar, BUTT, Atif Saleem, SHAH, Syed Hamad Hassan, *Is guanxi important in a buyer-supplier relationship? Case of Chinese logistics industry*, Journal of Asian Business Studies, 2019.
- SHONG-IEE SU, Jian-yu Ke, *National Logistics Performance Benchmarking for Trade Connectivity – An Innovative Approach Using World Bank Logistics Performance Index Database,* Research Gate, 205.
- STATISTA, *Coronavirus (COVID-19) in Vietnam*, Statista, 2020.
- STORRIE, Donald, *The future of manufacturing in Europe*, European Foundation for the Improvement of Living and Working Conditions, 2019.
- THE WOLD BANK,*Country Score Card: China 2018,* https://lpi.worldbank.org/international/scorecard/line/2/C/CHN/2018/C/VNM/2018, 2018.

- THE WORLD BANK GROUP, *June 2020 Global economic prospect*, The world Bank Group, 2020.
- THE WORLD BANK, *Economy Profile Vietnam,* 2020.
- THE WORLD BANK, *Vietnam Connecting Vietnam for Growth and Shared Prosperity Final Report December 2019 Development Report 2019*, International Bank for Reconstruction and Development, 2020.
- TUAN, Hoang Anh, *Doi Moi and the Remaking of Vietnam, global asia Cover Story: Economics,* Security & Foreign Affairs in Southeast Asia, 2020.
- UNCTAD, *WORLD INVESTMENT REPORT2020,* 2020.
- UNITED STATES CENSUS, *Foreign Trade,* 2020.
- VAN DEN BOSSCHE Patrick, LEVERING Brooks, GOTT Johan, CASTAÑO Yuri, *US Trade Policy and Reshoring: The Real Impact of America's New Trade Policies*, ATKearney, 2019.
- VAN DEN BOSSCHE Patrick, LEVERING Brooks,BLAESSER Brandon, CASTAÑO Yuri, *Trade war spurs sharp reversal in 2019 reshoring Index,* ATKearney, 2019
- VETTORETTI, Alberto, *An Introduction Doing Business in Vietnam 2018-19,* Dezan Shira & Associates, 2018.
- VETTORETTI, Alberto, *The China plus One Strategy in Vietnam,* Vietnam Briefing, Dezan Shira & Associates, 2018.
- WALLACE, Corey, *Leaving (north-east) Asia? Japan's southern strategy,* International Affairs, 94: 4, 2018.
- WANG, Chengang, *Aid and Foreign Direct Investment in Vietnam,* Journal of Economic Integration, 2011.
- WEI Li, *Towards Economics Decoupling? Mapping Chinese Discourse on the China-US Trade War,* The Chinese Journal of International Politics, 2019, pp. 519-556.
- WILLIAMS,R Brock, HAMMOND, E Keigh, *U.S.-China Tariff Actions by the Numbers, Congressional Research Service,*2019.
- WIRE, Fitch, US-China Tension, *Coronavirus Will Force Tech Supply Chain to Evolve*, FitchRatings, https://www.fitchratings.com/research/corporate-finance/us-china-tension-coronavirus-will-force-tech-supply-chain-to-evolve-19-05-2020Tue 19 May, 2020 - 15:33 ET
- WITCHELL Stuart, SYMINGTON Philippa, *China Plus One*, FTI Journal, 2013.
- WOLFERS, Lachlan, *China:Country VAT Essential Guide 2016*, KPMG, 2016.
- WONG, Edy, *China's Move up the Value Chain. A Framework for Analysis,* GCG GEORGETOWN UNIVERSITY, 2012.
- WORKMAN, Daniel, *China's Top 10 Exports, World's Top Exports*,http:// www.worldstopexports.com/chinas-top-10-exports/September, 26, 2020.
- WORLD WATCH RESEARCH, *Vietnam: Country Dossier*, 2020.

- WU Ke, DARCET Didier, WANG Qian, SORNETTE Didier, *Generalized logistic growth modeling of the COVID-19 outbreak in 29 provinces in China and in the rest of the world,Institute of Risk Analysis*, PUniversity of Zurich, Zurich, Switzerland, 2020.
- WU, Di, *China Retaliatory Tariff Updates in Response to the Phase One Deal*, BakerMcKenzie, 2020.
- WUA Yuzhe, ZHANG Xiaoling , SKITMOREC Martin, SONG Yan, Hui Eddie C.M, *Industrial land price and its impact on urban growth: A Chinese case study*, Elsevier, 2013.
- ZENG, Jennifer, OTT, John, *China's Private Wealth Machine*, Bain&Company, 2017.
- ZHANG Xiaoling, LIN Yanliu, SKITMORE Martin, *Industrial land price between China's Pearl River Delta and Southeast Asian regions: Competition or Coopetition?*, Land Use Policy, 2017.
- ZHAO, G Bin, *China Economic Quarterly Q1 2020*, PricewaterhouseCoopers, 2020.
- ZHAO, G Bin, *China Economic Quarterly Q2/Q3 2020*, PricewaterhouseCoopers, 2020.
- ZHOU You, ZHANG Hongming, *Promoting the Economic Growth through Technological Innovation*, China Finance 中国金融, 2020.
- ZHOU Zheng Kevin, XU Dean, *How Foreign Firms Curtail Local Supplier Opportunism in China? Detailed Contracts, Centralized Control, and Relational Governance*, Journal of International Business Studies, 2012.