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China's exports: Evolution of
Economic Policies, Key
Sectors, and Export
Destinations

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Abstract

Since China's opening to the world in 1979, the nation's economy and trade have seen impressive growth, with exports at the forefront of that progress.

This thesis will examine the evolution of the government's policies and efforts to expand the country's economy, which have led to China's current position as a world leader, focusing on the promotion of exports and international trade. Furthermore, the purpose of this thesis is to provide an analysis of how these policies impacted specific key sectors and markets.

The first section of this thesis presents an outline of the most important economic measures, how the Chinese government implemented them, and their success. In the second section of this thesis, we will focus on specific key sectors that drive economic development or that have been disproportionately impacted by export-oriented policies. The last section will examine the history of China's primary foreign trade partners, and how their relationship changed with time, particularly the evolution of the main importers of Chinese exports since 1979.

前言

在过去 40 年中，中国经历了世界上最显著的经济转型之一，中国出口增长速度非常快。由于有能力利用其相对优势，中国经济得到了前所未有的发展和扩张。政府政策在这一增长中发挥了重要作用，诸如转向出口导向战略、强调加工出口和开放国际投资等政策产生了重大影响，推动中国走在全球贸易的前列。为了代表中国今天成为全球领导者和制造业强国的征程，我们必须确定导致出口构成和贸易伙伴变化的政策和事件。

本文的主要目的是确定中国出口发展的主要变化。为此，我将首先审查中央政府为发展经济而选择的政策，然后从两个角度审查出口，即生产这些产品的各个主要工业部门和出口到的目标国家。

本文分为三个部分；在第一章中，我将分析 1978 年以来中国历史上的重大里程碑，以及政府和历史事件的变化如何影响中国经济及其与国际市场的联系。理解这些政策和措施对于分析中国出口的发展至关重要，因为它们对中国出口产生了重大影响。中国加入世贸组织和 2008 年金融危机等历史事件产生了巨大的经济后果，在评估中国经济时不能忽视。开放政策开启了一段时期的变革，标志着中国新时代的开始。因此，许多国家和地区政策得以成功实施。例如，经济特区已成为外国直接投资的主要吸引地和工业出口的热点。

在第二章中，我将集中讨论几个选定的行业部门。通过分析关键行业的历史及其特点，我们可以了解出口的复杂性的演变，从而了解中国在全球市场上的竞争力。因此，有可能找到中国出口繁荣的驱动力，一个重大事件当然是

从以低技术为主的产业向中技术产业的重大转变，这种情况导致了中国试图通过更加专注于高技术生产和出口来远离“世界工厂”标签的现状。

此外，适应全球需求变化的能力是中国稳步发展的核心。它能够改变其出口结构；尽管在出口繁荣的早期，劳动密集型产业占主导地位，但资本密集型企业在后来几年的影响力明显增强。

第三章将考察中国出口的目的地。这对于理解中国在国际贸易中不断变化的地位及其世界排名尤为重要。概述对某些国家的出口变化很重要，但我将进一步详细了解加强与某些国家的经济联系的原因或扩大与其他国家的双边贸易的障碍。我将研究与中国主要贸易伙伴（美国、香港、欧盟和日本）的双边关系。在谈论这些国家时，了解存在的具体情况也很重要。例如，我还将重点介绍与美国的贸易战、香港的转口贸易和“一带一路”倡议倡议的独特场景。

Introduction

During the past four decades, China has witnessed one of the most remarkable economic transformations in the world, with exports expanding at a tremendous rate. The Chinese economy saw unprecedented development and expansion as a result of its ability to capitalize on its comparative advantage. Policies such as a shift toward an export-oriented strategy, an emphasis on processing exports, and an openness to international investment had a significant impact, propelling China to the forefront of global trade.

The primary purpose of this thesis is to identify the major changes in the evolution of Chinese exports. To do so, I will first examine the policies that the central government has chosen to apply in order to develop the economy, and then I will examine the various export industries and their target nations. Identifying the policies and events that resulted in changes in export composition and trade partners allows us to construct an image of China's journey to becoming the global leader and manufacturing giant that it is today.

The thesis is organized into three parts; in chapter one, I will analyze the significant milestones in China's history since 1978 and how changes in government and historical events have influenced the Chinese economy and its ties with the international marketplace. It is critical to comprehend these policies and measures in order to analyze the evolution of Chinese exports, since they have had a significant influence on them. Historical events such as China's accession to the WTO and the 2008 financial crisis had massive economic consequences that cannot be overlooked while evaluating the Chinese economy. The Open-Door Policy initiated a period of changes and marked the beginning of a new era in China. As a result, several national and regional policies were successfully implemented. Special economic zones, for example, have become a major draw for foreign direct investment and a hotspot for industrial exports.

In Chapter two, I will concentrate on a few selected industry sectors. By analyzing the history of the key sectors and their characteristics, we may understand the evolution of the complexity and sophistication of exports, and therefore of China's competitiveness in the worldwide market. Thus, it is possible to identify the driving engines of China's export boom, it emphasizes the significant shift from a majority low-technology industry to a medium-technology industry, leading to the current situation in which China is attempting to distance itself from the label of "world's factory" by focusing more on high-

technology production and exports. Furthermore, the ability to adapt in response to changes in global demand is at the heart of China's steady progress. It was able to change its export structure; although labor-intensive industries dominated during the early years of the export boom, capital-intensive businesses have become significantly more influential in later years.

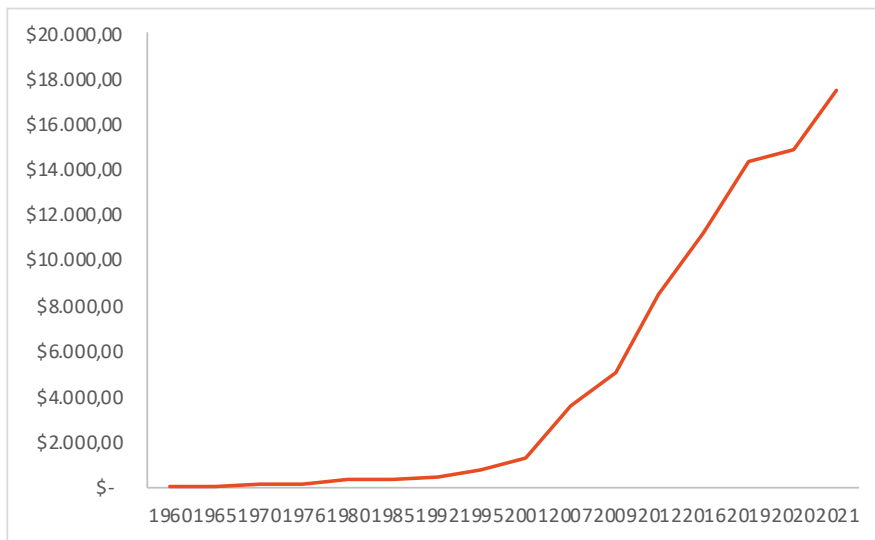
Chapter three will examine the destinations of Chinese exports. This is especially crucial for comprehending China's changing position in international trade and its worldwide ranking. An overview of changes in exports to certain countries is important, but I will go into further details to understand the reasons for the strengthening of economic ties with certain countries or the barriers to the expansion of bilateral commerce with others.

I will examine the bilateral relation with China's primary trade partners (the United States, Hong Kong, the European Union and Japan). While discussing these countries, it is also critical to recognize the unique scenario that exists in the economic and political relations. for example, I will also focus on the unique circumstances of the trade war with the United States, Hong Kong's entrepot commerce, and the Belt and Road Initiative.

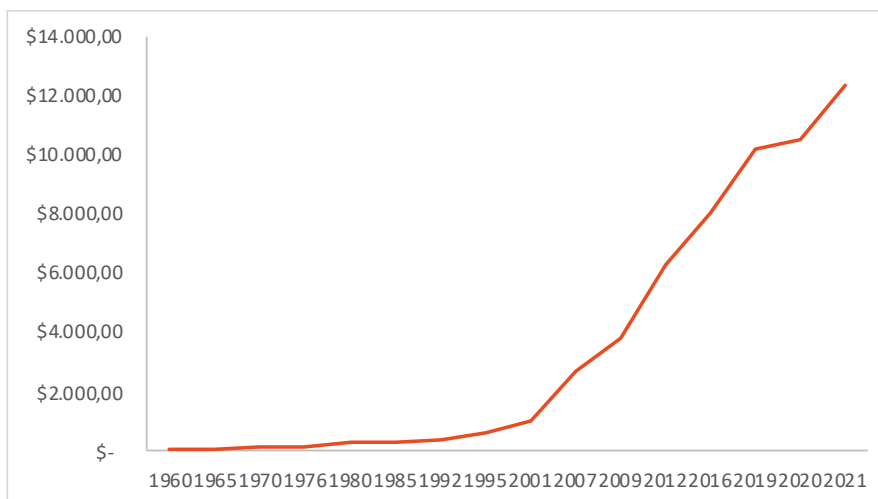
1. Economic development in China

China has experienced one of the most amazing economic developments in the world over the last three decades, with exports increasing at a rapid pace, from \$2.458 billion in 1992 to \$15.336 billion in 2007 and \$20.538 billion in 2019, a total growth of 2842% in just 27 years. Its share of worldwide exports increased from 3.46% in 1992 to 7.96% in 2007 and 12.17% in 2019. China's economy was about four times larger in 1994 than it was in 1987.

Graph 1.1 China's annual GDP (in billion \$)



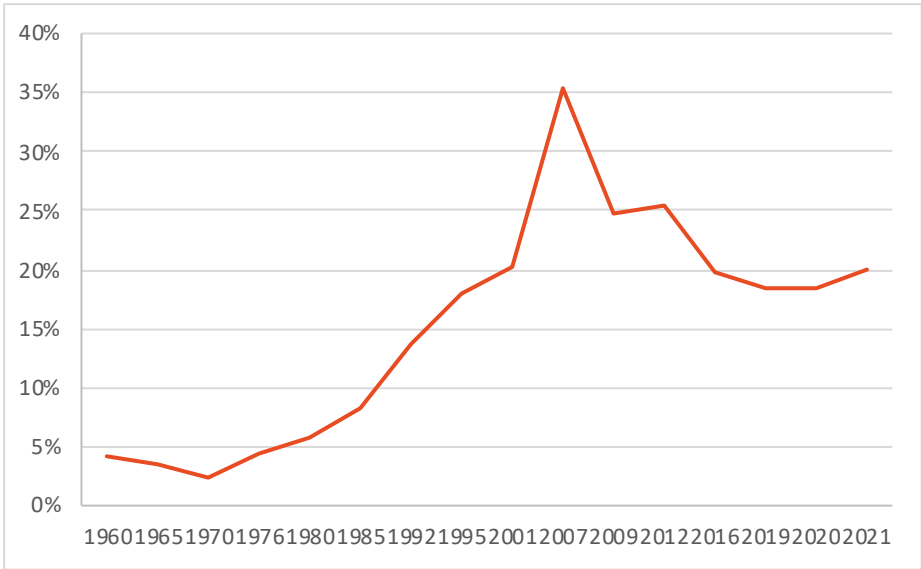
Graph 1.2 China's per capita GDP



Graphs 1.1 and 1.2 show the changes in China's annual GDP and per capita GDP. The annual GDP in 1979 was \$178,281 million; by 2001, it had risen to \$1.33 billion; and by 2021, it surpassed \$17,458 billion. While the per capita GDP was less than \$200 in 1979, it reached \$1000 by 2001, and it surpassed \$10000 by 2020. We may use two indices to

better understand the scale of China's economic transformation: the exports-to-GDP ratio and the export sophistication index (EXPY). According to the exports-to-GDP ratio, China is extremely successful: its exports-to-GDP rose from only 4.5% in 1978 to 20.9% in 2000 and 36% in 2006 (after the 2008 crisis, it declined until 2020 but remained over 18%).

Graph 1.3 Exports as percentage of GDP



This ratio can help us understand a country's economic situation, but it can also be misleading because exports and GDP are calculated using different accounting standards, and it can be especially misleading in China, due to the large importance of processing trade. Because processing trade is so prevalent in our globalized economy, intermediate commodities are imported and exported numerous times before becoming final exports, acquiring added value in each nation they are processed in, even if only partially. The export sophistication index (EXPY) is useful for understanding the level of sophistication of exports, but for it to be an accurate depiction of reality, a few conditions must be met; exports must only use domestic inputs in their production, income must be evenly distributed across all regions, exporting and non-exporting, and the product classification scheme must be detailed enough to exhaust all critical differentiations for any given type of product¹.

Among the causes driving China's rapid growth² include a change toward an export-oriented strategy, a focus on processing exports, and an openness to foreign investment

¹ (Yao, 2009)
² (Kun, et al., 2020)

firms (FIEs). It is a well-established economical concept that an export-oriented strategy is a way for developing countries to enter globalization and the international division of labor in order to boost economic development. Exports and international trade can help the development of a country through technology transfer. China is the perfect example of this; its rapid export growth is not unprecedented, but it is remarkable and unique given the country's size. China was able to achieve such success by converting its trade structure from a labor-intensive and resource-intensive one to a capital-intensive and technology-intensive one, with processing trade driving rapid export development.

A significant portion of China's industrial exports are based on its participation in the global supply chain and production networks; processing trade has grown in importance and is one of the driving forces behind China's export growth. Processing exports refers to the procedure through which a country imports duty-free material and components, which are subsequently assembled in the country and exported. In the case of China, the majority of improved inputs originate from other East Asian countries, and the majority of products are subsequently exported to Western industrial nations. The example of the Apple iPod is widely used to demonstrate this phenomenon; of a \$150 iPod that carries the label "made in China", just \$4 can be attributed to added value in China, with the rest being made mostly in the United States and Japan, and Korea³. Processing exports became significant in the 1980s and have increased steadily since then, accounting now for more than half of overall exports. In 2010, it accounted for almost 55% of total exports. More than 39.8% of all exports are processed utilizing imported resources⁴. The quick development of Chinese exports was led by foreign investment enterprises (FIEs), that in China could be one of three types: Sino-foreign joint ventures, Sino-foreign cooperative ventures, and sole-foreign enterprises. at the beginning they mainly focused on the domestic market, but after shifting towards the international market, their share of total exports rose quickly, from less than 2% in 1986 to 31.5% by 1995. The majority of FIE exports are to a few industrialized nations, namely the United States, Hong Kong, Japan, and the European Union.

³ (Dedrick, et al., 2009)

⁴ (Yu & Tian , 2012)

1.1 Historical development of the economy

To better understand the current state of Chinese exports and international trade, we should go back in time and look at the history of China's economy and the changes over the last 50 years. This period can be divided into six phases defined by specific years: before the start of the reforms in 1978, the period of the reforms from 1979, the rise of FDIs and SOEs from 1986 to 1994, the shift towards machineries and electronic products in 1995, the entry into the WTO in 2001, and the period following the 2008 crisis.

Prior to the reforms, under Mao's leadership

China's economy was closed and based on Import Substitution Industrialization (ISI) and a nationalist and self-sufficient strategy. International trade was not non-existent, but it was confined to a few allied nations and a few commodities (particularly oil). It was also strictly controlled by the central government, which exploited the overvalued currency to fund the central plan's import substitution programs. Foreign direct investment was less than \$300 million each year⁵.

The government's policies during these years were unsuccessful, and events such as the Great Leap Forward and the Cultural Revolution, along with a severely restricted economy, resulted in the Chinese economy collapsing upon Mao's death.

The begging of the reforms in 1979

After Mao's death in 1976 and the inauguration of Deng Xiaoping's presidency in 1978 began a period of liberalization and reforms. One of the main goals of the reforms was to remove the State's trade monopoly and promote exports. To accomplish this, the government focuses on some strategies that have proven particularly effective: attracting overseas capital and FDIs, export-promotion policies, and the establishment of Special Economic Zones (SEZs). I will discuss these strategies and their significance in the following section of this chapter. Exports increased during this time, although they remained concentrated on resource-intensive raw materials and primary goods such as coal, crude oil, and vegetables. Because of its cheap labor and plants, the country enjoyed a competitive advantage in manufacturing exports, but it lacked the know-how and management abilities. This was aided by international investors who supplied not just

⁵ ZTN, 中国统计年鉴, China Statistical Yearbook, China Statistics Press, 1992

finance but also new technologies, including management, production, and marketing skills. The export boom benefited the domestic economy as well; rising export demand helps domestic manufacturing to reach larger economies of scale through exports to overseas markets, resulting in increased productivity.

Exports grew significantly during this period, but there still were obstacles to Chinese development. The country was rich in inexpensive labor but lacked the foreign exchange required to pay for the import of plants and machinery, due mostly to undeveloped exports. To address this issue, the government shifted its attention away from heavy industries and toward the export of commodities in order to gain foreign currency.

From 1986 to 1994: FDI and SOEs

From 1986 to 1994, market expansion was aided by changes such as decreased import tariffs and the implementation of the dual exchange rate system. Since the late 1970s and into the early 1990s, FDI has grown in importance, with most of the foreign capital coming from Hong Kong, Macau, and Taiwan, as well as other Asian nations.

Foreign investors supply the market connections and knowledge required to boost the economy, which is critical to development. Labor-intensive sectors were able to develop fast in this climate. In 1986, an industrial upgrade occurred, resulting in a change from solely resource-intensive export to labor-intensive textile and apparel product export.

As the economy became more export-oriented, household consumption fell, and investments increased. This expansion was led mostly by machinery exports (HS categories 84 and 85), which accounted for almost 45% of total export increase.

Another key change at the period was the reform of the SOEs (State-Owned Enterprises); these firms, which had previously been losing money, began earning profits, resulting in massive production increases that could not be absorbed by domestic demand; this circumstance helped give an additional boost to exports.

SOEs played an important role in the national economy, accounting for more than 70% of GDP at the time, although they had many issues and were not profitable. The fundamental issue was low efficiency, which was caused by the fact that, under the planned economy, the management of an SOE had very little control over company decisions on matters such as employment, investments, and inputs and outputs. As a result, there were minimal incentives in the SOE workforce because all earnings had to be distributed to the central

government. Furthermore, because workers had job security, there was little motivation for them to work harder in order to enhance efficiency.

Because SOEs were critical to the country's exports, the government was keen to improve the situation and increase productivity. The reform of SOEs began with Profit Retention, a policy intended at providing managers some influence over production and allowing them to retain a share of the SOE's enhanced earnings or decreased losses.

The emphasis of this reform was on ownership transformation and enterprization, which is the process of transitioning SOEs from government-affiliated organizations under the centrally planned economy into independent, productive firms. In the 90s SOEs went through a further transformation into modern corporations. The reform significantly improved SOE productivity, hence increasing exports.

Shift towards machineries and electronic products in 1995

In 1995, we can see a second industrial upgrade, with China shifting away from conventional labor-intensive industries and toward machineries and electronics, which surpassed textiles and apparel exports. In the years afterward, China was preparing to join the WTO, lowering tariffs, and building a market-oriented structure. Duty exemptions (duty and VAT exemptions on imported intermediate inputs and VAT refunds on exports) were used to encourage exports by deterring companies from selling in the local market and promoting the use of imported intermediates that were either duty-free or eligible for tax refunds.

The admission into WTO in 2001

In 2001 China joined the WTO after many years of negotiations. This is a huge step forward for the economy, and it may be considered the third industrial upgrade, with high and new tech exports expanding quickly and product sophistication increasing as well.

The World Trade Organization (WTO) is a worldwide commercial organization founded on the principles of the General Agreement on Tariffs and Trade (GATT), the GATS (General Treaty on Trade in Services), and TRIPS (Treaty on Commercial Aspects of Intellectual Property Rights). The Organization's purpose is to ensure that markets guarantee non-discriminatory international commerce by adhering to common fundamental norms. Because of increasing globalization, in today's economy every country's action affect others too, therefore it is necessary to have a system that allows

countries to cooperate. Because of this, WTO was established, it serves as a negotiating platform, encouraging national trade policies to cooperate and assisting in the resolution of disputes among member countries.

Being a member of the WTO is undeniably beneficial since it streamlines access to the markets of the WTO's member nations and helps to lessen the uncertainty and expenses that enterprises face when beginning trade operations with other countries.

As a result of the evident benefits of joining the WTO for China's economy, in 1986 the Chinese government had declared its intention to initiate negotiations for GATT admission. However, differences in the Chinese and Western economic systems for international trade prevented an immediate agreement from being reached; in order to meet the membership requirements, China had to modify and improve its administrative regulations and laws, particularly those pertaining to foreign trade and economic cooperation. China has continued to eliminate trade barriers: in 2004, it reduced its average tariff rate to 10.7% and by 2012 below 9%.

China's entrance to the WTO was a significant push for the country's opening, although it did create concerns both internally and globally. The main concern internally was that entering such a global economic system could create a new capitalist ruling class that would exploit workers and farmers⁶. Additionally, it has aided in closing the technological gap between China and the developed world, as well as boosting trade and foreign investment development. Tariff changes have resulted in increased competition from imports in China's domestic market as well as enhanced access to imported intermediate inputs. Additionally, it offered new export prospects due to increased productivity and competitive prices in the global market as a result of cheap labor and infrastructure, primarily in labor-intensive manufacturing and the assembly of technology-intensive products. In the years afterward, apparel exports have led China's export growth, followed by textiles and vehicles.

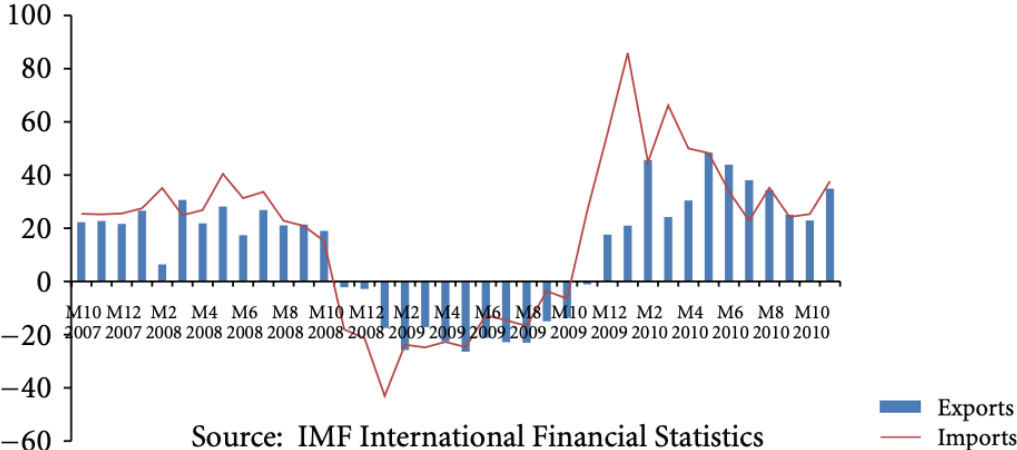
The 2008 economic crisis

China's economy had been growing steadily for years, but it was not immune to the global financial crisis created by subprime loans in 2008. It had a great impact on the worldwide

⁶ (Breslin, 2007)

economy and international trade, and because China was now integrated into the global economy and heavily reliant on global demand, it was badly impacted, particularly in its exports. China is not typically regarded as a significant victim of the 2008 subprime financial crisis, although it was severely impacted, even if in a different way than other nations. It was initially unaffected by the crisis; financial channels were unaffected, but the primary issue for the Chinese economy came from it being an export-driven economy. It was overly reliant on exports to boost economic development, and the primary export destinations of Chinese goods were suffering tremendously as a result of the crisis; the US, the EU, and Japan accounted together for nearly half of Chinese exports, and all three entered recessions in 2008. According to Zhang, the country's export-to-GDP ratio was 32% in 2008, while its exports-and-imports-to-GDP ratio was 59%. The global economic downturn resulted in a sharp decline in foreign demand, causing a great damage to the Chinese economy⁷. As a result, GDP annual growth fell from 14.2% in 2007 to 9.6% in 2008 and 9.2% in 2009. Although an annual growth above 9% was one of the highest in the world for that period, it was low in comparison to China's trend and government targets⁸.

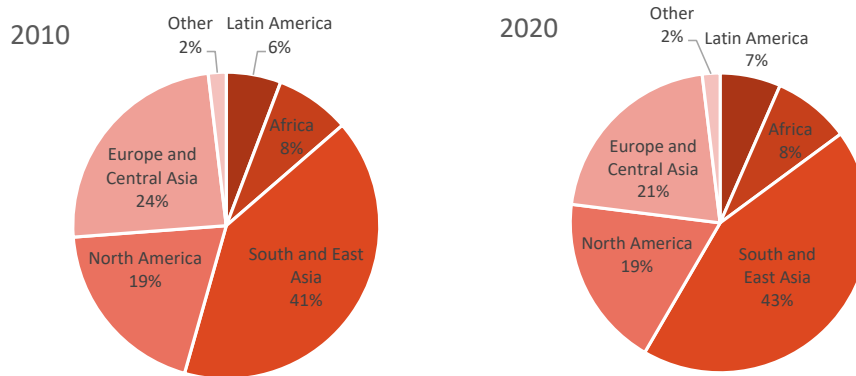
Graph 1.4 China's exports and imports growth 2007-2010



According to Graph 1.4, China's export growth rate declined drastically in November 2008 to 2.2% from 20% in October. Overall, China's exports declined by nearly 17% in 2009 before reverting to positive growth in 2010, when its trade partners' economies began to recover⁹.

⁷ (Zhang, 2009)
⁸ (Li, et al., 2012)
⁹ (Li, et al., 2012)

Graph 1.5 Destinations of Chinese export after the 2008 crisis



Graph 1.5 shows that, while the 2008 financial crisis impacted the value of exports, it had little effect on the composition of export destinations. Considering export destinations in terms of global regions, South and East Asia accounted for 40% of Chinese exports in 2008, while Europe and North America accounted for 26% and 19%, respectively. Following the crisis, the ratio did not change significantly; Asian nations increased their export share to 41% while European countries decreased theirs to 24%. The distribution of exports across global regions remained mostly consistent during the next decade, with Asian nations accounting for 43% of exports, European countries accounting for 21%, and North Americans accounting for 19%, the majority of which we know is due primarily to the United States. Overall, the crisis had a greater impact on exports to Europe, which lost 5% of their market share by 2020, while Asia gained 3%. Consequently, the impact of the financial crisis was more visible in terms of trade volume than export composition.

The government's priority was to stabilize exports and demand in foreign markets. Exports had been the foundation of China's economic success, and they needed to be protected and guaranteed to continue.

The latest phase of China's economic development began in 2013 under Xi Jinping's leadership, with the 'going global' plan. China surpassed the United States as the world's largest trade country, it proposed and formed the Asia Infrastructure Investment Bank; and it launched the "Belt and Road" initiative to promote closer ties with the rest of the globe.

1.2 Economic policies

As previously discussed in the first section of this thesis, China's economic progress during the last three decades has been driven by policies aimed at increasing exports and transitioning to a market economy. The government was able to select and implement the appropriate policies in order to achieve great success. The primary drivers of this accomplishment are undoubtedly foreign direct investment (FDI), special economic zones, and export development, all of which are linked to the Open-Door policy.

1.2.1 Open-Door policy

Prior to 1978, China's trade policy was strongly based on import substitution. In 1978, the Chinese government, led by Deng Xiaoping, implemented the "Open-Door" policy, which marked the beginning of the transition to a "market economy," opened the door to international firms, and shifted China's economic strategy from self-sufficiency to active participation in the global market. Foreign trade rose fast, and China has become increasingly more involved in international economic organizations¹⁰. It was an exceptionally successful approach, with the average annual rate of trade increase exceeding 15% between 1978 and 1990, more than three times that of total world commerce¹¹, although it was a gradual opening.

The aim of the Open-Door policy was to open up to the world market, hence the government opted to prioritize exports. As a result, various export promotion strategies were developed. First, an exchange rate policy was established with the goal of resolving the issue of the Renminbi (RMB) being significantly overvalued by establishing a dual exchange rate system that allowed export enterprises to transfer their foreign exchange revenues into the Chinese currency at a favorable rate. Second, in 1984, an export tax rebate policy was implemented, providing a value-added tax and import duty rebate on exported goods. Following the Asian Financial Crisis in 1997, the currencies of China's neighboring countries depreciated significantly, but China instead reinforced the tax rebate mechanism to boost export development and retain its market dominance. This policy measure is found to have worked effectively and to have contributed greatly to China's exports in both the short and long run¹².

¹⁰ (Huan, 1986)

¹¹ (Lardy, 1992)

¹² (Chao, et al., 2001)

Tariffs, quotas, and licensing replaced administrative limitations on exports and imports in order to boost exports. The government delegated authority over exports and imports to local governments or regional foreign trade enterprises. Several special economic zones and coastal open cities have been established in order to boost exports and attract international investment¹³.

1.2.2 Foreign Direct Investments

Foreign direct investments (FDIs) are ownership holdings in a domestic firm or project (in our case, a Chinese company or project) owned by foreign corporations or investors. Different forms of agreements are included in foreign investment. Equity joint ventures were a minor component of FDI in the early 1980s, but swiftly increased to account for half of it by 1990. Contractual joint ventures, entirely foreign-owned businesses, and joint explorations are additional options (mainly in offshore oil explorations)¹⁴.

Foreign direct investments (FDIs) are without a doubt one of the most important economic events that have had the greatest impact on China's export boom. Since its beginning in 1978, the government has not only permitted foreign investment in the nation for the first time but has also taken efforts to encourage it and the establishment of foreign-invested firms (FIEs).

As shown by Fu, encouraging processing trade, particularly FDI engaged in export-oriented processing activities in export processing zones (EPZs), has become a policy instrument frequently used by developing nations to enter the global production network and enhance international competitiveness¹⁵.

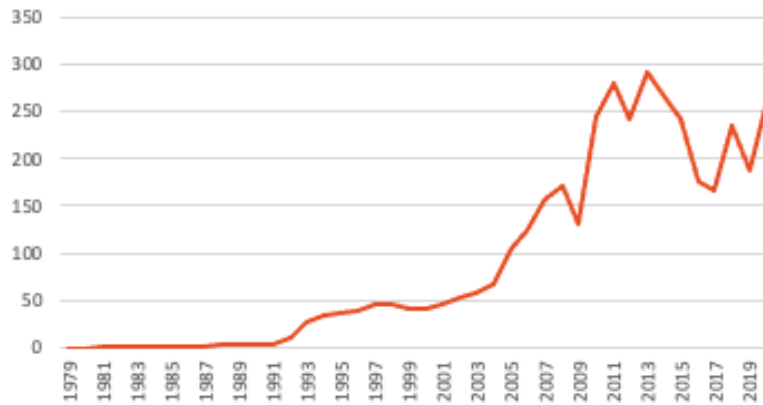
FDI development is a direct outcome of the Open-Door policy; as we can see from graph 1.6, it was essentially nonexistent before 1979 and since then kept growing both as inflow value and share of the country's total GDP. It grew rapidly in the first five years, from just \$80000 in 1979 to \$1.26 billion in 1984, accounting for 0.48% of China's GDP, then reaching \$11.16 billion in 1992, rising from a negligible part of total GDP to 2.61%. In 1993 it reached its highest share of GDP, accounting for 6.19% of the total.

¹³ (Wei, 1995)

¹⁴ (Wei, 1995)

¹⁵ (Fu, 2011)

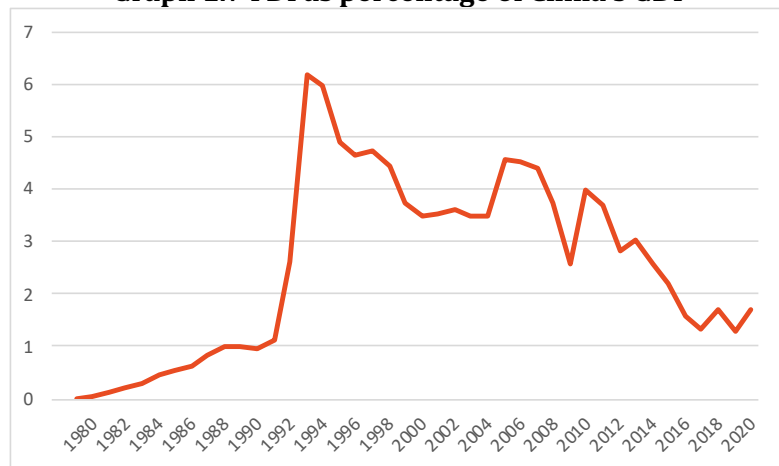
Graph 1.6 China's FDI inflow, in \$ billion



Source: The World Bank, 2020

It continued to expand with a dramatic rise of 155% from 1991 to 1992, until the end of the century, when it stalled for the first time, even experiencing negative growth, for the first time since 1979, of -10% from 1998 to 1999. After joining the WTO in 2001, growth continued to be stable until the 2008 crisis. FDI inflows into China's economy have been inconsistent since 2008. Because of strong market limitations and increasing competition from local firms, growth began to slow after 2011. In order to strengthen the investment climate, the Chinese government adopted a new Foreign Investment Law in 2019.

Graph 1.7 FDI as percentage of China's GDP



In the past years the Covid-19 epidemic and the subsequent economic downturn has strongly affected international economic relation, as a result, international investments were also affected substantially. FDIs totaled \$187.17 billion in 2019, a 20.48% decrease from 2018, but increased to \$253.10 billion in 2020, a 35.22% rise from 2019.

The data clearly indicates the significant impact of FDIs, but it is also interesting to examine how these foreign investments were able to grow so quickly, and which policies supported and enforced this growth.

With the introduction in 1979 of the first law regarding foreign direct investment, the Law of the RPC on Joint Ventures Using Chinese and Foreign Investment (Sino-Foreign Equity Joint Venture Law)¹⁶, China began a gradual opening to foreign trade and foreign direct investment. Joint enterprises with 25% foreign capital and Chinese management are also permitted under the new law. Since the implementation of the first law, the inflow of FDI has continued growing and in 1993 China became the largest receiver of FDI among developing countries and the second largest in the world. To encourage the inflow of FDI, strategies to reduce taxation and fiscal burdens on foreign parties have been implemented. According to Lu and Tsai, a foreign-invested corporation would benefit from a three-year tax vacation, as well as two years of half-taxation. Even after these years had passed, they would be subject to facilitated taxes, which would be far lower than that paid to state-owned enterprises. This benefited foreign investors tremendously and provided a boost in the early years; however, it was eventually repealed with a fiscal reform in 1993 that tried to standardize taxation. Other regulations and initiatives have since been adopted, frequently in specific key industries, such as the import duty exemption for FDI in high technology sectors¹⁷. As a result, foreign-invested enterprises are responsible for 89% of China's overall exports of high-technology items.

The government's first significant move in providing incentives to attract FDI and encourage exports occurred in the late 1980s, when it established official swap markets to allow the reallocation of foreign currency and the maintenance of a dual exchange rate system. This enabled investors to convert foreign currencies into Renminbi (RMB) at a greater rate than the official exchange rate, making international investment in Chinese enterprises considerably more appealing. In January 1994, the dual rate system was repealed¹⁸.

FDIs are especially relevant in the context of this thesis because they not only had a positive influence on the general expansion of the Chinese economy, but they also played a vital role in the specific growth of Chinese exports. Foreign-invested enterprises (FIEs) increased their exports far faster than local firms, culminating in a 57% share of overall Chinese exports in 2004. FDIs have played an important role in the development of exports due to the additional capital, technology, and managerial know-how that

¹⁶ (Lu & Tsai, 2000)

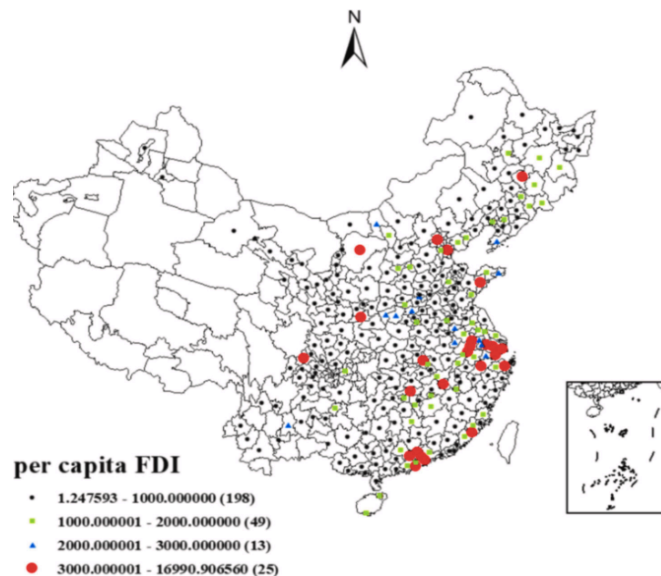
¹⁷ (Lu & Tsai, 2000)

¹⁸ (Yao, 2006)

multinational companies (MNCs) bring with them, as well as access to global, regional, and specifically local markets¹⁹.

China has thus taken advantage of these benefits in order to enter new export activities and improve its performance in existing ones. Foreign investments capitalize on China's comparative advantage of low-cost labor and a large employable population, while providing the additional capital required for China to build up its initial base of labor-intensive manufacturing exports. FDIs can have an influence not just on the environment in which businesses operate, but also directly on their export competitiveness. This can occur through technology spillovers, which can strengthen local firms' core competitiveness, demonstration effects and labor movement, and information spillover. Through technology spillovers a country can gain information about export market intelligence, international marketing know-how, and export operations from foreign firms²⁰.

Graph 1.8 Concentration of per capita FDI in China



Source: (Yu, et al., 2021)

FDI is heavily concentrated in the eastern area (particularly in the special economic zones and the coastal cities), where most export-oriented policies have been implemented. For example, in 1995, the eastern area accounted for more than 88% of overall FDI, with Guangdong alone accounting for 27%. These regions have natural advantages for export companies, since they have a more productive industrial base, a more efficient

¹⁹ (Zhang, 2006)

²⁰ (Fu, 2011)

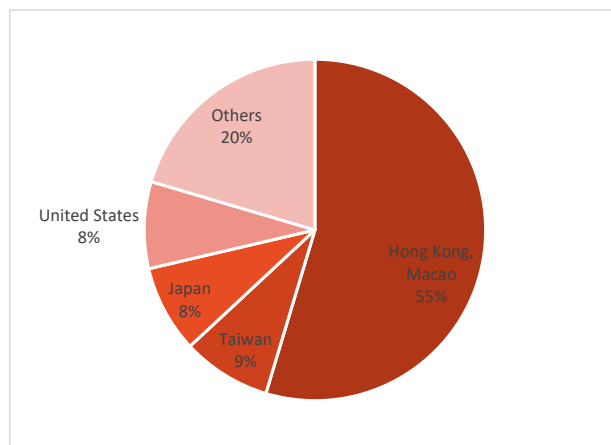
transportation system, superior environmental and human resources, and, most importantly, quicker access to China's major investors, particularly Hong Kong²¹.

China's FDI comprises investment from a variety of nations, with Hong Kong, Macau, and Taiwan accounting for the majority. The main source of FDI into China has traditionally been Hong Kong, accounting for more than half of the total amount; in 2020, it provided 70.8% of the actual use of foreign investment in China²².

It should also be noted that a major amount of these investments came not from Hong Kong investors, but from overseas investors who used Hong Kong as a financial hub.

Hong Kong and Macao were the source of more than half of all FDI inflows to mainland China in the 1980s and 1990s, followed by the United States and Japan in the 1980s and Japan and Taiwan in the 1990s. Since 1989, Taiwanese foreign investment has increased and surpassed that of the United States and Japan after 1992. Total FDI in China in 1995 was \$37.5 billion, with Hong Kong and Macao accounting for 54.64%, Taiwan accounting for 8.43%, Japan accounting for 8.28%, and the United States accounting for 8.22%²³.

Graph 1.9 Countries of origin of Chinese FDI in 1995



Over the last 10 years, investments from Hong Kong into China have increased by 74.7%, while investments from the rest of the world have decreased by 19.6%. Over a decade, investment from the United States and the European Union fell by 23.8% and 11.8%, respectively²⁴.

²¹ (Yao, 2006)

²² (Wang, 2022)

²³ (Hsu, 2004)

²⁴ (Wang, 2022)

1.2.3 Regional Policies and Economic Zones

The disparity in growth rates across regions has been a prominent feature of China's economic success, leading to the current scenario in which modern industries, production, and export hubs are concentrated in a few selected regions. But how did China arrive at this point? This section will attempt to identify the steps that lead to the current scenario, what policies are at the root of it, and how the situation is currently.

In 1949 the Chinese Communist leadership took over an industrial structure that was not just primitive and war-damaged, but also terribly imbalanced. The coastal regions were responsible for over 70% of industrial assets and production (including handicraft output), with all other areas of the country responsible for only 30%. There were significant regional variances even within the coastal region, modernized industrial production was concentrated in a few cities, more than half of the total gross value of output from the whole coastal area came from just eight cities (Beijing, Tianjin, Shanghai, Shenyang, Anshan, Benxi, Dalian, and Fushun). This was a direct outcome of the then-current dual economy, which was characterized by a vast agricultural hinterland surrounding the few industrial centers²⁵. Uneven growth seemed unavoidable, especially for a nation as large and complicated as China. As a result, the leadership has focused on pushing economical and industrial development in the area with the greatest comparative advantage, hoping that rapid growth would become the engine of growth for the entire country. The coastal area, as “China's engine of growth”, is export-focused at its heart, but also geared toward technical progress and modernization; commerce is simply one method of reaching the objective of leading the rest of the country and upgrading the technological level of China's industries²⁶.

From graph 1.8 it is clear that the regional distribution of exports in China is severely unbalanced, few regions play a much bigger role than others in Chinese exports. Among the 31 provinces and municipalities in China, the top nine generated 90 percent of total exports and 92 percent of total imports²⁷.

The Yangtze Delta region alone accounted for 36% of total exports between 2000 and 2004, Guangdong Province contributed 32 percent of exports, just the two top regions

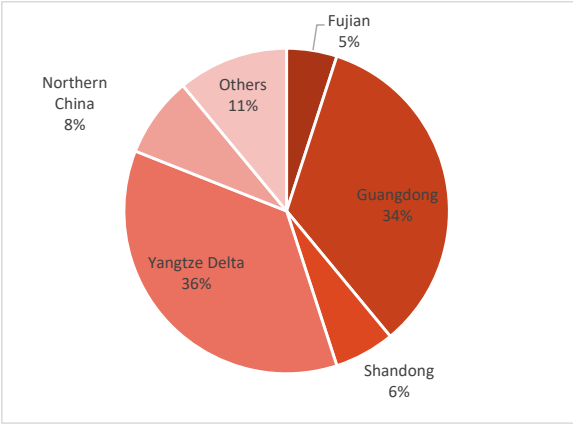
²⁵ (Yang, 1990)

²⁶ (Yang, 1990)

²⁷ (Yao, 2009)

accounted for 70% of Chinese exports. In 1999, exports of the coastal regions amounted to \$179 billion, accounting for 92 per cent of total exports.

Graph 1.10 Regional distribution of Chinese exports 2000-2004



Source: S. Yao 2009, Databank of China customs statistics

The Chinese government is fully aware of the detrimental impacts that the country's economy has brought about as a result of such a stark regional disparity. The 13th Five-Year Plan established the framework for government policies from 2016 to 2020, and, in this period, China's regional development strategies and policies positively contributed to economic transformation and upgrading in less economically developed areas, as well as more coordinated regional development²⁸. Today, regional development is a priority of economic policy, with coordinated regional development and high-quality regional development at its foundation.

1.2.4 Development zones

Export Processing Zones (EPZs) are a tool utilized by many developing nations to stimulate export-oriented foreign direct investments, employment development, and technology transfer. The first Chinese EPZ was established in 1979, and their number has grown dramatically since then; its performance is intrinsically related to FDI inflows.

The definition provided by the United Nations Industrial Development Organization (UNIDO) is “An EPZ is a relatively small, geographically separated area within a country, the purpose of which is to attract export-oriented industries, by offering them especially favorable investment and trade conditions as compared with the remainder of the host country. In particular, the EPZ provides for the importation of goods to be used in the production of exports on a bonded duty-free basis. By far the largest part of investors are

²⁸ (Wei , et al., 2020)

foreign companies which have their origin in developed countries [...] The EPZ is a development and modification of the earlier free ports and free trade zones”²⁹.

According to UNIDO, certain geographical and governmental conditions must be met in order for an export processing zone to be successful. A legislative climate that prioritizes a competitive exchange rate is required, as well as a favorable position in terms of international transportation, banking, and communications services; this surely had an impact in the locations where EPZs were established. Finally, an organization with an adequate structure is required to help investors with both project approval and operation³⁰.

According to the International Labor Organization (ILO), Special Economic Zones, Industrial Free Zones, and Enterprise Zones are the three primary categories of manufacturing EPZs. In China, Industrial Free Zones and Enterprise Zones, as well as other services associated to EPZs, are collectively referred to as “Development Zones”. Because of the discrepancy in terminology between international literature and Chinese regulations, I will refer to them as Development Zones in this section to separate them from “Export Processing Zone”, a subcategory of Chinese Industrial-Commercial Free Zones.

Table 1.1 Development Zones Typology

China's Development Zones Typology	ILO's Typology
Special Economic Zone (SEZ) Open Coastal/ Riverside/ Inland/ Border City	Special Economic Zone
Economic and Technology Development Zone (ETDZ) High-tech Industrial Development Zone (HIDZ) Border Economic Cooperation Zone (BECZ)	Enterprise Zone
Bounded Zone / Logistics Park (BZ / BLZ) Export Processing Zone (EPZ) Industrial Park, Investment Zone, etc. (IP / IZ)	Industrial / Commercial Free Zone

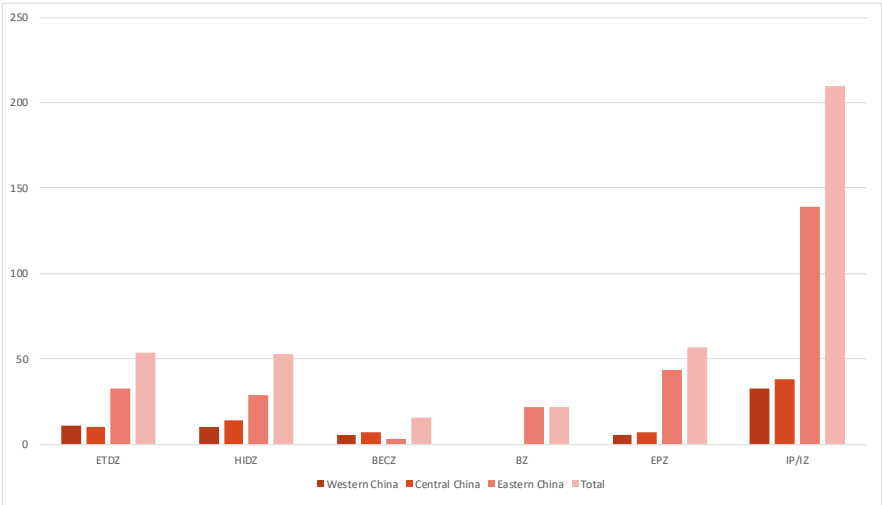
Source: ILO, Fu & Gao, 2007

The survey conducted by Fu and Gao³¹ (2007) provides detailed information on the number and location of Chinese Export Processing Zones.

²⁹ (UNIDO , 1982)
³⁰ (UNIDO , 1993)
³¹ (Fu & Gao, 2007)

Development zones in China began in 1980 with four Special Economic Zones (SEZs) in Shenzhen, Zhuhai, Shantou, and Xiamen and eventually expanded to 14 open coastal cities, joined in 1985 by the entire Hainan Province, which was designated as the sixth SEZ. The Yangzi River Delta, Pearl River Delta, Southern Fujian Delta, Shandong Peninsula, Liaodong Peninsula, Heibei, and Guangxi Province also became open costal zones the same year, and the number of open cities continued to grow in the years following, reaching a total of 60 SEZs in 1992 (5 Special Economic Zones, 15 open coastal cities, 8 open riverside cities, 19 open inland cities, 13 open inland cities and 13 open border cities). 52 High-tech Industrial Development Zones (HIDZs) were created between 1991 and 1993. These zones were designed to upgrade China's industry by focusing on high-tech sectors. They are supervised by China's Ministry of Science and Technology, whereas other development zones are controlled by the Ministry of Commerce. During the same period, China established more than ten Bounded Zones (BZ) in SEZs and coastal cities. The goal was to create bonded warehouses where goods are exempt from all tariffs, to allow tax-free capital equipment and industrial inputs³².

Graph 1.11 Regional distribution of China's Development zones



Source: Bulletin Catalog of China’s Development Zone Censor, Fu and Gao, 2007

The data from these zones clearly reveals a preference for certain geographical areas over others. An obvious preference for eastern China, particularly around the coastline. The main exception is Border Economic Cooperation Zones (BECZ), which, due to their nature, are often located in inland locations.

³² (Fu & Gao, 2007)

Special Economic Zones SEZ

Among the several types of Development Zones present in China, some are worth exploring further. Special economic zones (SEZs) are without a doubt the most well-known and important.

Special economic zones are bounded areas within a country that operate under different laws than the rest of the country, particularly in terms of trade.

Special Economic Zones in China can be divided into several subcategories; officially, there are 5 Special Economic Cities, 14 Open Coastal Cities, and 1 Special Economic Province.

Table 1.2 China’s Special Economic Zones

Special Economic Cities	Special Economic Province	Open Coastal Cities	
Xiamen	Hainan	Dalian	Ningbo
Shantou		Qinhuangdao	Wenzhou
Shenzhen		Tianjin	Fuzhou
Zhuhai		Yantai	Guangzhou
Kashgar		Qingdao	Zhanjiang
		Lianyungang	Beihai
		Nantong	
		Shanghai	

They are distinguished by greater autonomy of local government compared to other regions, and they have been a key step in the Chinese economic reform and opening to the international market of China, and arguably the most important move towards export-oriented policies that helped shape China into the "factory of the world" and a major player in the global market that it is today. The central government provided SEZs significant autonomy, allowing the local government to make numerous decisions regarding the economic development directly, with certain constraints in especially sensitive sectors (railways, postal and telecommunication services, banking, civil aviation, and national defense)³³.

³³ (Barbieri, et al., 2015)

Customs duty exemptions, as well as the allocation of advantageous policies and public infrastructures, were intended to encourage foreign investors, imports are free from import tariffs if they are processed for an export purpose. As a result, the majority of manufacturing operations in these zones is involved in the processing trade of goods primarily destined for export markets. SEZs and, as a result, Foreign Invested Enterprises (FIEs) were obviously crucial to the expansion of China's exports, but they also posed a threat to the domestic market, hence why the Chinese government made efforts to protect its internal market from competition, particularly during the first stage of the Chinese economic reform. For example, the FIEs were required to sell the majority of their products in the markets of foreign countries and not inside China³⁴.

SEZs were established with a variety of purposes and objectives; we may identify two sorts of goals: export-oriented goals and policy-oriented goals. The first category includes the need to attract foreign direct investments, gain technological knowledge, and grow exports, which would eventually help generate jobs and enhance the inflow of technology and managerial competence that would assist China's industry progress. The second category includes the need to establish a controlled environment in which China could study capitalism and try alternative approaches and economical strategies. This way, policies could be tested before being implemented throughout the country. SEZs were critical for testing new economic strategies without having to employ them within the domestic market; they were also a trial to assess the success or failure of the open-door policy. The worry was that the open-door policy would destabilize the socialist economic system and cause significant harm to domestic economic development if implemented. To keep the policy inside the defined economic zones, both geographical and content constraints were imposed. As the special economic zones drew more and more foreign money, the fear of failure faded, and some of the policies were gradually applied in other regions of the country as well³⁵.

SEZs not only did not fail, but they also made substantial contributions to the Chinese economy as a whole. They contributed greatly to national GDP, employment, and exports in addition to successfully testing the market economy and new institutions to use as new

³⁴ (Fu, 2004)

³⁵ (Zhang, 2006)

role models for the rest of the country to follow. In 2006, the five first SEZs contributed for 5% of total real GDP in China, 22% of total goods exports, and 9% of total FDI inflows³⁶. Attracting FDI is one of the primary benefits of establishing export-oriented economic zones; because of their unique qualities, SEZs provided an ideal environment for investment, which eventually aided in the expansion of SEZ productivity and scope of operations. According to Zeng's survey, FDI inflows into the five special economic zones increased significantly from 1978 to 2008. Table 1.3 shows that FDI inflows into SEZs have increased dramatically in three decades. The most remarkable growth is surely Shenzhen's, where FDI inflows surged from \$9 million in 1978 to \$163.8 billion in 2008.

Table 1.3 FDI Inflows in Five Comprehensive Special Economic Zones, 1978–2008

<i>Year</i>	<i>Shenzhen</i>	<i>Zhuhai</i>	<i>Shantou</i>	<i>Xiamen</i>	<i>Hainan</i>
<i>Exports (billion current US\$)</i>					
1978	0.009 ^a	0.009 ^a	0.251 ^b	0.082	—
1990	8.152	0.489	0.84	0.781	0.471
2000	34.564	3.646	2.595	5.880	0.803
2006	135.959	14.843	3.484	20.508	1.376
2007	168.542	18.477	3.912	25.555 ^c	1.838 ^c
2008 ^d	163.780	19.730	3.278 ^e	26.970	—
<i>Utilized FDI (million current US\$)</i>					
1978	5.48 ^a	n.a.	1.61 ^b	—	0.10 ^b
1990	389.94	69.1	98.09	72.37	100.55
2000	1961.45	815.18	165.61	1031.50	430.8
2006	3268.47	824.22	139.60	954.61	748.78
2007	3662.17	1028.83	171.62	1272 ^c	1120 ^c
2008 ^d	3929.58	1138.49	—	1955.63	—

Sources: Yeung et al. 2008; Yeung, Lee, and Kee 2009, data compiled by Zeng, 2010

The history and growth of SEZs are inextricably related to Deng Xiaoping's Open-Door policy, which began in 1979 and while the model is widely employed in economies all over the world, they were designed with some Chinese characteristics that would fit in the process of transitioning to a market economy.

The Chinese government decided to give Guangdong and Fujian provinces preferential policy treatment in July 1979; this decision was finalized in May 1980 with the official establishment of the first four special economic zones. The four cities selected were all in

³⁶ (Zeng, 2010)

southern coastal China, and the selection was not casual; the area's strategic location made it ideal for the intended purpose. Moreover, three of the four cities (Shenzhen, Zhuhai, Shantou, and Xiamen) are in the same province, the Guangdong Province, with the exception of Xiamen, which is in the Fujian Province. 14 coastal port cities were opened to international investment and trade in 1984, and the Hainan province was designated as a Special Economic Zone in 1988. The formation of export processing zones (EPZs), export duty-free zones (EDFZs), and high-technology development zones (HTDZs) was a commonly employed tactic to attract foreign investment in these newly opened cities and areas³⁷.

Guangdong Province

Guangdong is a coastal province in southeast China, that benefits from its advantageous location and proximity to Hong Kong and Macao. It perfectly demonstrates China's regionally specific export-oriented policy implementation. It has been at the forefront of the development of Chinese economic reforms and export growth since the beginning of the reform. This region is particularly relevant for the purposes of this thesis since it encompasses all of the major economic policies and methods discussed in previous chapters, all of which have had considerable success. It has served as a case study for Chinese officials interested in studying certain policy tools in an "open" province. Its policy-driven industrial development and success were critical in ensuring the successful application of policies in other regions. This progress was made possible by the introduction of various measures such as SEZs, clusters, and SOEs.

Guangdong exports have risen significantly and have become a major component of China's overseas commerce. In 1999, its export value exceeded \$78 billion, accounting for 40% of overall exports, leaving the second largest exporter, Shanghai, well behind, accounting for 10% of total exports. The region's prominence has not dwindled; in 2020, it was still China's biggest exporter, with a \$510 billion export value. Shenzhen's exports (one of the Guangdong SEZs), for example, grew from \$11 million in 1980 to \$28 billion in 1999, accounting for 14.5% of China's total exports in that year. Shenzhen's development has been particularly impressive; it has grown from a small town with a gross industrial output of less than 100 million yuan in 1980³⁸ to a metropolis that is now

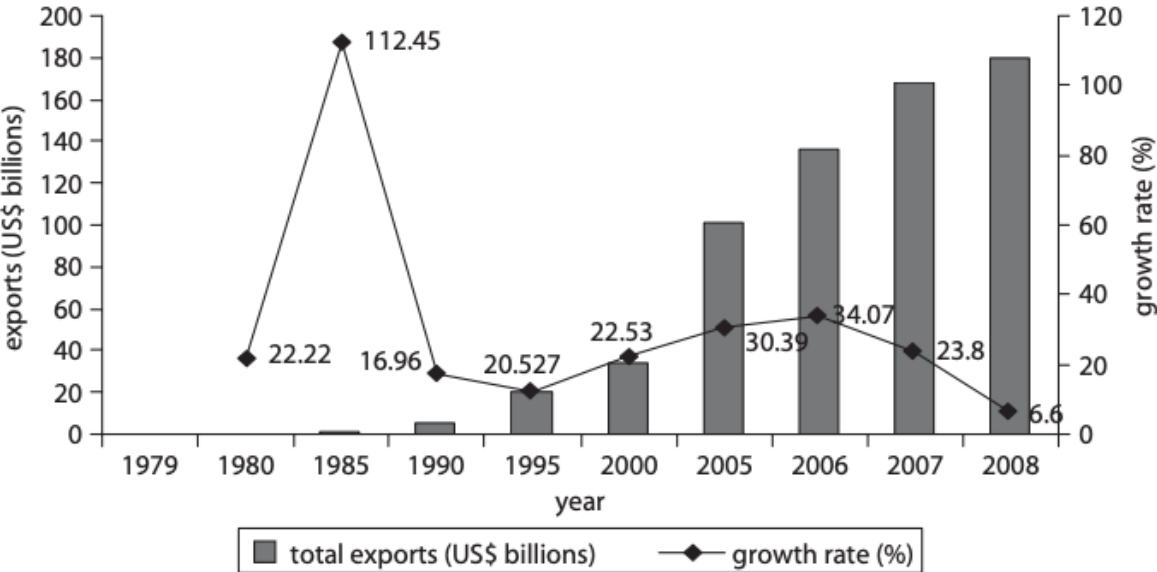
³⁷ (Fu, 2004)

³⁸ (Chou & Ding, 2015)

a global production center of computers sold all over the world; it is now the Chinese capital city in the electronics sector, which accounts for 70% of the total region's output. Because of its closeness to the industrially developed Hong Kong, Shenzhen was chosen to establish China's first special economic zone. Hong Kong's manufacturers required space to expand their operations, which resulted in a large inflow of FDI into Shenzhen, contributing to the city's exceptionally fast expansion, so much so that a new phrase "Shenzhen speed" was coined to refer to extraordinary economic growth³⁹.

Shenzhen was granted special tax exemptions as a SEZ, and in 1981 it was granted the same political status as the provincial capital, Guangzhou, by the Province Government, then in 1988, Shenzhen was promoted to the level of a province, and in 1992, the central government provided legislative power⁴⁰. Gaining this status was critical to the success of Shenzhen's expansion; it was now granted substantial autonomy, allowing it to implement laws and reforms. Policies that contributed to the creation of a suitable environment and a free market in order to recruit the qualified employees required and respond quickly enough to changes and market demands to ensure efficiency.

Graph 1.12 Growth Rate and Total Value of Exports in Shenzhen, 1979–2008



Source: Shenzhen Statistics Bureau 2008, data compiled by Zeng, 2010

This is because the many incentives for Shenzhen's development made it the ideal place to test certain policies, including the sale of state land-use rights, the implementation of personnel system reforms, the elimination of voucher quotas for food purchases in 1984

³⁹ (Chou & Ding, 2015)
⁴⁰ (Zeng, 2010)

(10 years before the rest of China), the opening to foreign banks in 1982, the reform of state-owned enterprises (SOEs) in 1986, and the establishment of a stock exchange in 1990⁴¹.

Shenzhen is economically significant, but it is not the only development zone in Guangdong; there are substantial industrial development zones and clusters around the province. The area is particularly well-known for its specialized towns. Specialized towns account for 40% of Guangdong's GDP; they began in the 1980s with the "Spark Plan," which intended to accelerate the region's technological growth, in which a geographical area has a high concentration of enterprises manufacturing one product or a restricted range of related items. A variety of financial and preferential policies are available to stimulate agglomeration and specialization⁴².

A township must have more than 30% of its output from a single specialized industry and more than 200 million euros in yearly production to be considered a specialized town. The share of one product in the entire production of the town is sometimes so significant that we may speak of "one town-one product." For example, ceramic items account for 93.6% of total industrial production in Fengxi, while food packaging accounts for 91.9% in Anfu⁴³.

The Pearl River Delta Economic Zone

The Guangdong province administration formally proposed the establishment of the PRD Economic Zone (PRDEZ) in October 1994, with the goal of modernizing the area. Guangdong is home to the Pearl River Delta Economic Zone, which consists of nine cities. Guangzhou, Shenzhen, Zhuhai, Foshan, Dongguan, Zhongshan, Jiangmen, and sections of Huizhou and Zhaoqing are among the cities. This area is important not just for the Chinese economy and exports, but also for the world market. It contributes significantly to the country's exports, and since its inception, it has seen far greater growth rates than the rest of China and Guangdong, swiftly becoming one of the world's key manufacturing hubs.

As previously stated, the majority of SEZs in China are located along the coast or near important international trade centers. This is obvious when considering the causes of the

⁴¹ (Barbieri, et al., 2015)

⁴² (Bonnini Stefano, et al., 2012)

⁴³ (Bellandi & Di Tommaso, 2005)

Pearl River Delta Economic Zone's success. Its proximity to Hong Kong was its initial benefit, the relocation of production operations by enterprises from Hong Kong following the Chinese reform program in 1978, started the growth process in this region and as a result encouraged other investors to enter the area. The cooperation between the two regions has been mutually beneficial, with Hong Kong providing capital, logistical assistance, access to global markets, managerial know-how, technology, and management skills. Labor, land, and natural resources have all been contributed by the Pearl River Delta region⁴⁴.

Hong Kong's manufacturing sector had grown significantly in previous years, but it was now losing its competitive edge due to growing labor prices and limited room for expansion. Moving their production base to the nearby PRD had several advantages, including proximity and ease of travel, as well as the cost-effectiveness of exporting products via Hong Kong⁴⁵.

The PRD population makes for a minor part of the total Chinese population; nonetheless, the area's contribution to the national GDP is disproportional. In 2018, it accounted for only 4.5% of China's total population but 9% of GDP and 24.8% of total exports⁴⁶. In the 1990s, the PRD's GDP share was above 6%, and the percentage continuously increased until it reached 9% in 2001. As a result, the PRD's per capita GDP is significantly greater than the national average. By 2001, its per capita GDP was nearly 5 times the national average. In reality, due to the area's continuous expansion at a greater rate than the rest of the nation's economy, the per capita GDP discrepancy grew over time⁴⁷.

Since China launched its reforms, the PRD has become the most quickly expanding and richest area in China, with processing trade serving as the driving force behind the manufacturing activity. It began with the manufacturing of labor-intensive consumer products before shifting to the production of high-tech electronic equipment and machinery in the 1990s. The area is not only a major manufacturer within China but also worldwide, being the world's largest manufacturer of specific commodities, such as certain kinds of toys, where its global manufacturing share reaches 60%⁴⁸.

⁴⁴ (Zeng, 2010)

⁴⁵ (Rubini & Barbieri, 2013)

⁴⁶ Source: Guangdong Statistical Yearbook

⁴⁷ (Rubini & Barbieri, 2013)

⁴⁸ 2020 PRD Economic Profile, HKTDC Research, 2020, visited on 24 November 2022, <https://research.hktdc.com/en/data-and-profiles/mcpc/provinces/guangdong/pearl-river-delta>

The exceptional success was also made possible by the establishment of a supply chain inside the PRD; industries grew in clusters linked by efficient transportation and were able to acquire all parts, components, and accessories of a product in the same location, allowing orders to be fulfilled rapidly⁴⁹.

The PRD has been a crucial element in China's export boom since the government recognized and capitalized on its comparative advantage. However, the region's economic progress has slowed dramatically in recent years. According to Li⁵⁰, the PRD's cost advantage is diminishing as labor and land prices rise and national environmental rules and regulations become more rigorous. Not only that, but it has had to deal with several development bottlenecks such as environmental degradation, unsustainable natural resource consumption, excess manufacturing capacity, and greater internal competition.

Clusters

Clusters of industries are geographical concentrations of interrelated industries that are linked to one another and to local institutions. They are a tool used to promote economic growth, and the creation of industry clusters can often aid in promoting the local economy's development. Even though they are closely related, there are several important contrasts between industrial clusters and SEZs, such as the kind of sectors most engaged. SEZs typically operate in technology-intensive and capital-intensive sectors with stronger links to the global market, whereas clusters typically operate in low-technology and labor-intensive manufacturing sectors at the lower end of the global value chain and are made up of a large number of small and medium-sized businesses.

While SEZs are typically established through a "top-down" approach by the government creating and implementing policies, most clusters are formed organically through a "bottom-up" process, which means that their formation is not the result of a direct governmental decision or policy, but rather of market forces, and clusters form in areas where significant business activity in a given sector already exists. However, once a cluster forms, the government supports or promotes development in a variety of ways, including the establishment of an industrial park on the basis of an existing cluster⁵¹.

⁴⁹ (HKTDC Research, 2020)

⁵⁰ (Li, et al., 2022)

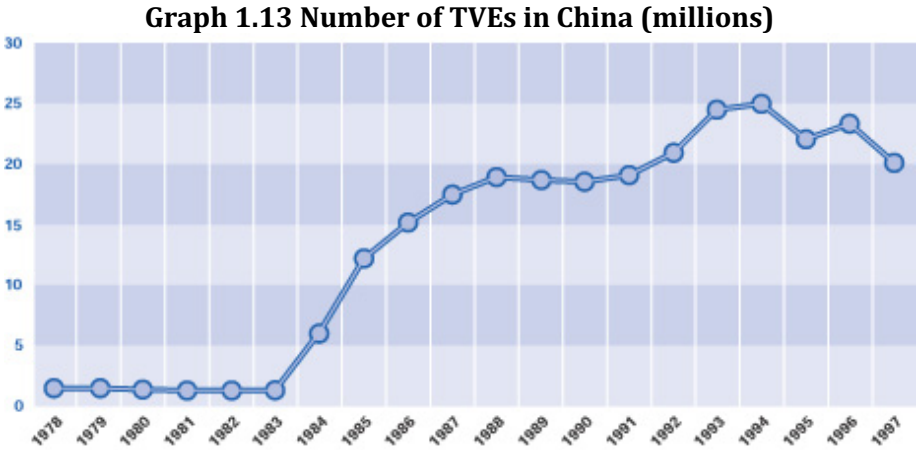
⁵¹ (Zeng, 2010)

Township and village enterprises

Township and village enterprises (乡镇企业 *Xiāngzhèn qǐyè* TVEs) played a significant role in China's economic progress.

TVEs are economic entities that are collectively owned by local residents in China's rural areas; in general, they are the property of local citizens, although rights of ownership are exercised on their behalf by town and village administrations. Profits from TVEs are a significant source of revenue for local governments. Some are large in size, but the majority are small and medium-sized businesses. TVEs are the evolution of commune and brigade-owned enterprises from the 1950s. However, until the mid-1980s, TVE exports were limited, before dramatically expanding.

In this chapter, I will attempt to identify the connections between changes in TVE output and exports and the government policies that may have caused them, in order to understand why these enterprises have been successful. As previously stated, the government developed coastal open cities in the late 1980s with more freedoms and tax incentives for foreign trade. This undoubtedly contributed to the growth of TVEs. Export-oriented TVEs had tremendous growth in the years that followed, as part of the shift from state-owned enterprises to more market-oriented institutions. TVE exports of \$5 billion constituted one-sixth of China's overall exports in 1986. In the same year, around 20,000 TVEs specialized in export manufacturing.



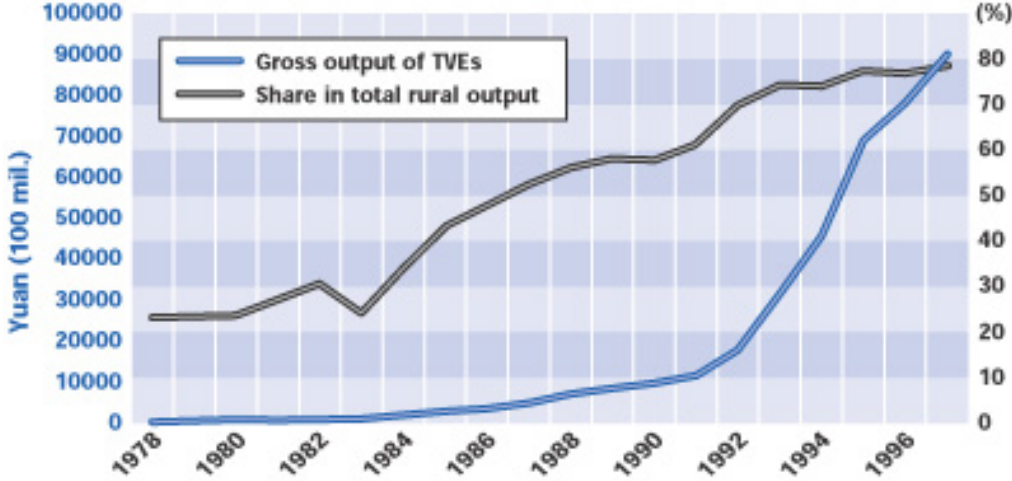
Sources: China Statistical Yearbook, Wei Zou 2003

Afterward, the role of TVEs in China's international commerce grew in importance. From 1987 to 1992, TVE exports and imports increased by an average of 60% each year. According to Harvie, their \$20 billion in exports in 1992 represented for one-quarter of China's overall exports. By the mid-1990s, about 80,000 TVEs were engaged in export-

oriented manufacturing, accounting for more than 40% of China's total exports and more than 30% of China's GDP⁵².

In 1978, 1.5 million TVEs employed 28.2 million workers, whereas by 1996, 23.4 million TVEs employed 135.1 million workers⁵³. In 1991, they accounted for 61 percent of overall industrial production, and their yearly average real growth rate from 1988 to 1999 was as high as 19 percent. In 1999, its exports were \$94 billion, accounting for 48% of total country exports. Over the ten-year period 1988-1999, their annual actual growth rate in exports was as high as 28 percent beating China's total export growth rate of roughly 13 percent. Their export mix has altered over time from primary and unskilled labor-intensive items to comparatively skilled labor-intensive products⁵⁴.

Table 1.14 Gross output of Chinese TVEs



Sources: China Statistical Yearbook, Wei Zou (Wei, 2003)

The causes for this rapid expansion are related to both the transitional economic policies of the reforms and specific characteristics of TVEs. We can identify four major factors:

- **Economic policies**

The establishment of coastal open cities, agricultural reforms, and the liberation of rural economies all contributed significantly to TVE expansion. Later, the deregulation of formerly state-controlled pricing eroded SOEs' competitive advantage, shifting foreign investors' attention to TVEs. The rapid growth of TVEs in rural areas has been one of the great successes of the economic reforms

⁵² (Harvie , 1999)
⁵³ (Dacosta & Carroll, 2001)
⁵⁴ (Fu & Balasubramanyam, 2003)

implemented by China in the 1980s and has played an important role in the transition from central planning to a more market-orientated economy⁵⁵

- **Regional-specific characteristics**

TVEs had a major contribution to the growth of Chinese exports and were leaders in rural economic growth, but their success was dependent on several unique traits that were not shared by all Chinese rural regions. Geographic advantages, a limited level of marketization, and policy assistance from local states are all characteristics⁵⁶. Geographic advantages result in greater access to resources, which benefited eastern coastal communities, which were in reality the economic leaders of the boom. Low market competition was required, and this, together with the assistance and backing of local government, aided the rapidly rising in number and production value.

- **Market competitiveness**

Many industries were dominated by SOEs under government protection, forcing TVEs to locate their enterprises in areas with substantial shortages or where SOEs had failed. This may appear to be a disadvantage at first, but it turned out to be one of the key reasons for their success. One of the most significant benefits was market competitiveness; most were tiny and autonomous in comparison to SOEs, and hence had the freedom to adjust swiftly to market developments. The agricultural reforms of 1978 were also crucial; the government aimed to discourage emigration from rural regions and encourage rural industrialization. To do this, rural industry taxation was kept low, which benefited TVEs significantly.

- **Distinguishing features**

Flexible and market-driven, they have a great degree of operational and management autonomy; they are far more outward-oriented than SOEs. As a result, they are far more efficient than equivalent SOEs. Even though they are typically small, businesses are competitive in worldwide marketplaces due to their product specifications and strong resource allocation skills. Because of their scale and customer-oriented strategy, they are also more responsive to market developments. They have taken advantage of China's endowments of cheap labor

⁵⁵ (Kung and Lin, 2007)

⁵⁶ (Wang, 2005)

and specialized in the production of labor or resource-intensive products such as textiles, clothing, food processing, and toys⁵⁷.

The TVEs had a great expansion and played an essential part in the country's economic growth, but it did not persist. They reported difficulties in the 1990s, and their previously extremely quick expansion slowed. The Asian financial crisis and consequent reduction in exports aggravated the situation, which was especially concerning for coastal areas that relied heavily on exports and foreign investment. They were under increasing pressure from more intensive competition, and collective TVEs had become so large and involved in so many operations that they were prohibitively expensive for local governments to control, therefore many turned to privatization.

According to Wei, "In addition to being criticized as capturing the market share of the large state-owned enterprises, wasting resources, creating pollution in rural areas, providing poor-quality products, distorting the market by rent-seeking activities, TVEs also suffered from a slowdown in growth rate and deterioration in main management indicators"⁵⁸.

1.2.5 Made in China 2025

China is undeniably a massive and internationally significant economy, but the leadership is well aware that it is not particularly technologically strong. According to Amighini⁵⁹, China only enters downstream phases of industry, mostly labor-intensive production and assembly lines, by assembling or licensing imported technological inputs. As a result, the value added of production that occurs within the country is rather low.

The "Made in China 2025" (中国制造 2025, *Zhōngguózhìzào èrlíng'èrwǔ, MIC 2025*) is a strategic development plan for the Chinese manufacturing industry, it states the importance of the manufacturing sector for China's economy as "the main body of the national economy, the foundation of a country, an instrument for rejuvenation, and the foundation of a strong country." Therefore "Made in China 2025" proposes to adhere to

⁵⁷ (Fu, 2004)

⁵⁸ (Wei, 2003)

⁵⁹ (Amighini, 2018)

the basic policy of "innovation-driven, quality-first, green development, structural optimization, and talent-oriented"⁶⁰.

China is not the only country that has undertaken strategic measures in the recent decade to boost its manufacturing sectors and strengthen its industrial standing. The United States has started a policy package focusing on "reindustrialization," while Japan has executed the "New Robot Strategy," with the goal of developing cooperative robots and autonomous factories. Britain's manufacturing industry is being revitalized under the "High-Value Manufacturing" strategy, while in 2013 Germany has launched "Industrie 4.0," which is more comparable to China's approach. The Chinese plan was inspired by Germany's "Industrie 4.0," and it attempts to modernize current industries via the use of new and developing technologies. It is overseen by China's Ministry of Industry and Information Technology (MIIT).

The MIC 2025 strategy will take regional differences and local governments into account. China's manufacturing sectors and output volumes vary greatly across the country, with certain industries being heavily concentrated within specific provinces. As a result, industrial transformation must adapt to local conditions, and a single plan may not be appropriate for the entire country⁶¹.

One of the issues that pushed for the execution of the MIC 2025 plan was the necessity to move away from the label of "factory of the world."

The program's goals are clear: shake off the label of "factory of the world" and become a manufacturing powerhouse in terms of both quality and quantity. To do so, China must reduce its production of low-tech, labor-intensive products and focus on innovation-driven manufacturing in high-tech areas⁶².

The plan specifies ten key sectors on which the emphasis will be placed, as well as nine strategic tasks to be completed within the specified time frame⁶³:

1. Improving manufacturing innovation;
2. Deep integration of information technology and industrialization;
3. Strengthening the foundations of the manufacturing industry;

⁶⁰ (观察者网, 2015)

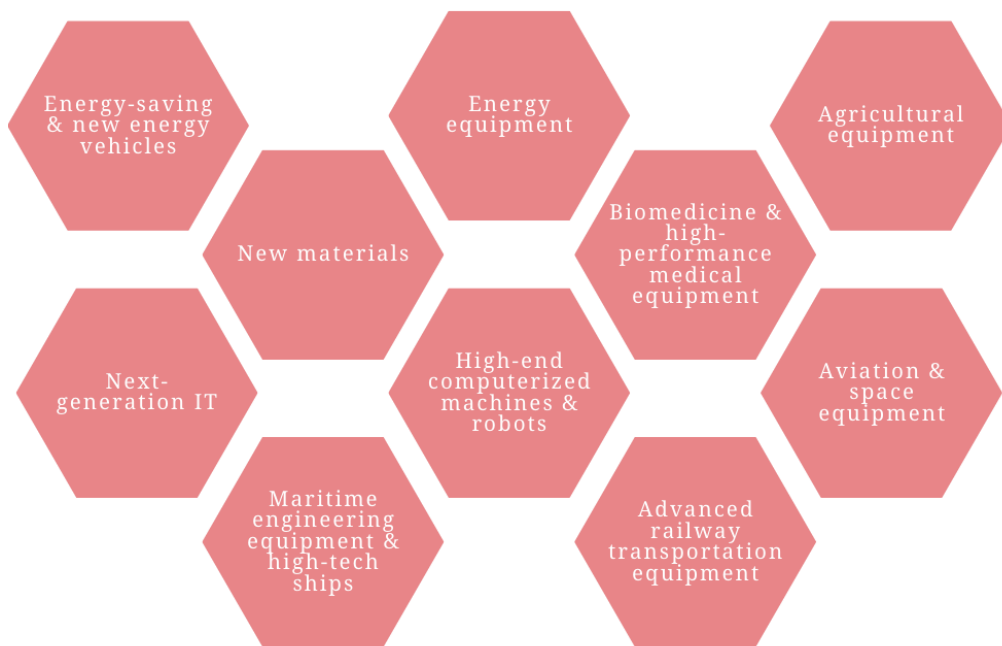
⁶¹ (Fasulo, 2018)

⁶² (周济, 2015)

⁶³ (Liu, 2018)

4. Fostering Chinese brands;
5. Enforcing green manufacturing;
6. Promoting breakthroughs in key sectors;
7. Restructuring the manufacturing industry;
8. Promoting service-oriented manufacturing and manufacturing-related service industries;
9. Internationalizing manufacturing

Table 1.4 Key sectors for "Made in China 2025"



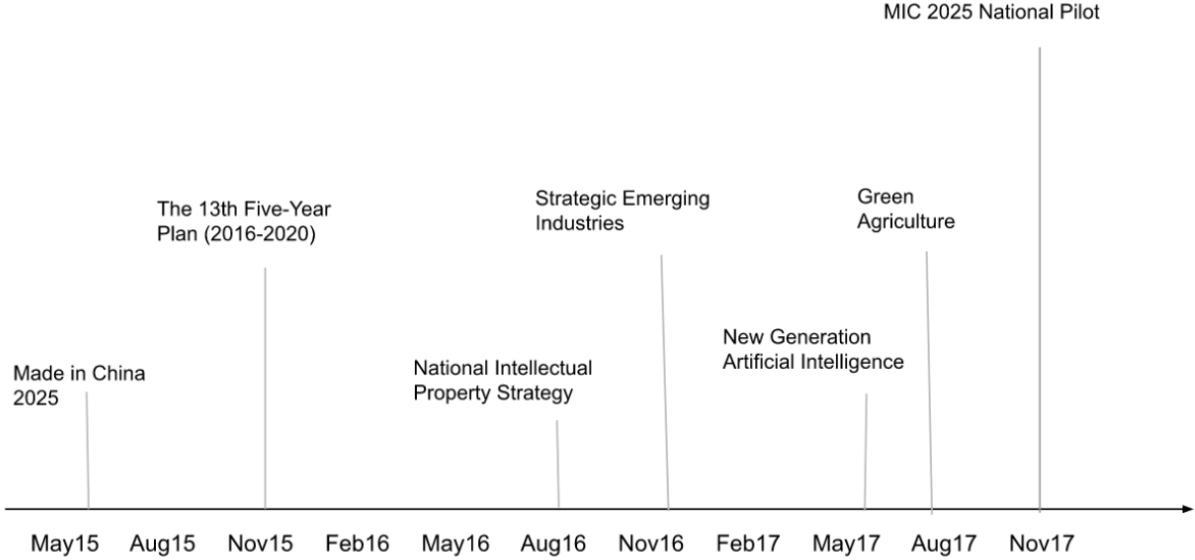
Sources: State Council, MERICS

Many policies and actions have been implemented by the government in order to establish the ideal atmosphere for the MIC 2025 strategy to succeed. The adoption of industrial credit policies with special support for key sectors, as well as financial support for enterprises investing in advanced manufacturing industries (such as the Advanced Manufacturing Investment Fund) and financial support for industrial firms to invest abroad, are among the most important.

In order to focus on the support for new industries, China will have to slowly abandon old, less profitable sectors of the economy. Subsidies, taxes, incentives, and low-interest loans

are gradually phased out for low-value-added industries, and labor-intensive sectors and firms will be forced to close and/or transfer, even overseas⁶⁴.

Graph 1.15 Timeline of MIC 2025 supporting policies, May 2015-November 2017



source: Liu, et al., 2022

The key policies in the first years following the announcement of the plan are listed in graph 1.15. The 13th Five-Year Plan, which covered social and economic development measures for the period 2016 to 2020, was announced in late 2015. The 13th plan highlights the importance of the Made in China 2025 strategy in establishing and upgrading modern industrial systems in China, it also specifies guidelines on how to implement it in Chinese manufacturing sectors⁶⁵. The government issued the "National Intellectual Property (IP) Strategic Plan" and the "Strategic Emerging Industries" plans in 2016. More comprehensive plans for specific sectors, such as artificial intelligence and green agriculture, were announced the following year. The Advanced Manufacturing Investment Fund was formed in July with the goal of providing financial assistance to enterprises in key sectors. The Ministry of Industry and Information Technology announced the first pilot demonstration city in Ningbo on August 18, 2016. As a result, the transition from planning to effective implementation of the "Made in China 2025" strategy has begun. In addition to Ningbo, 30 cities throughout the country sought to become pilot demonstration cities⁶⁶.

⁶⁴ (Perskaya, 2019)

⁶⁵ (Liu, et al., 2022)

⁶⁶ (侯云龙, 2016)

The government launched the "National Pilot and Demonstration Zones" in November 2017, with the goal of providing better policy assistance to the selected industries in terms of financing costs, tax benefits, land supply, and human capital investment⁶⁷.

The measures are still in effect, and we will not be able to completely comprehend the outcomes of the "Made in China 2025" plan until a few more years, but it is undeniably a drive for the Chinese industry to gain a global reputation as a high-quality and technical manufacturing force.

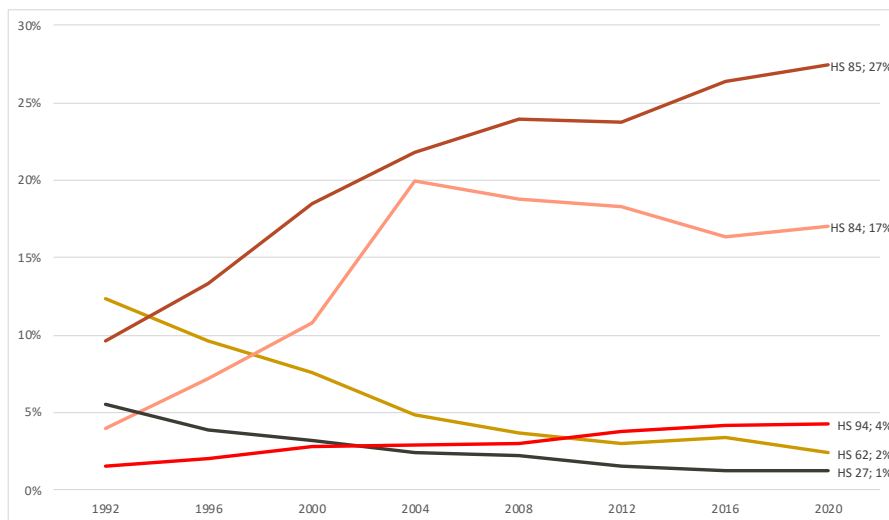
⁶⁷ (Liu, et al., 2022)

2. Main sectors of exports

As previously said, China's economy grew rapidly and impressively, but a closer examination of the data and statistics reveals that the development was not evenly dispersed across all economy's sectors. It is, in reality, concentrated in certain industries, with growth concentrated in specific items within those industries. To understand the causes that contributed to this expansion, we must first understand what contributed to the growth of the individual industries. In this chapter, I will examine in depth a few significant sectors and their top products in order to identify the policies and other variables that contributed to growth and how these sectors have changed over the years.

We can track the evolution and development of a few industries of particular interest that have played a big role in Chinese exports. China's export basket is particularly diversified as compared to other nations, and its technological component has been continuously rising over the past 30 years.

Graph 2.1 China's leading export categories



Source: UN Comtrade database

Since 1992, China's export structure has changed considerably. Whereas labor-intensive industries dominated in the early years of the export boom, capital-intensive sectors have grown substantially more prominent in subsequent years. According to Liu, the number of companies in upstream sectors (such as metals) has drastically decreased. At the same

time, the number of midstream enterprises has more than doubled (electrical machinery and equipment, and computer, communications, and other electronic equipment)⁶⁸.

The undervalued exchange rate was one of the measures implemented by the central government to sustain economic growth, and it most likely contributed to some extent, but experts believe that because the growth was concentrated in specific sectors, the exchange rate had a minor impact, while other factors played a larger role. WTO accession helped labor-intensive businesses such as garments, textiles, and furniture. The expiry of international accords that limited China's exports benefited the garment and textile sectors as well. Government subsidies mostly benefitted capital and energy-intensive sectors, notably iron and steel. Many industries benefited from SOE reform, which created a favorable climate for a sharp increase in productivity that could not be fully absorbed internally and hence flowed to exports⁶⁹.

The timeliness with which China joined key economic areas, such as high-tech, has undoubtedly had a significant influence on its success too.

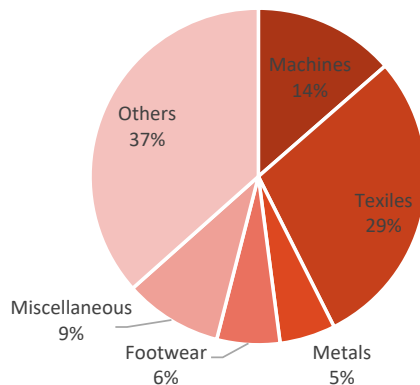
Table 2.1 Evolution of main export categories as percentage of total exports

	1992	2000	2020
Machines	14%	31%	47%
Textiles	29%	19%	10%
Metals	5%	6%	6%
Footwear	6%	6%	2%
Miscellaneous	9%	9%	7%
Other	37%	29%	28%

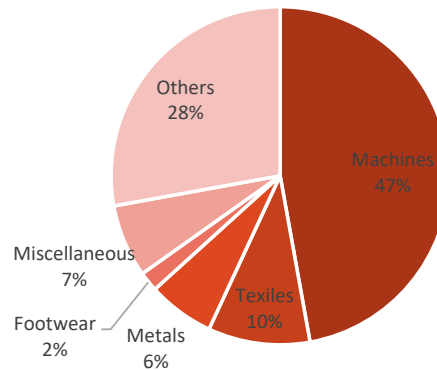
Table 2.1 and graphs 2.2 and 2.3 show the evolution in the share of total exports of the main product categories in the years 1992, 2000 and 2020, we can see which industries saw the most significant increase and which suffered a loss of share of total exports in a period of around three decades. The machinery industry appears to have grown the most, but other industries have seen notable changes as well.

⁶⁸ (Liu, 2018)
⁶⁹ (Berger & Martin, 2011)

**Graph 2.2 China's exports by category
1992**



**Graph 2.3 China's exports by category
2020**



To further understand the dramatic change in trade composition, the following chapter of this thesis will be divided into two sections. The first section will examine labor-intensive sectors, such as the iron and steel industry, and their variations in export value and importance in the overall economy, whereas the second section will analyze high-capital and high-technology sectors, focusing on machinery exports and high-tech exports and specific key products and their variation in the past decades. The order chosen is because labor-intensive sectors were the driving force of the initial industry boom of exports following China's entry into the international trade playfield, but its growth has since slowed while the capital and technology-intensive sectors grew in importance and export value. In particular, the importance of machinery exports has skyrocketed, as shown in graph 3.2, accounting for nearly half of the country's total export value in 2020.

Before delving into the key areas of Chinese exports, I'd like to provide some information on the data utilized in this chapter's research. All of the data in this chapter was obtained from the OEC World database⁷⁰ or the UN Comtrade ⁷¹ database and gathered and analyzed by me unless otherwise noted. Product codes from the harmonized system (HS) will be used to identify certain industries and products.

⁷⁰ (p. <https://oec.world/en/profile/country/chn>)

⁷¹ (p. <https://comtradeplus.un.org/>)

The Harmonized Commodity Description and Coding System (HS code) will be used to define the items and sectors that will be analyzed in this chapter. It is a worldwide product nomenclature developed by the World Customs Organization (WCO). It may be referred to as "Harmonized System" or simply "HS". It includes more than 5,000 commodity categories, each of which is identifiable by a six-digit number, is organized in a legal and logical framework, and is backed by well-defined criteria to ensure uniform classification⁷². According to the World Customs Organization, the system is utilized by more than 200 nations and economies, and it is fundamental for international trade. Over 98% of international trade products are categorized in terms of the HS. It is required in the process of importing and exporting items, and it is only via these codes that we can obtain correct data regarding export trends and values.

Because manufactured items account for 95% of all Chinese exports, the products under consideration will all be manufactured goods. China has 39 large industrial categories, 191 middle industrial categories, and 525 minor industrial categories and it's the only country that covers the whole industry sector⁷³. The manufacturing trade is both crucial and challenging. Manufactured goods are more complicated than basic commodities, hence the amount of technology and added value in a country's manufactured goods reflects the country's competitiveness. As a result, it is noteworthy to see how the structure and industry distribution of Chinese manufacturing has evolved.

⁷² (Anon., n.d.)

⁷³ (Liu, 2018)

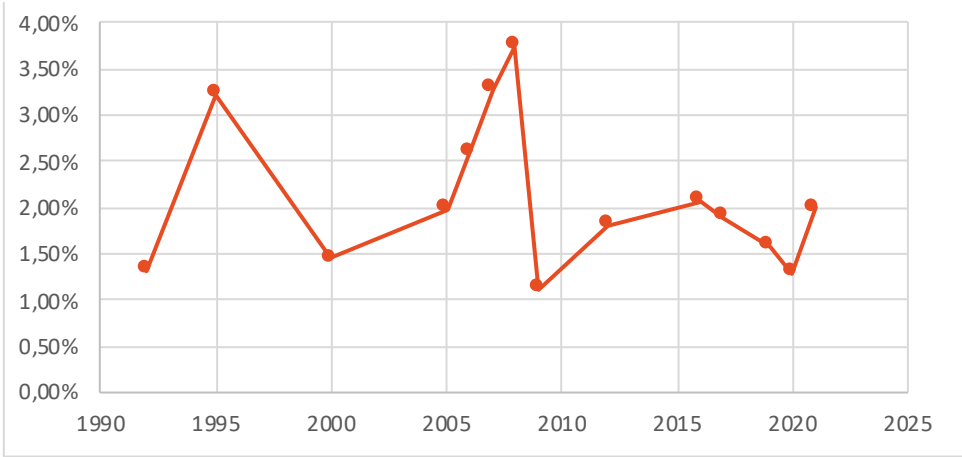
2.1 Labor intensive, low technology industries

Traditionally, Chinese exports have been centered on labor-intensive manufactured products such as apparel, footwear, and toys, products long characterized as representative examples of Chinese exports and often tied to the label "Made in China". Instead, the percentage of Chinese exports of more complex manufactured goods has increased significantly in recent years, with exports of Machinery and Transport Equipment rising significantly. This is a fairly common occurrence in the economies of developing countries, which are often able to focus on promoting labor-intensive industries and exports first due to their low capital stock and relatively abundant labor force, while only being able to move up the value chain years later, after having already established a strong industry system.

2.1.1 The iron and steel industry

Some industries followed the usual development pattern of a developing country expanding its economy, while others saw a one-of-a-kind boom. The iron and steel industry is an example of unanticipated expansion.

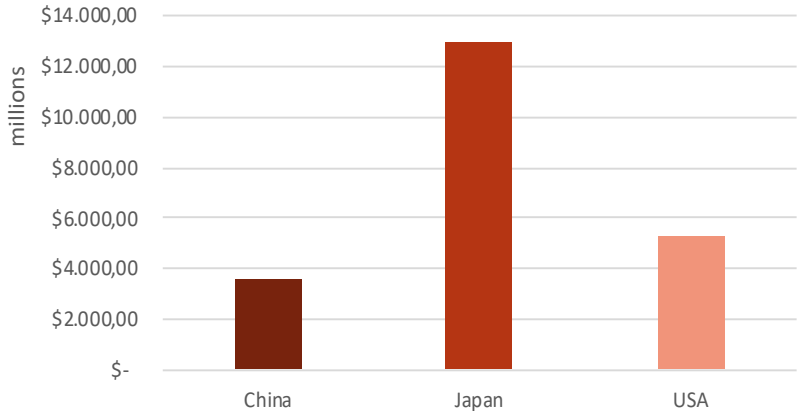
Graph 2.4 Exports of iron and steel (HS 72) as share of total Chinese exports



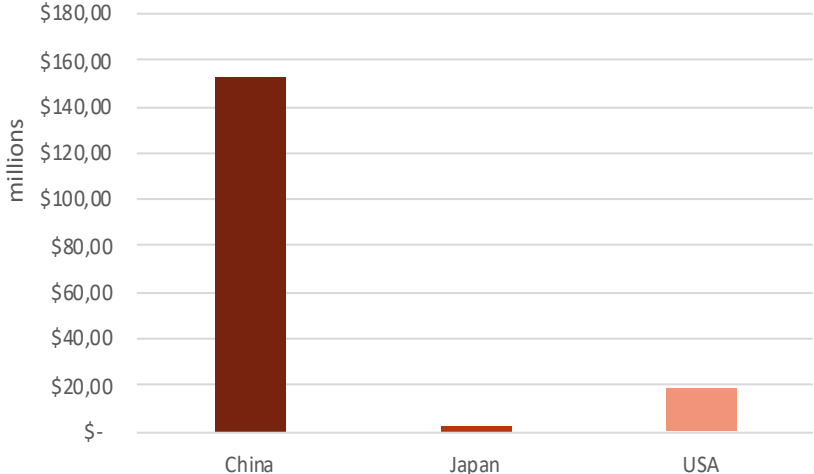
China's iron and steel industry has been developing rapidly since 1978, when the country adopted the economic reform policy and opened its doors to the world. In comparison to the typical expansion of the sector in developing countries, China's iron and steel industry has followed an unusual path. Since provincial self-sufficiency was a main focus and heavily promoted, most provinces have been involved in all stages of steel production, and rather than specializing in certain production stages, many firms immediately began producing a wide range of goods, from pig iron to crude steel to completed steel.

In 1997, the country had 28 steel facilities capable of manufacturing 1 million or more tonnes of crude steel, as well as a substantial number of small and medium-sized iron and steel firms⁷⁴. Prior to 1979, the Ministry of Metallurgical Sector (MMI) strictly regulated China's metal industry, and state-owned businesses dominated the entire industry. It's only after the reform that other kinds of ownership have been allowed and supported, following which the non-state sector has progressively increased. A succession of reform programs have been enacted in the sector since the late 1970s. These include profit distribution method reform; provision of incentives to increase productivity; management system reform to provide firms greater autonomy; and market reform, primarily pricing reform⁷⁵.

Graph 2.5 Exports of iron and steel (HS 72) in 2000



Graph 2.6 Exports of steel (HS 7206) in 2000



⁷⁴ (UNIT, East Asia Analytical, 1995)

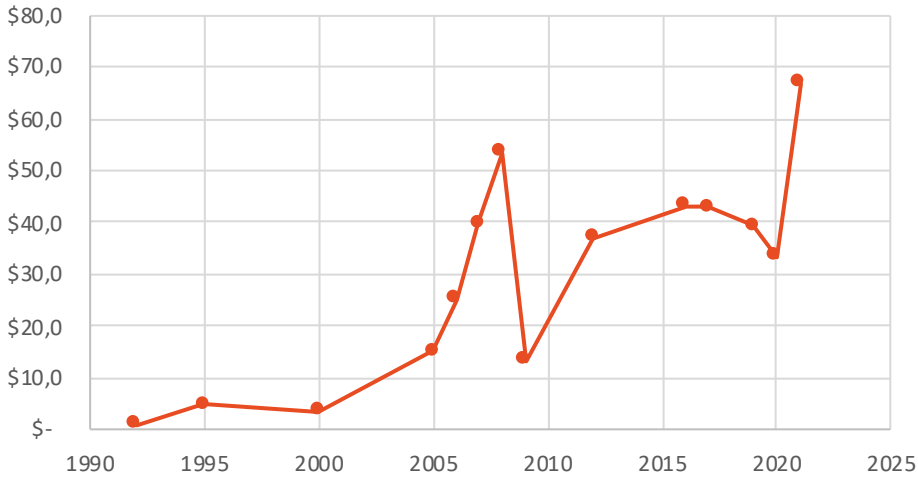
⁷⁵ (Ma, et al., 2002)

Graphs 2.5 and 2.6 show that China was the top producer of steel (HS Code 7206) in 2000, with \$153 million, however, the iron and steel (HS 72) sector only exported \$3.6 billion, compared to the leading countries; Japan (\$13 billion) and the United States (\$5 billion). By 2005, the sector had grown to the point that it was exporting \$15 billion, accounting for 2% of overall exports, before then China had been a steel importing country, meaning that the annual volume of import exceeded its export.

By 2008, iron and steel output had skyrocketed, reaching \$ 53,5 billion and 3.7% of total exports, well outpacing Japan (\$39 billion) and the United States (\$23.8 billion), both of which had seen severe declines in steel production.

This circumstance raises the issue of how the primary producers of iron and steel saw a considerable drop while a developing country like China was able to increase exports by 1390% in only 8 years.

Graph 2.7 Exports of Iron and Steel (HS 72) in billions



We can attempt to find an answer by determining which of the changes in economic policies that occurred during that time period could best benefit the heavy industry sector, specifically iron and steel manufacturing.

According to Berger and Martin's trade data research, the three primary explanations are state control and subsidization of energy costs, the reform of state-owned enterprises (SOEs), and the domestic demand's incapacity to absorb output increases⁷⁶.

Firstly, energy costs were strictly regulated and extensively subsidized by the government. This is applicable to any industry, but especially to metal manufacturing.

⁷⁶ (Berger & Martin, 2011)

Steel manufacturing is one of the major industrial energy users in terms of energy per dollar of value added. According to IEA estimates, the steel industry's energy consumption accounted for 17% of overall industrial energy consumption in 2017⁷⁷. Being able to increase output while keeping prices down is a big advantage for Chinese businesses.

Secondly, SOEs were the most common form of firm in the heavy industry, and they had several advantages. Not only was the cost of capital extremely cheap, but they also had preferential access to bank loans at low interest rates due to support from the government. These firms' position was already privileged at the time, and the reforms provided an additional boost to growth. The reform of state-owned companies (SOEs) that began in the 1990s was aimed at increasing efficiency and cutting costs through resource allocation. By 2008, the SOEs had turned from money-losers that relied on government assistance to profitable firms.

The first two factors grew the industry of iron and steel, increasing production substantially, domestic demand could not absorb this massive production growth that turned towards export.

Iron and steel production growth came to a halt in 2009, with export value falling from \$53.5 billion in 2008 to \$13.5 billion in 2009, a 75% drop caused by both global and domestic factors. According to He Ji-Cheng, the causes behind the quick decline in China's iron and steel industries include the deterioration of the export environment and the fall in domestic demand caused by the global financial crisis⁷⁸.

The global financial crisis of 2008 had a significant impact globally, including on China's iron and steel sector. Until the second quarter of 2008, the industry was able to maintain consistent growth, but in the third quarter of 2008, it began to deteriorate significantly. The worldwide crisis began with the U.S. financial crisis and has had a significant negative influence on the export environment; to this, rising iron and steel prices have been added. Moreover, the depreciation of the US dollar raised export prices, and China reduced the export rebate rate. The majority of domestic steel demand came from the low-value-added processing industry, which was heavily damaged by the crisis and was unable to afford the suddenly high steel costs. This resulted in a decrease in steel output and, as a

⁷⁷ (Kun, et al., 2020)

⁷⁸ (He, 2011)

result, a decrease in iron and steel exports. The government's prompt response was able to minimize the damage to the heavy industry due to certain crucial measures implemented at the time, aimed at stimulating domestic demand, managing economic decline, and fostering stable and rapid economic growth⁷⁹.

The revitalization plans for ten key industries (including iron and steel) and the 4 trillion RMB economic stimulus plan, commonly known as the "Ten measures to further enhance domestic demand," were particularly significant. It was launched in November 2008 and focused on infrastructure projects, which offered a large market for the iron and steel industry's revival. These measures function effectively and quickly, allowing the industry to survive and begin growing again, thanks to increased export rebates, technological upgrading (reduced loan interest), steel production purchase and reserves, and firm mergers and reorganization.

The industry grew steadily throughout the years, hovering around 1% to 2% of overall export value, but it wasn't until 2021 that it reached again the export value of 2008. Consumption lagged behind production growth, resulting in overstock in the market; Chinese steel prices have been decreasing since 2012. Prior to 2009, about half of China's iron and steel exports were to wealthy nations such as the United States, but not to low- and medium-income economies such as member states of the Association of Southeast Asian Nations (ASEAN)⁸⁰, which is now China's largest steel market.

Finally, by studying the specific history of the Chinese iron and steel sector, we can observe how much government policies influenced it and how global influences played a significant role in its decline.

According to the International Trade Administration report on Chinese steel exports: "Throughout the last decade, China has maintained a trade surplus in steel products. After a brief decline in exports in 2009, due to the global recession, China's exports increased every year through 2015. Since 2016, Chinese exports have trended down, but are still up 169.7 percent for the period from 2009 to 2019"⁸¹.

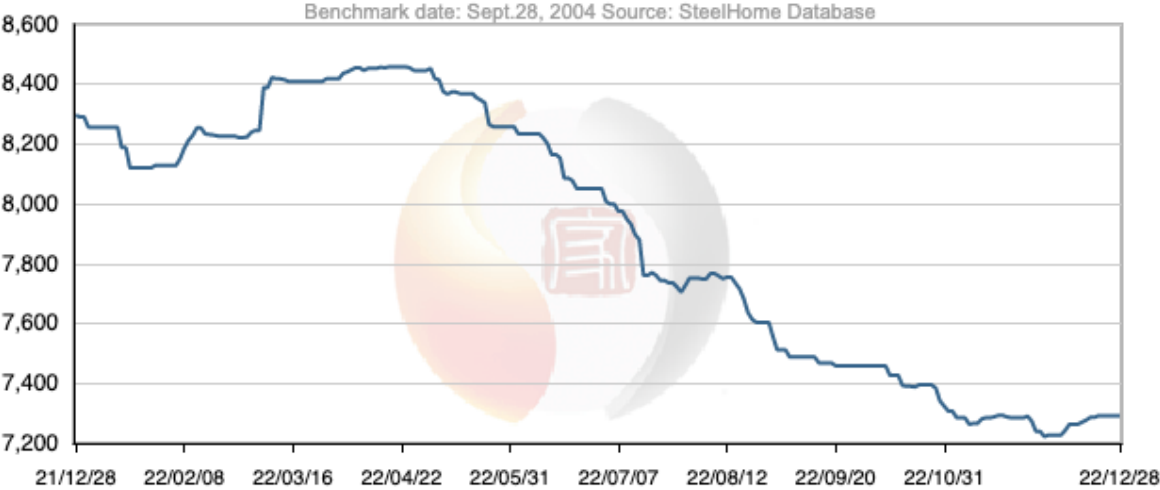
⁷⁹ (He, 2011)

⁸⁰ The Association of Southeast Asian Nations (ASEAN) is a group of 10 nations in Southeast Asia that aims at promoting political and economic growth and cooperation among its members. It includes Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

⁸¹ (International Trade Administration, 2020)

During a speech at the Tianjin International Tube Industry Expo in Tianjin, Han Weidong, vice president of leading Chinese steel pipe maker Youfa Group, stated that the steel industry in China has had some very productive and successful years, but that in 2022, the industry will enter a new era of restraint and possible losses due to excess supply and declining demand⁸².

Graph 2.7 China Steel Price Index (SHCNSI) in RMB/t



Source: Steelhome.cn

As demonstrated in graph 2.7, an oversupplied steel market causes a sharp drop in steel prices, which has a negative impact on the sector's earnings. Steel prices fall significantly in 2022, falling from above 8,400 RMB/t to 7,200 RMB/t in just the last eight months of the year. Steel consumption is forecast to fall to roughly 1 billion tonnes this year, which is significantly lower than the actual manufacturing capacity of around 1.3 billion tonnes. Oversupply is expected to become the sector's major problem if demand continues to fall.

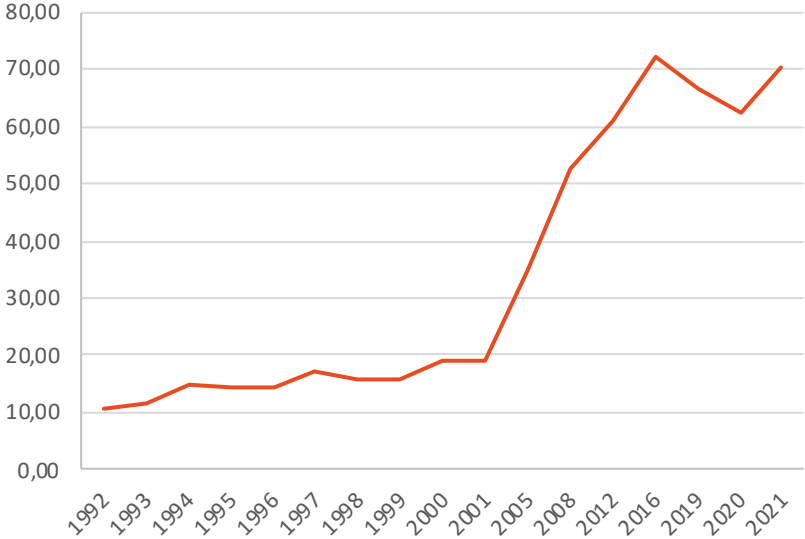
2.1.2 The apparel and clothing accessories industry

The clothing industry was a pioneer in the export boom of China's economic liberalization, and it has seen tremendous changes in recent decades. As demonstrated by Yang and Zhong, textiles and apparel are among the first manufactured items produced by an industrializing economy. They were crucial in the early stages of industrialization in the United Kingdom, parts of North America, and Japan, as well as, more recently, in the export-oriented rise of East Asian countries⁸³.

⁸² (Zhang, 2022)
⁸³ (Yang & Zhong , 1998)

This is due to the relative ease of entry into this sector; it is a labor-intensive sector with relatively low skill and technological requirements. It is hardly surprising, then, that following economic reforms, this industry was among the first to experience tremendous development in both output and exports.

Graph 2.8 Exports of articles of apparel and clothing accessories (HS 62), in \$ billion



China was a big textile exporter in 1950, but inward-looking policies under central planning gradually eroded China's market dominance⁸⁴. It wasn't until the reforms began that Chinese textile exports became important. Economic changes starting in the late 1970s provided a major push to the persistent expansion of textile and garment exports; clothing manufacturing began to rise at a 14% annual pace from 1978 to 2000⁸⁵. China became the world's top clothing exporter in 1994 with a value of export of \$15 billion. Growth slowed in the late 1990s, when China showed signs of export diversification, at the expense of textiles and garments. The value of exports continued to rise, but their percentage of overall exports fell sharply. After 2000, the emphasis shifted to value-added and brand cultivation. The country's entry into the global market following its WTO membership, rather than focusing just on assembly and production, Chinese garment manufacturers choose to focus on adding value to their products through unique design, raw material research, and network development.

It is clear that national export-oriented policies drove the sector's rise, but let's dive deeper into the details of how the clothing sector's exports developed.

⁸⁴ (Yang, 1999)
⁸⁵ (Zhang, et al., 2015)

Textile and clothing manufacturers gained mostly from the expiration of restrictive trade agreements and China's admission to the World Trade Organization in 2001. Prior to this, despite having a comparative advantage in the industry due to its large pool of low-skill workers, China faced exorbitant tariffs and restrictive quotas; also, China was constrained more than any other nation by these accords. Until 2005, Chinese clothing and textile exports were constrained by a series of increasingly less restrictive international agreements—the Multifiber Arrangement (MFA, until 1995) and, later, the Agreement on Textiles and Clothing (ATC)⁸⁶. As the agreements got less stringent, and they eventually ceased to exist, China was able to capitalize on its natural comparative advantage, and textile and clothing export growth rose rapidly.

Before 1995, the textile and apparel industry was the only one not managed by the General Agreement on Tariffs and Trade (GATT); the majority of its international trade was instead governed by the MFA from 1974 and 1994, which set quotas on the amount that developing countries may export to developed countries. The MFA restrictions limited the exports of the most competitive providers, benefiting small nations while penalizing the world's largest exporters, such as China⁸⁷.

The Agreement on Textiles and Apparel (ATC) entered into force in 1995 as part of the WTO arrangement (the Uruguay Round Agreement), with the goal of putting the textile and clothing industries under the jurisdiction of GATT's regulations (including the nondiscrimination rule that would make it impossible to favor some exporters over others). Countries had a 10-year timeframe between 1995 and January 1, 2005, to adapt their systems and migrate to GATT regulations. Because China was one of the most penalized countries, it stood to benefit the most from the abolition of quotas⁸⁸.

Table 2.2 Textiles and Clothing Exports before and after the expiration of MFA quotas

Year	Chinese T&C exports	Total global T&C exports	China's share of global T&C exports
1995	\$14.3 billion	\$98.1 billion	15%
2001	\$18.9 billion	\$110 billion	17%
2005	\$35.0 billion	\$152 billion	23%

⁸⁶ (Brambilla, et al., 2009)
⁸⁷ (Vinaye & Harshana , 2015)
⁸⁸ (Vinaye & Harshana , 2015)

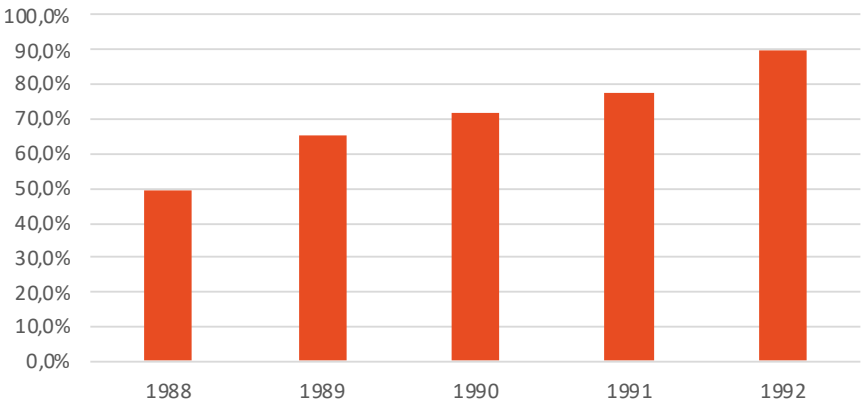
Table 2.2 clearly shows how the expiration of the MFA quotas positively impacted both China's export value in the sector and its share of global exports. In just 10 years, Chinese textile and clothing exports increased from \$14,3 billion to \$35,0 billion, a nearly \$21 billion rise, and while worldwide industry exports expanded significantly, China's importance increased as well, with its share increasing from 15% to 23%.

A major reason behind the sector's impressive growth can certainly be found in the termination of restrictive international agreements, but other factors played important roles too.

Changes in the ownership structure of Chinese manufacturing enterprises are another element that has contributed to the growth in clothing export. There are two sides to these changes: one is a move toward FIEs (caused by an increase in foreign direct investments as a result of market-friendly policies aimed at attracting foreign investors), and the other is the opening up of the rural economy (leading to the rise of township and village enterprises). The changes in ownership structure indicate that China's textile industry is swiftly transitioning to a completely competitive market, with foreign investors and private entrepreneurs progressively becoming the sector's dominant players. Previously, the State Sector controlled China's textile and garment industry.

With the deregulation of the rural economy, township and village enterprises (TVEs) began to play a growing role in the textile and garment sectors. Their proportion of national textile and clothing output more than tripled between the reforms and the mid-1990s. TVEs accounted for 61% of overall textile output and 98% of garment output by 1996⁸⁹.

Graph 2.9 Clothing industry as share of total rural industry exports

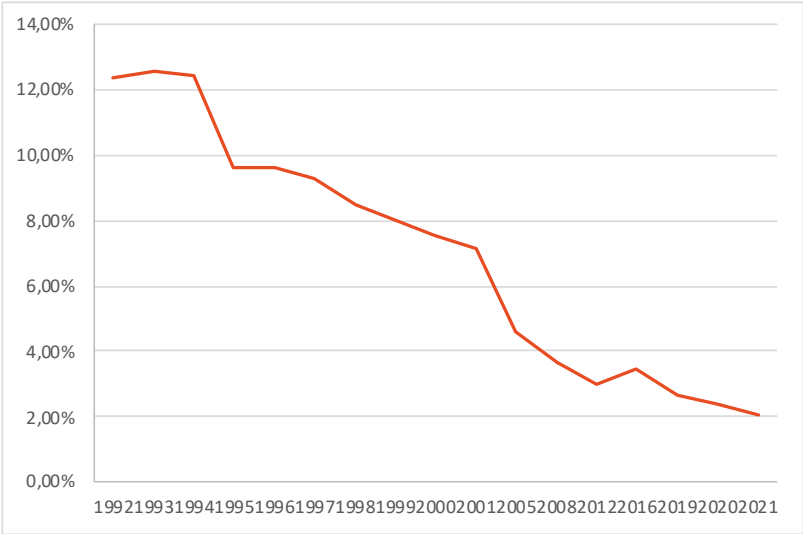


Source data: (Yang, 1999) (Dacosta & Carroll, 2001)

⁸⁹ (Yang, 1999)

Because textile and garment manufacturing is a labor-intensive business, the low wage costs in rural China made TVEs more convenient than SOEs, which were often built-in urban areas with higher wage costs. Furthermore, because TVEs are less controlled, they are more accountable for their own management and more adaptable to market demand. Because of these characteristics, TVEs have dominated China's labor-intensive manufacturing exports. For example, TVEs produced 90% of China's garment exports in 1992⁹⁰.

Graph 2.10 Share of total exports (HS 62)



In 1993, the value of exports was \$11.5 billion, accounting for 12.58% of overall exports; by 2005, the value had increased to \$35 billion, but its share had dropped to 4.60%. The annual value of exports increased by 500% between 1993 and 2021, reaching \$70 billion, although its proportion is currently just 2,08%. How did the sector go from being one of the export leaders to losing so much of its share of exports?

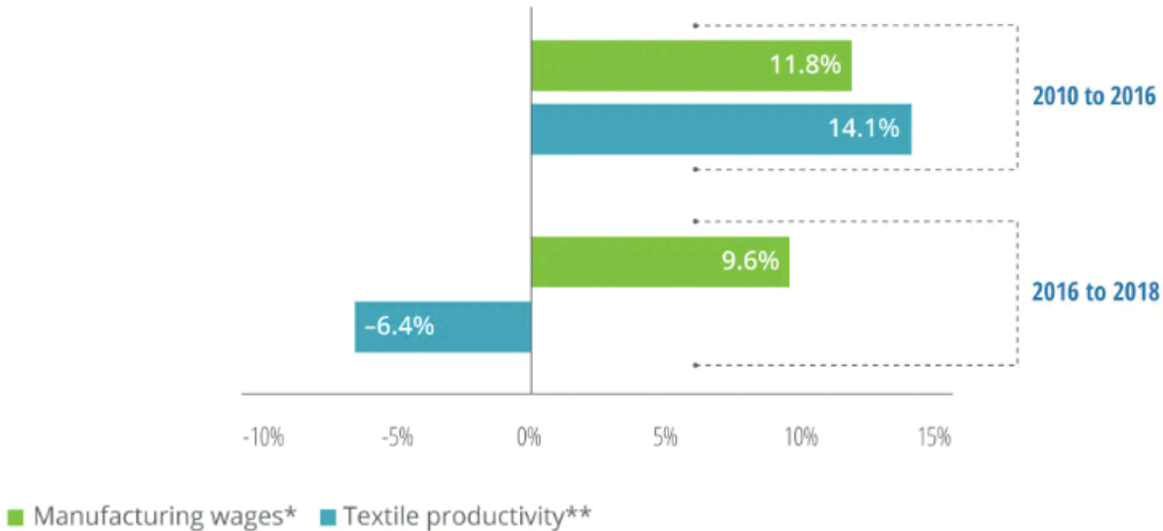
The primary drivers of the decrease in the importance of the sector are two: growing production costs, and structural change and diversification of exports.

Because of growing labor, raw material, and land prices in China, the clothing industry is progressively shifting manufacturing to less developed nations such as Bangladesh, Vietnam, and Myanmar to save money and get preferential trade access. The supply and prices of raw materials are the factors that most influence the international competitiveness of the Chinese textile and clothing industry. In recent years, a shortage of domestic raw materials and long-term import restrictions on chemical fibers have put great pressure on Chinese manufacturers.

⁹⁰ (Yang, 1999)

Another aspect that has contributed to the country's comparative advantage is cheap labor, which has been decreasing in recent years⁹¹. The average yearly salary in Chinese manufacturing industries has been rising, and rising labor costs are pushing international manufacturers away from China and toward other countries such as Vietnam and Bangladesh, just as they were pushed toward China after the implementation of the Open-door policy. This is a relatively frequent progression in these industries in developing countries, but China showed a unique ability to withstand pressure and continue to export labor-intensive commodities for longer than predicted given the circumstances, the main reason is without doubt owing to productivity growth.

Graph 2.11 China’s manufacturing wages and productivity annual growth



Sources: Deloitte Insights, (Wolf, 2020)

Graph 2.11 shows that while manufacturing wages in the textile sector increased significantly between 2010 and 2016, this was offset by an annual rise in productivity of more than 14%, allowing the industry to continue earning profits by exporting manufactured goods. Although this worked for a while, it finally caught up with China, and between 2016 and 2018, salaries continued to rise while productivity fell by -6.4% yearly, causing a crisis in the sector that resulted in China losing share of global apparel and clothing accessory exports⁹².

This situation has contributed to China’s structural shift away from labor-intensive sectors and toward capital- and technology-intensive ones.

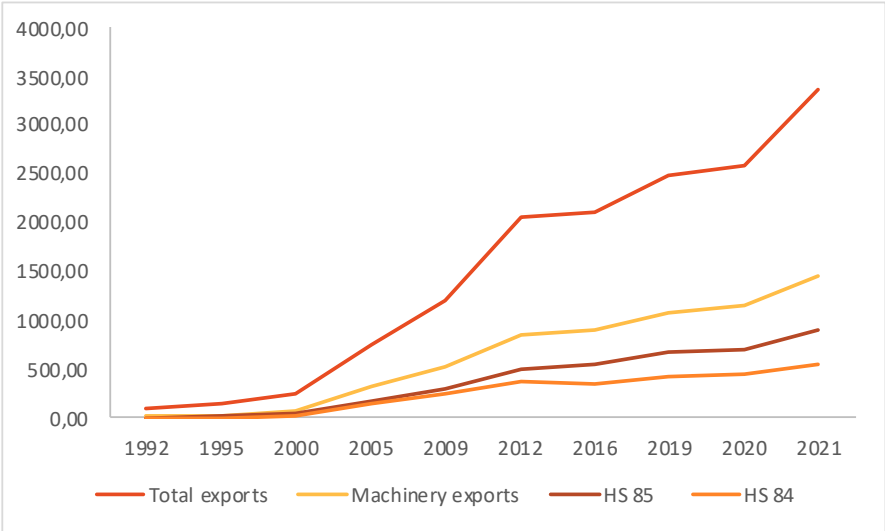
⁹¹ (Zhijie Guan, 2018)
⁹² (Wolf, 2020)

2.2 Machinery exports

As stated previously, the manufacturing and processing sector has been developing rapidly since the 1980s as a result of the expansion of the international division of labor and China’s economic reform. Manufacturing increased rapidly during the initial phase of international trade following the Open-Door policy, but most exports were centered in labor-intensive industries such as metals and textiles. Meanwhile, in the 1990s, China began a new phase in which it turned away from traditional exports and began emphasizing machinery and high-tech exports.

Machinery and electrical equipment are relatively more capital-, knowledge-, and technology-intensive industries that have grown faster than other industry sectors. They have quickly become the leading categories of Chinese exports, with Chinese manufactured products entering international markets and gaining a large share of global exports, which lead to Chinese companies such as Huawei and Lenovo becoming global leaders⁹³. Machinery is section 16 of the harmonized system, and it comprises two 2-digits categories: 84 and 85. It is of great importance both worldwide and in terms of the Chinese economy. It was the most traded category globally in 2020 (27.5% of total worldwide commerce) and the overall world trade was \$4.61 trillion, with China being the biggest exporter (\$1.26 trillion).

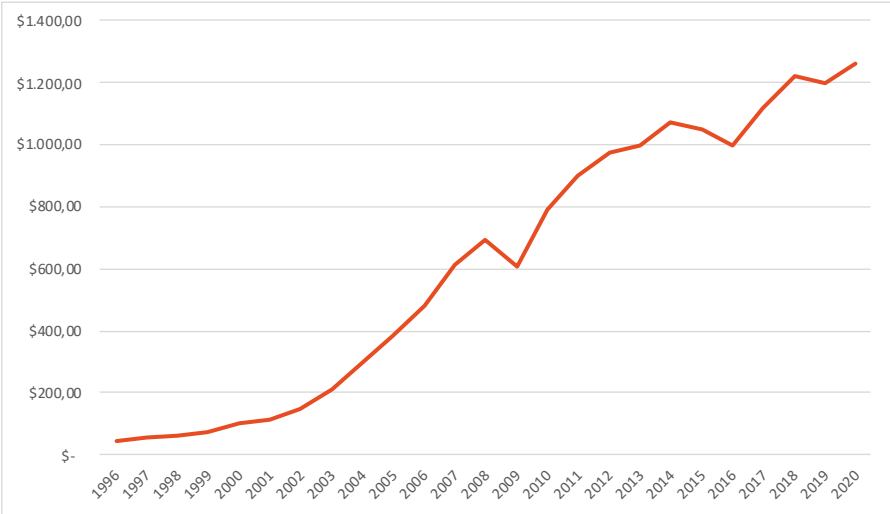
Graph 2.12 China’s machinery exports and total exports 1992-2021 (in \$ billion)



⁹³ (Xie & Zheng, 2019)

Graph 2.12 shows that machinery exports, made up of Machinery (HS 84) and Electrical Machinery (HS 85), have seen rapid expansion and are undoubtedly the most important exporting sector in the overall exports in China. They have been a major driving factor in the rise of Chinese exports throughout this timeframe. They accounted for 18% of total exports in 1990, growing to 30% in 1995, surpassing textiles and becoming the leading category of exports with the highest trade volume in China⁹⁴. Starting from 2000 its importance grew and in 2021 it accounted for 43% of total Chinese exports.

Graph 2.13 China's export value of Machinery (in \$ billion)



Looking more closely at the statistics on Machinery exports, we see that there has been significant development, but there have been some periods of decline. In particular, table 2.13 shows two periods of crisis for the industry, which correspond to the global economic crises of 2008 and 2016.

As with much of China's industry, the sector experienced rapid expansion following China's entry into the WTO in 2001. Joining the WTO, China's participation in the international trade system has increased significantly, the scale of both imports and exports of mechanical and electrical products has increased substantially. The export volume of various mechanical and electrical products ranks first in the world in the following years, and the trade balance also turned from a deficit to a surplus.

⁹⁴ (Berger & Martin, 2011)

Between 2000 and 2007, machinery exports accounted for over half of Chinese export growth⁹⁵. The 2008 global financial crisis had an impact on the Chinese economy as well, particularly in industries that rely heavily on other nations, such as exports. The United States was the second largest importer of Chinese machinery in 2007, and they were the most hit by the global crisis, which had a detrimental impact on Chinese exports.

The export value fell in 2009, but quickly rebounded and continued to expand at a rapid pace in subsequent years. However, beginning in 2014, it began to have some difficulties, and development slowed for a couple of years before recovering.

According to Lin⁹⁶, there are several causes for this situation.

- With growing labor costs and currency rates, China's competitive edge in mechanical and electrical industries has rapidly eroded.
- The industry relies on labor resources and cost advantage, its biggest advantage in the global market being price competition, but this has led to international consumers viewing Chinese products as cheap goods incapable of meeting the requirements of developed countries
- Lack of core technology and independent innovation ability
- An overcentralized export market on the United States and the European Union, the export market concentration in these nations is relatively high, resulting in an overdependence on only a few countries. This raises worries about the sector's stability; if one of these nations has an economic downturn, the impacts will be felt by China too⁹⁷.

In 2015, the “Made in China 2025” plan was first proposed, with the goal of promoting the upgrading of the manufacturing industry. Manufacturing sectors such as high-tech and machinery and equipment were included as key development areas.

Eventually, the mechanical and electrical goods industry rebounded and continued to develop, and China has become the world's largest exporter. China's export volume reached 1057.3 billion US dollars in 2016, accounting for 16.2% of total global exports⁹⁸. According to data, it accounted for 58.43% of China's overall export value in 2017, while conventional labor-intensive products accounted for 20.12%.

⁹⁵ (Berger & Martin, 2011)

⁹⁶ (Lin, 2015)

⁹⁷ (Lin, 2015)

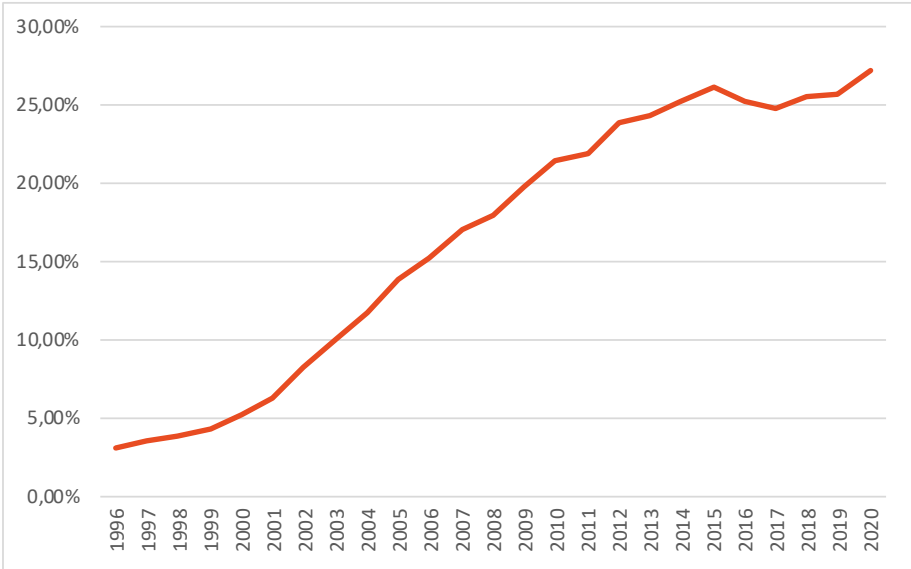
⁹⁸ (Xie & Zheng, 2019)

Despite the impact of Sino-US trade tensions, China's mechanical and electrical product output climbed in 2019, accounting for 58.43% of total exports. Exports of high-quality, high-tech, and high-value-added items, in particular⁹⁹.

Between 1997 and 2020, China's machinery exports increased by \$1.2 trillion, with an increase of over 2200%. Broadcasting equipment, computers and integrated circuits accounted for the majority of the increase in Chinese machinery exports.

The economic measures implemented to encourage this specialized industry (such as research parks), along with favorable global conditions, ensured the success of Chinese high-tech exports. In the first decade of the 2000s, worldwide demand surged, as did China's internal demand; this climate, along with cheap production costs and an increasing attractiveness of foreign direct investments, gave China an edge in the high-tech industry.

Graph 2.14 China's share of global Machinery exports



When compared to parts and components, the share of final products in machinery exports is rather high¹⁰⁰. This pattern is consistent with China's reputation as the “Factory of the World” following its rapid manufacturing boom, since Chinese enterprises mostly import intermediate goods and components, which are then assembled and exported.

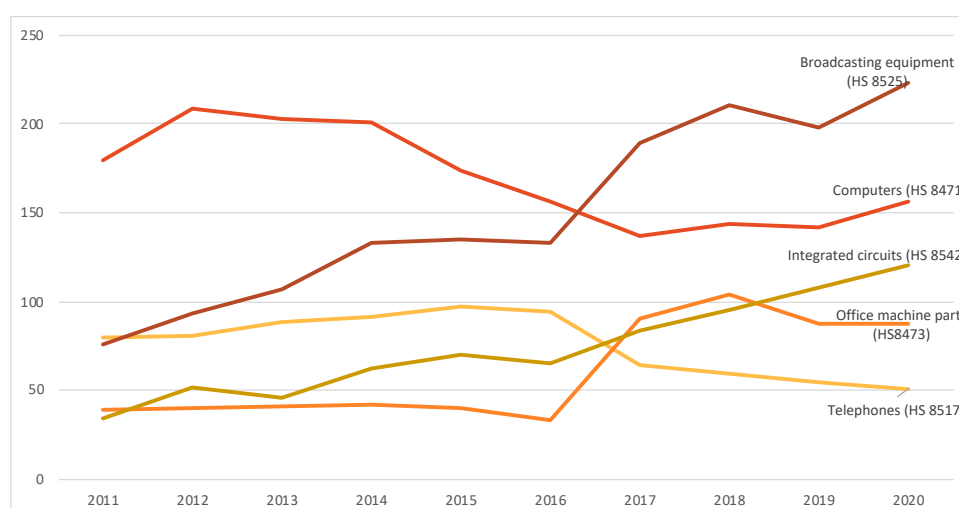
⁹⁹ (Li & Yang, 2022)

¹⁰⁰ (Obashi & Fukunary, 2016)

In the two HS84 and HS85 categories, certain items accounted for a greater share of the rise and export value than others. In 2000, with a total value of \$11 billion and 4.23% of total exports, the 4-digits product category with the highest share of exports was “Automatic data-processing machines and units thereof” (HS 8471), which includes computers (847130), with the main destinations being the United States (35.6%), Hong Kong (13.3%), and the Netherlands (11.5%). By 2005, HS 8471 had achieved 10.01% of total exports with \$76.3 billion; the main destinations and proportions remained stable; shipments to the United States (28.5%), Hong Kong (14.9%), and the Netherlands (11.7%). In the years following, the sector has continued to develop in terms of export value, but its percentage of overall exports has gradually declined, reaching 6.27% in 2017 and being surpassed by broadcasting equipment (HS 8525, that in 2000 was just 1.01% of total exports)¹⁰¹.

When looking at the 8-digit categories, it becomes clear that the rise of machinery exports was dominated by four products: mobile phones, liquid crystal displays (LCDs), integrated electronic circuits, and laptops, which accounted for more than a third of the growth. In the next sections of this chapter, I will examine several of the most relevant categories in depth.

Table 2.15 Top exporting machinery categories (2011-2020, in \$ billion)



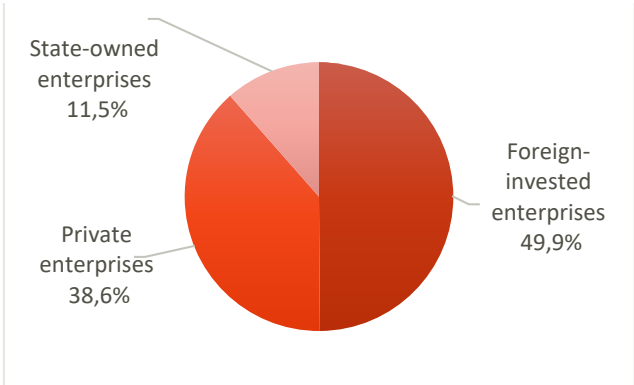
Looking at the data from table 2.15, we can examine the trend of the key items in this category and their relevance in the entire industrial economy by looking at the top

¹⁰¹ (OEC World, n.d.)

exporting 4-digit subsectors. Computers (HS 8471) with \$180 billion, Telephones (HS 8517) with \$80.3 billion, and broadcasting equipment (HS 8525) with \$75.5 billion were the world's most traded machines subsectors in 2011. In 2012, broadcasting equipment overtook telephones with \$93.3 billion. In 2017, broadcasting equipment accounted for \$189 billion, accounting for 16.9% of machine exports, followed by computers at \$137 billion and office machine parts at \$90.3 billion. By 2020, integrated circuits had surpassed office machine components. Hong Kong and the United States have been and continue to be the two largest importers of Chinese machinery.

According to the EU SME Center, almost half of the companies responsible for China's machinery are foreign-invested enterprises (49.9%), while the rest is composed of private enterprises with 38.6% of the total and state-owned enterprises with 11.5 %.

Graph 2.16 Chinese Machinery export enterprises composition



Many machinery businesses were state enterprises prior to the economic reform. While more collective enterprises and joint ventures have been established in this industry after reforms, there are still quite a few state enterprises due to historical reasons¹⁰².

Different types of businesses predominate in different sections of the market. According to Wong, because of their cost-cutting structures and price-based competition, small and medium companies (SMEs) dominate the country's low-end equipment industry, while state-owned enterprises (SOEs) dominate the high-end machinery market, thanks to significant intellectual property (IP) assets, ability to greatly differentiate their products, and brand building resources¹⁰³.

¹⁰² (Hong & Zhang, 2002)
¹⁰³ (Wong, 2019)

Geographically, China's machinery industry is centered in the regions of Jiangsu, Shandong, and Guangdong. In recent years, the emphasis has turned to increasing output in other areas as well. As China strives to develop its inland areas through the Belt and Road Initiative, a greater emphasis will be placed on central and western China¹⁰⁴.

Among the economic policies and measures implemented by the government, the entry into the WTO, with its subsequent opening to foreign direct investment, the Belt and Road Initiative, and the financial and tax incentives set up for industry-specific goals have all had a significant impact on the growth of the machinery sector. China's admission to the WTO allowed for an increase in foreign direct investments as well as a relaxation of trade barriers and restrictions. Nonetheless, several areas of equipment manufacturing continue to have restrictions on the kind and share of foreign partners; for example, some need more than 50% Chinese ownership. The government has implemented measures to financially support the sector's growth in size and technology level by providing financial and tax incentives for the introduction of advanced technologies, as well as lowering or eliminating import duties on production equipment, raw materials, and components.

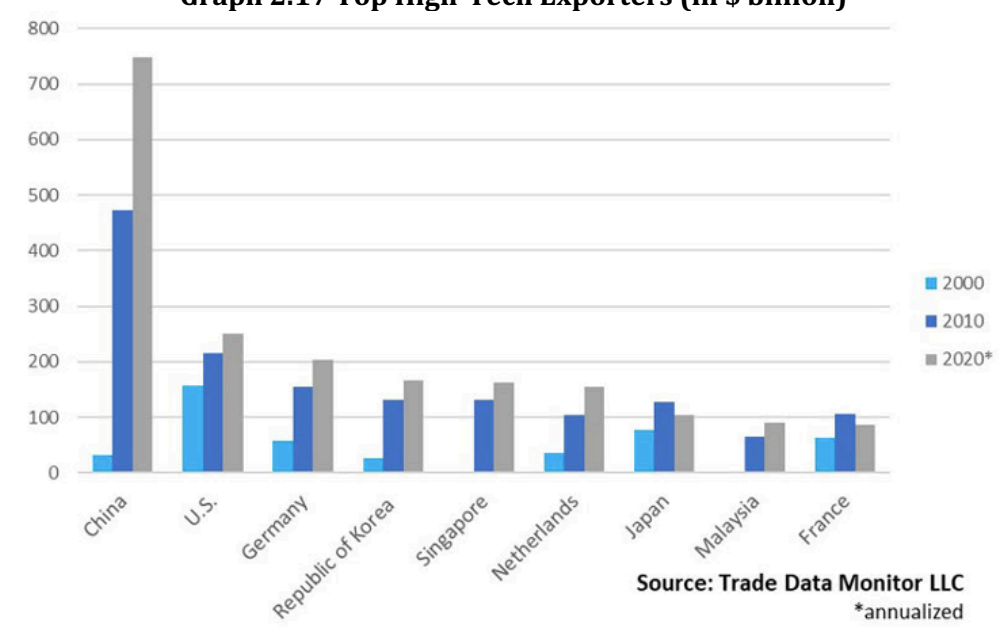
2.3 High-tech industry

The high-tech industry has played a critical role in China's industrial policy and export promotion. Not only is the sector important to the Chinese economy, but China is also crucial in the global high-tech market.

During the initial phase of international trade following China's opening to the world, exports were focused on labor-intensive industries such as metals and textiles, as detailed in the previous chapter. However, in the 1990s, China began a new phase in which it turned away from traditional exports and began focusing on high-tech exports. Machinery and electronics exports have quickly become the leading categories of Chinese exports, and Chinese manufactured products have entered international markets and gained a significant share of global exports, with Chinese electronics companies such as Huawei and Lenovo emerging as global leaders. China has quickly become the global leader in high-tech products, in 2004, it surpassed the previous market leader, the United States.

¹⁰⁴ (Wong, 2019)

Graph 2.17 Top High-Tech Exporters (in \$ billion)



Graph 2.17 shows the evolution of the top exporters in the sector in the span of two decades, from 2000 to 2020. The United States was the biggest exporter of high-tech products in 2000, but by 2010, China had not only exceeded it (in 2004), but had also distanced itself significantly; by 2020, the gap had grown even wider, with China's exports corresponding to the three nations listed below. Other countries, such as Germany, South Korea, and Singapore, experienced significant growth, with Singapore emerging from virtually no trade to become the world's fifth exporter, but China has clearly dominated the market for the past decade.

Focusing on being a high-tech leader is part of the central government's intention to move away from the label "Made in China" and toward being renowned for quality exports; hence, the sector has been of special attention for policymakers.

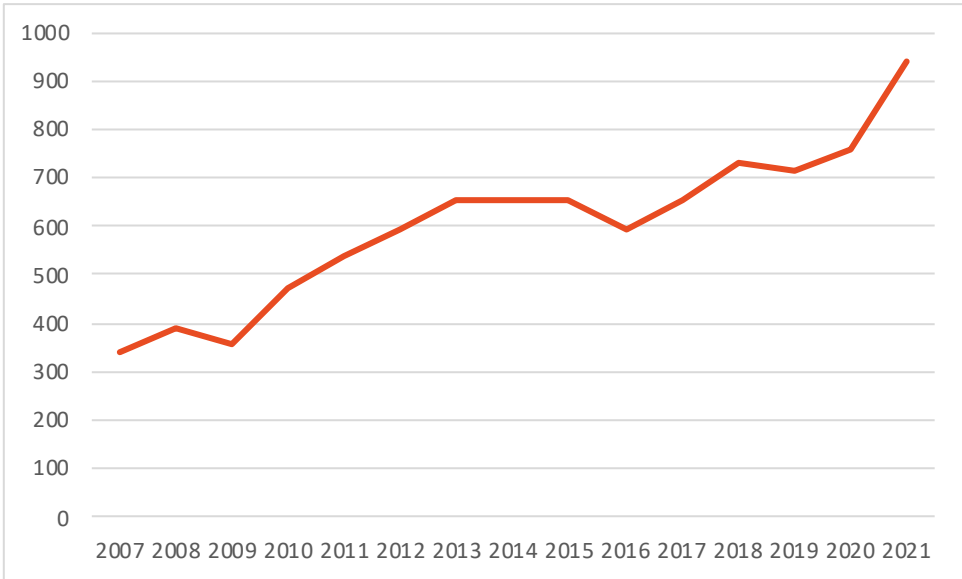
Following its admission to the WTO, China formally entered the global supply chain, boosting its worldwide position. In the case of high-tech exports, the expansion of high-tech supply chains into China increased exports significantly. In 2002, China exported less than a tenth of the high-tech commodities it exported just ten years later; by 2012, the export value had risen to nearly \$600 billion¹⁰⁵.

Graph 2.18 shows that in the following years growth slowed down, and for a couple of years the annual exports even decreased from \$656 billion in 2013 to \$594 billion in 2016,

¹⁰⁵ (Xing, 2016)

but in 2017 the sector recovered and started growing quickly again, in 2020 it reached \$757.5 billion and in 2021 \$942 billion, with an increase above 74% in ten years.

Graph 2.18 Chinese high-tech exports (in \$ billion)



Source: WorldBank

Most industries sustained significant losses as a result of the COVID-19 pandemic and subsequent economic crisis in 2020. The high-tech industry was also harmed by the epidemic, which caused production closures, slowed shipping lines, and reduced consumer demand, negatively effecting supply chains. Chinese exports fell 8.1% to \$54.5 billion in March, from \$59.3 billion in March of 2019. But even so, later in the year, as a result of increasing demand caused by most activities being relocated online (such as work-from-home and online classes), demand for high-tech items such as mobile phones and computers rose quickly, and sales rebounded in the second semester of 2020¹⁰⁶. China was the first country to absorb the impact of COVID-19 and increase high-tech exports, with phones being the most exported category in 2020 with an export value of \$111.7 billion.

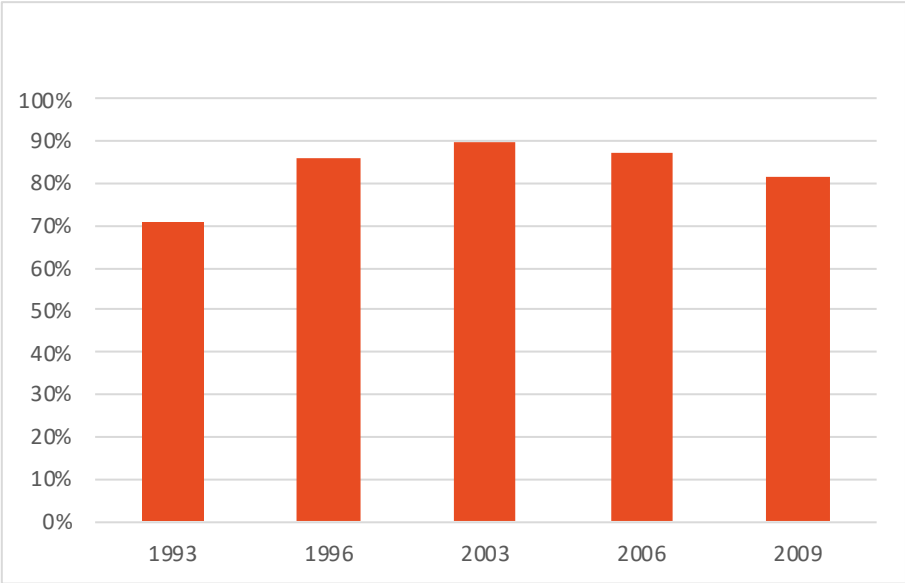
Table 2.3 High-tech share of total Chinese exports

1992	1998	2002	2006	2012	2016	2020
6.40%	15.00%	23.60%	30.40%	29.00%	28.30%	29.20%

¹⁰⁶ (Miller & Wunsch-Vincent, 2021)

As shown in table 2.3, the high-tech sector's exports accounted for only 6.40% of total Chinese exports in 1992, but by 2020, its percentage had progressively increased to almost 30%. In the first decade it grew quickly, and then the growth started slowing down. Because the industry did develop rapidly, but Chinese exports as a whole rose exponentially, the sector's percentage of overall exports has since been stable. Even though the sector accounts for such a significant share of Chinese exports, most of it does not come from local firms, but instead from processing trade, to which the Chinese added value is relatively low.

Graph 2.19 The Share of Processing Exports in China's High-tech Exports (%)



Source: Statistics on Science and Technology, the Chinese Ministry of Science and Technology, Yuqing Xing

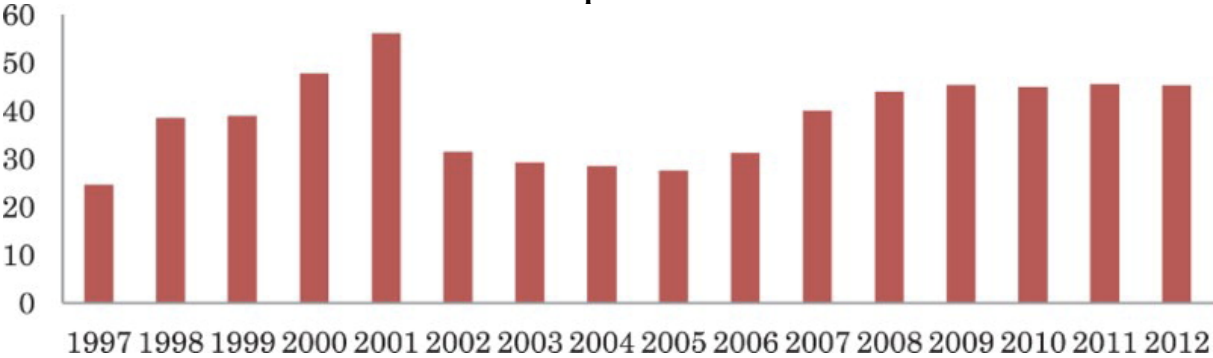
Traditionally, the majority of these exports have come from foreign-invested businesses, which accounted for well over 80% of China's high-tech exports in the 2000s. This kind of products have been one of the leading export categories from East Asia to the rest of the world for decades. They are typically manufactured within a global production network, in which countries such as Japan, Korea, and Taiwan manufacture the components (the sophisticated technology-intensive parts) and ship them to China, where they are assembled by lower-skilled workers and re-exported into the global market. This production network allows multiple nations to participate in the manufacturing process in the phases where they have an advantage, such as Taiwan, which has established

knowledge and technological patent ownership, and China, which has a large labor force. China's participation in this manufacturing network as component assembly places it in the situation of frequently being the last step of production, with products bearing the “Made in China” label but adding relatively little value to the whole product. Guo and Yang concluded from their analysis of four high-tech industries (medicine, computer and office equipment, electronic and communication equipment, medical equipment and instruments) that the export complexity of China's high-tech manufacturing industry is primarily driven by economic growth rather than technological innovation¹⁰⁷.

Since 1996, 92% of Chinese high-tech products had been exported in the form of processing trade. However, this situation is bound to change. Because of the technological spillover effect of foreign-funded firms and increased investment in China's research & development activities, its R&D capacity, as well as the ability to learn sophisticated technologies and management expertise, has been improving dramatically in the last decade¹⁰⁸. Xi Jinping's administration has been focused in recent years on developing state-owned enterprises and pushing Chinese firms ahead of multinational ones.

In line with this trend, the domestic value added of Chinese exports has been increasing.

Graph 2.20 The domestic value added of China's processing high-tech exports.



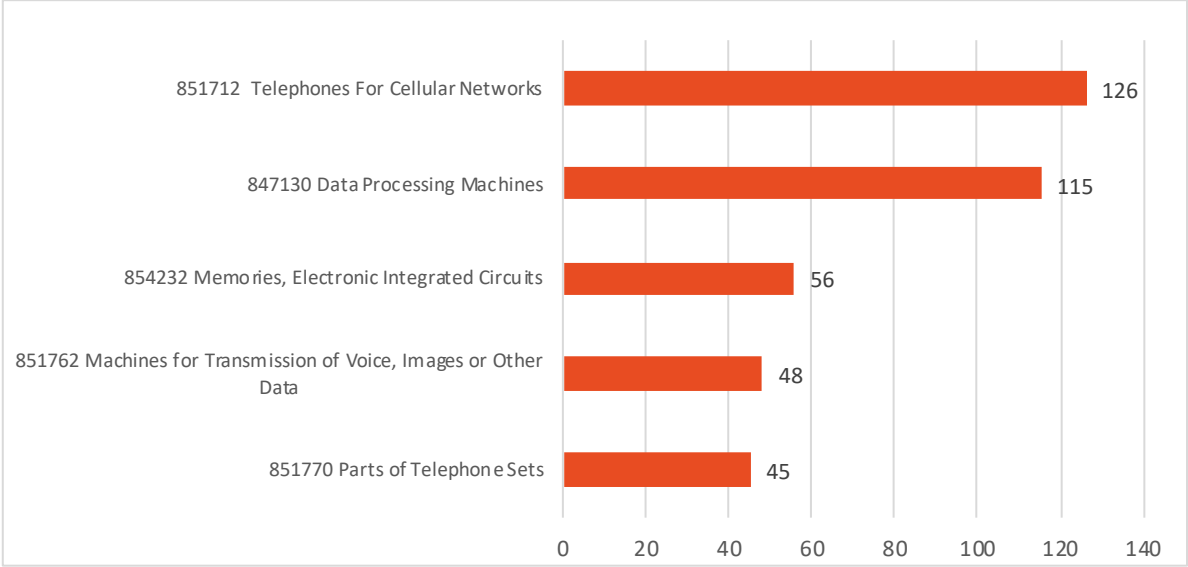
Source: Xing, *Global Value Chains and China's Exports to High-income Countries 2016*

At the beginning of the century, many high-tech multinational enterprises shifted production plants to China or outsourced low-value-added jobs to Chinese enterprises in order to take advantage of China's available labor force. Approximately 80% of China's high-tech exports were classified as processing trade, with relatively low domestic value

¹⁰⁷ (Xie & Zheng, 2019)
¹⁰⁸ (Xiong & Qureshi, 2013)

added¹⁰⁹. Figure 2.20 shows the changes in China’s share of value added, the domestic value added of China's processing of high-tech exports was just 25% in 1997 and climbed significantly to 45% in 2012, yet despite the large rise, it still indicates that more than half of the value of products sold by China originates from foreign sources. As a result, the sophistication of Chinese exports remains dependent on the sophistication level of foreign enterprises, although it is increasing due to technology spillovers which contributes to a further growth in exports.

Graph 2.21 China’s main high-tech export categories in 2020 (in \$ billion)



Source: China Customs Statistics Trade Data Monitor, UNComtrade

The sector's success is undeniable, but it has been disproportionately concentrated in a few key high-tech products: cell phones, laptop computers, liquid crystal displays, and integrated electronic circuits. In 2020 the total value of Chinese high-tech exports was \$757.46 billion, graph 2.21 shows that the top five export categories alone account for more than half of it. Furthermore, just the first category, telephones for cellular networks, accounts for \$126 billion, or 16.6% of total annual high-tech product exports. This demonstrates how the sector's economic success was driven by just a few exceptionally successful products.

Analyzing the factors that led to such success, China implemented an industrial policy aimed at promoting the sector and its exports, with strategies that included the establishment of economic zones such as science parks, which specifically encouraged

¹⁰⁹ (Xing, 2016)

these types of exports, and stimulating capital and technology inflows. China has offered tariff exemptions for imported materials used in the production of exported goods in order to attract foreign direct investment. However, it would not have had the same effect if additional environmental conditions had not been present:

- A sharp increase in global demand for these products, with China's domestic market leading the booming global demand.
- A severe decline in U.S. high-tech investments, because the production of high-tech goods requires large amounts of capital, and the United States was recovering from a crisis, American firms were less likely to invest large amounts of capital. This opened the door for China to take advantage of the situation and gain a big share of the market.
- The products were relatively new to the market and are swiftly replaced by newer generations of themselves, resulting in the continuous development of new technology and manufacturing processes. As a result, there was an opportunity for new market participants to enter the market as well as a necessity for existing market participants to open additional facilities.

2.3.1 The mobile phone industry

The harmonized system 4-digit code 8517 refers to telephones (Electrical apparatus for line telephony or line telegraphy), and the 6-digit number 851712 refers to mobile phones, which are of special importance for the purposes of this thesis.

Since its early beginnings, the Chinese mobile phone industry has grown rapidly and has become one of the country's key exports and it became highly significant worldwide.

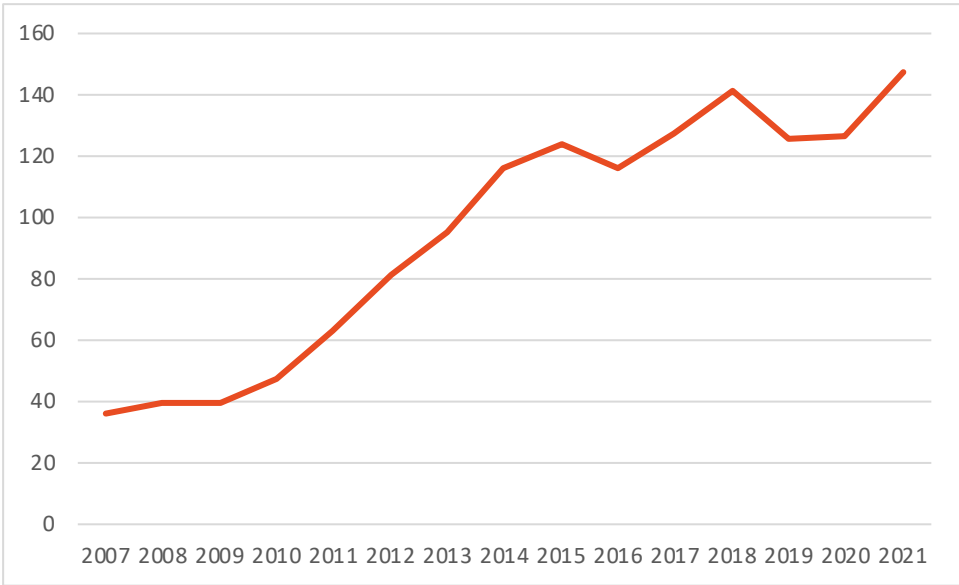
The fast growth of China's mobile phone industry exports has positive effects on the whole industry, it promoted the development of international trade; the quick growth of mobile phone exports has become the major factor driving industry development and promoted a substantial growth in the expansion of China's mobile phone industry.

China is a latecomer to mobile telecommunications when compared to other East Asian countries. The mobile phone sector in China only started becoming notable in the late 1990s, at that time the global industry was going through a period of significant change, the markets of developed countries had reached saturation and rising cost competition drove makers to outsource manufacturing. China stood out among emerging countries for

having the necessary economic and policy climate to enable manufacturing locally inexpensive and profitable.

In 1998, the Ministry of Information Industry (MII) issued a statement that established rules for mobile manufacturers, including export quotas based on production output, a licensing regime, and the requirement that non-licensed foreign ventures or Joint Venture companies produce locally only for overseas markets¹¹⁰. Following this, the sector expanded fast, both in terms of output and demand, both domestic and worldwide. China's assimilation into the global mobile phone market shares similarities with Taiwan's, particularly the strong role of component production and assembly¹¹¹.

Graph 2.22 Chinese exports of mobile phones (in \$ billion)



The growth of the Chinese mobile phone business has been impressive. In less than two decades, the Chinese mobile phone sector has risen to become the world's largest producer and exporter of mobile phones, between 2007 and 2020 the export of China's telephone increased of \$90 billions from \$36 billion to \$126 billions, an increase of 250%. Following this impressive growth, China's share of global exports of mobile phone also grew fast, in 1996 China accounted for just 4.28% of global exports, in 2004 it gained 15.4% of global exports and became the leading exporter.

Graph 2.22 and table 2.4 show that the industry was affected by the decline of global mobile phone export in 2016, when Chinese mobile phone export dropped from \$124

¹¹⁰ (Zhu, et al., 2006)

¹¹¹ (Lee, et al., 2015)

billion to \$116 billion dollars, in the same year the global export had a significant fall too, from \$245 billion in 2015 to \$200 billion in 2016. In fact, Chinese share of export market increased in this period, from 49.79% to 57.86%. Therefore, from the perspective of export market share, the international competitiveness of China’s mobile phone industry is very strong¹¹².

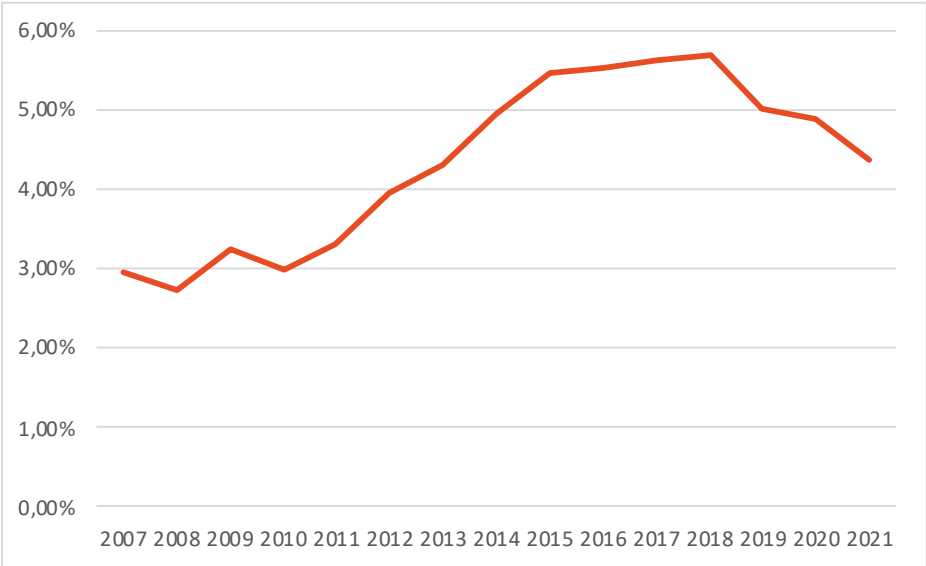
Table 2.4 Export market share of China’s mobile phone industry from 2012 to 2016.

Time	China’s total mobile phone exports (100 million USD)	Global mobile phone exports (100 million USD)	Export Market Share
2012	810.25	2026.59	39.98%
2013	950.79	2424.11	39.22%
2014	1153.55	2611.25	44.18%
2015	1237.34	2485.31	49.79%
2016	1155.89	1997.6	57.86%

Data source: Wu, Fang and Liu 2019

Despite a declining trend in total export volume in recent years, total export volume has continued to increase. Furthermore, the domestic mobile phone export industry is booming, and although exports used to be entirely products assembled for foreign enterprises, China's domestic mobile phones are becoming increasingly popular among abroad customers¹¹³.

Graph 2.23 Mobile phone share of total Chinese exports



¹¹² (Wu, et al., 2019)

¹¹³ (Long, 2021)

Given that it is a 6-digit code, the exports account for a sizable portion of overall Chinese exports. Mobile phones accounted for 2.95% of overall exports in 2007, but they rose rapidly over the next decade, accounting for more than 5.67% of total exports in 2018. Following that, the percentage declined slightly, although it still accounted for 4.87% in 2020.

Table 2.5 Mobile phone exports’ value and share of total exports

	Mobile exports in billions	phone Chinese total exports in billions	Mobile phone share of total exports
2007	\$36.08	\$1,220.06	2.95%
2010	\$47.06	\$1,577.76	2.98%
2012	\$81.45	\$2,048.78	3.96%
2014	\$115.92	\$2,342.29	4.95%
2016	\$116.09	\$2,097.63	5.53%
2018	\$141.50	\$2,486.44	5.67%
2020	\$126.08	\$2,589.09	4.87%

China is currently the world's leading producer and exporter of mobile phones, but the industry began with the manufacture of phones for foreign corporations. All major global mobile phone firms have either employed significant production facilities in China or outsourced production to Chinese original equipment manufacturers¹¹⁴.

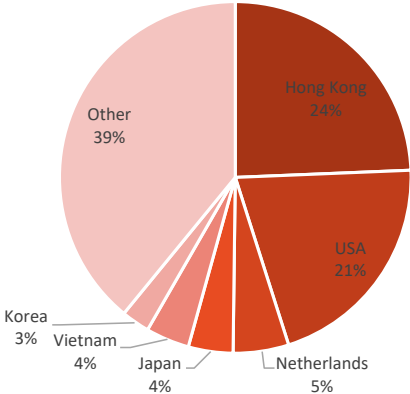
Apple and Samsung, among the largest mobile phone manufacturers, have both taken advantage of China's low salaries and manufacturing costs for the assembly part of their devices' production. This situation has changed in recent years due to rising expenses in China, although it was the primary reason for the sector's initial expansion. Entering the global value chain was especially important since it allowed Chinese entrepreneurs with little prior capital, experience, or comparative advantage to learn by doing and eventually become viable competitors of international corporations.

¹¹⁴ (Xing & He, 2018)

The quick expansion of the sector and the clusters established by component suppliers have nourished indigenous enterprises, considerably accelerating China's industrialization¹¹⁵.

In recent years, China has distinguished itself from other major phone exporters by meeting increased demand for low-end mobile phones in emerging and low-income countries. It manufactures unbranded phones aimed for low-end markets, with a large number of fragmented manufacturers working in dense inter-firm networks to fulfill the fast-changing customer desires for inexpensive mobile phones in many low-income countries. This phenomenon has grown and established a solid market for Chinese exports in emerging nations¹¹⁶. This expands China's export market, but at a smaller profit margin than selling to developed nations, which remain the largest ultimate markets for Chinese mobile phones.

Graph 2.24 Major export regions of China's domestic mobile phone in 2021



Source: UN Comtrade

As the graph 2.24 above shows, almost half of mobile phone exports are imported by only two countries. In 2021, Hong Kong, China, and the United States were the destinations of most of Chinese mobile phone exports, accounting for more than half of total domestic mobile phone export value. Hong Kong, China is now China's top export market for mobile phones, with a \$63 billion export value in 2021, accounting for 24.3% of all Chinese exports of all HS8517 items. The United States is the second largest importer, accounting for 20.7% of total imports with exports of \$53 billion. Hong Kong has traditionally been seen as a gateway to foreign markets for China, due to its substantial percentage of

¹¹⁵ (Xing & He, 2018)

¹¹⁶ (Lee, et al., 2015)

Chinese exports. Because Hong Kong's re-export trade is well developed, Chinese inland export firms use favorable policies to send products to Hong Kong first, then transship the goods to other countries to minimize the cost of exporting commodities. As a result, whether imported or exported, most items will travel via Hong Kong to cut export costs¹¹⁷. The success of this industry sector is undeniable, and it is worth investigating the factors that made it possible.

There are multiple factors that can account for China's mobile phone industry and subsequent export growth. The entry into the sector was facilitated by the fact that it was a relatively new and rapidly changing sector, where traditional producers also needed to update their systems and machines, often losing the comparative advantage of being an already established manufacturer. Additionally, China had its own comparative advantage of low costs, which attracted foreign enterprises to locate assembly factories in China.

With its entry into the global value chain, China has become the primary location for mobile phone manufacture. The massive domestic market within China has had a significant role in the growth of Chinese mobile phone firms. A high demand helps to elevate standards and increasing production and output boosts exports of these items¹¹⁸. These factors were critical, but they were also aided by China entering the market at the right time, between the late 1990s and the early 2000s, when there was a surge in worldwide demand for mobile phones and production was shifting geographically from developed countries, its traditional center of production and consumption, to emerging economies.

The sector has been thriving, as clearly demonstrated by the data, nonetheless, there are significant difficulties that endanger the sector's expansion and continuous development. According to Long¹¹⁹, the primary challenge to the sector is a lack of product core technology. This is because, from the industry's beginnings, China's mobile phone manufacturers have relied on imports of components such as chips, memory, and other core technologies. This is what allowed China to enter the market despite having no prior capital or technology knowledge, but it eventually became a disadvantage and slowed growth.

¹¹⁷ (Long, 2021)

¹¹⁸ (Sturgeon & Kawakami, 2010)

¹¹⁹ (Long, 2021)

Long uses the example of “chips”, a vital technology for smartphones; despite the fact that China produces more than 80% of the world's mobile phones each year, only fewer than 10% of them are independently created using technology patents owned by Chinese firms; Chinese companies rely on foreign chip patented technology. If domestic mobile phones are to break through the bottleneck of core technology and break away from component’s assembly and low value-added manufacturing, they must focus on technological knowledge and development, and ownership of core technologies.

The other major issue that has emerged in recent years is undoubtedly the country's rising production costs. This has been a problem in most sectors of the industry because China, as a major export processing trade country, has been relying on the comparative advantage of low wages and low production costs for many years, but recently the country's quality of life has been rising, and so have the country's wages. As a result, firms are being pushed to transfer their manufacturing to other nations. This is also consistent with the government's intention to transition its policies away from a primarily processing trade economy and toward a high-quality goods industry, as discussed in the first chapter of this thesis.

2.3.2 The computer industry

The computer sector has shown to be a rapidly developing market in China among high-tech exports. We have seen how computers have become one of the major exports not only among high-tech exports, but also among Chinese exports overall.

Defining computers as the 4-digit HS 8471 category, it was the most traded product within machinery and mechanical appliances (HS 84 category), accounting for 39% of it in 2020 and 7% of total Chinese exports for the year. In terms of export value, the 6-digit category HS 847130 for personal computers (PC) has been exceptionally successful, behind only mobile phones in 2020. Table 2.6 depicts the increasing importance of PC exports among computer exports; in the late 1990s, it was minimal, but by 2005, it had increased by 39%. Following years of rapid growth, it has now stabilized around 64-68%. This may be explained by the increasing popularity and demand for PC computers, as well as the decline in use of previous types of computers. The shift of business and school activities online during the COVID-19 pandemic may explain the increase in share from 2019 to 2020.

Table 2.6 Chinese computer exports 1996-2021

	Computer exports in \$ billion	PC exports in \$ billion	PC share of total computer exports
1996	3.69	0.37	10%
1998	7.07	0.52	7%
2000	10.99	0.2	2%
2005	76.30	29.89	39%
2007	93.51	53.01	57%
2009	101.58	66.65	66%
2012	163.44	113.78	70%
2016	125.01	79.58	64%
2019	148.42	95.67	64%
2020	170.18	115.32	68%
2021	204.53	138.99	68%

Source: UN Comtrade database

The computer industry formed in the mid-1980s and grew significantly during the 1990s; nonetheless, critical technologies remain dependent on foreign corporations, similarly to other high-tech products. The industry is distinguished by strong market pressures, high capital intensity, and reliance on foreign technology¹²⁰. Foreign manufacturers control crucial technology such as CPUs and motherboards. For example, Dell China Limited, the world's second biggest computer manufacturer, is wholly owned by Dell Inc., an American company.

From 1990 to 1997, the computer industry grew at a 40% yearly pace on average. With just a modest tariff in place, the local market was open to international competition¹²¹. In 2004 China surpassed the U.S. to become the world's largest producer of computers. Several foreign and domestic factors have affected the growth of China's computer sector, the Chinese central government acted specific policies and strategies to promote the sector and its exports. At the core of China's computer-industry policy is a desire to learn from international corporations while still maintaining control over its own technology and economy by limiting the involvement of foreign firms and supporting domestic firms. This was accomplished by utilizing production licenses and market access as leverage to obtain technology transfer and collaborations with international corporations. To attract

¹²⁰ (Tian, 2007)

¹²¹ (Tian, 2007)

investment and technology, China has opened its computer sector to international corporations, including US and Taiwanese firms. Multinational corporations frequently created joint ventures with local corporations to promote their own goods and get access to local distribution channels. This provided several benefits to China, whose major objective was to obtain expertise and become capable of manufacturing without relying on foreign partners or components.

The Ninth Five-Year National Development Plan, 1996-2000, included policies to improve the computer industry, particularly the PC industry, with the goal of increasing the percentage of domestic components in Chinese-assembled computers and developing uniform PC standards through a production licensing system, among other things¹²². At the same time, China has put an emphasis on the need to encourage exports by joining multinational enterprises' worldwide manufacturing networks. Exports were also encouraged by establishing export processing zones where imported materials used in production are duty and tax free when exported directly, as well as tax breaks. The efforts to promote exports were effective, and between 1990 and 1998, Chinese computer exports went from a negative trade surplus to an overall trade surplus of \$ 4.86 billion in 1998, as shown in table 2.3. The establishment of export processing zones began in 1994, and it had a significant influence on export growth, it was the key push that accelerated growth. Only four products accounted for the majority of the trade surplus: PCs, monitors, hard disk drives, and printers.

Table 2.7 China's computer trade balance (in \$ millions)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Exports	227	314	820	1,258	2,006	3,750	5,315	7,543	10,169
Imports	552	668	1,344	1,344	1,763	2,403	2,876	3,868	5,300
Trade balance	-325	-354	-524	-86	233	1,347	2,439	3,675	4,869

Source: Yearbook of World Electronics Data, 2000; Kraemer and Dedrick, 2002

Computer exports have benefited greatly from export processing zones and science parks, the growth of which has been essential in the overall increase in Chinese high-tech exports. When originally created, science parks were planned as a space to encourage and foster local innovation, but with time they have come to rely increasingly on foreign investment

¹²² (Kraemer & Dedrick, 2002)

and technology transfer. Preferential tax regimes attract foreign investment to these parks in particular. Furthermore, lower labor was a magnet for high-tech investment, as shown with Taiwanese laptop manufacturers.

Taiwan had a significant influence in the development of Chinese computer exports. Pushed by rising costs, Taiwanese enterprises began to migrate manufacturing to mainland China in the late 1990s, and after 2001, when restrictions on investment in the industry were lifted, much of Taiwan's production relocated to mainland China, particularly notebook computer manufacture¹²³. This was significant for both economies; by 2004, China manufactured about 70% of all Taiwanese notebook computers.

An industrial policy aimed at increasing exports and accessing the global production network while developing technological competence was critical for the emergence of the Chinese computer industry, but its success was boosted significantly by the existence of several other external elements. According to Kraemer and Dedrick, among the driving forces of this growth we can identify the growing domestic market and the unique nature of China as a transitional economy.

First, China's population is the largest in the world, and with improving standards of living, Chinese people have become one of the world's biggest consumers markets. Such high demand is expected to stimulate industry growth. Moreover, the Chinese government has implemented policies to promote the use of computers among citizens and Chinese businesses, lowering tariffs and hence lowering computers prices¹²⁴.

Second, most nations' computer industry evolved inside a capitalist-market context, but China's evolved during a period of transition. China's economy was moving from a centrally planned to a mixed market economy. According to Kraemer and Dedrick the transition from a strategy aimed at achieving technological independence to a more pragmatic strategy of developing national capabilities in order to create an internationally competitive computer industry created a one-of-a-kind situation in which the complex interaction of government and markets makes distinguishing between market forces and government policies impossible.

¹²³ (Yang, 2006)

¹²⁴ (Kraemer & Dedrick, 2002)

2.4 Conclusion

In conclusion, in this second chapter of this thesis, I focused on the main export categories of Chinese goods, and through an analysis of the export basket as well as the technology and labor components of these sectors, it became clear that China's initial export boom was primarily due to the driving engine of labor-intensive sectors (such as Metals). This allowed China to swiftly integrate into global production networks, attract FDI, and consolidate its position as the "World factory" and a product processing and assembly hotspot.

As demonstrated by the economic strategies discussed in the first chapter, China established itself as a significant global actor through this process, but it was not the ultimate goal of governmental ambitions. Labor-intensive sectors began to lose importance in total Chinese exports in the late 1990s and early 2000s, as the industry was now more focused on capital-intensive and technology-intensive sectors, among which emerged an absolute standout, Machinery. China already manufactured and sold mechanical and electrical equipment items in the 1980s, but it was later that the sector grew to be the leading export category.

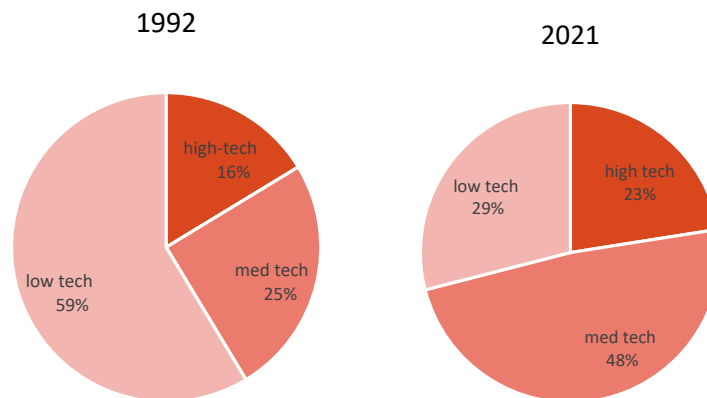
The rise of Chinese high-tech products is notable among technology-intensive industries; the sector is heavily supported by processing trade, nonetheless, its relevance to revenue, trade, and the complexity of the Chinese economy is undeniable. There are a few ways we may better assess the issue and comprehend the adjustments that led to China's current export scenario. These include examining the technological intensity of exports and China's economic complexity and its rising global rank.

Technology intensity of Chinese exports

The technological intensity of Chinese exports has varied from the 1990s to the present, these changes might contribute to highlight the transition undergone by the Chinese industry in this period. The increasing sophistication of Chinese exports resulted in a transition away from low-technology exports and toward medium and high-technology exports.

Graph 2.25 depicts the evolution of the technology intensity of Chinese exports between 1992 and 2021.

Graph 2.25 Technology intensity of Chinese exports in 1992 and 2021



In 1992, low-technology goods accounted for over half of total exports, which is expected of a developing country's industry. Medium technology goods accounted for 25%, while high technology goods accounted for just 16%. This composition has radically altered in the following three decades, as China's industry matured and became more sophisticated, the ratio of low-technology exports declined substantially. While still accounting for more than a quarter of overall exports, high technology exports grew to 23% of overall exports, this is an important increase that demonstrates how China has acquired more technology and knowledge and was capable to rise to a higher worldwide position in international trade. By far the largest percentage in 2021 was medium technology exports, which include relatively complex technologies and skills and needs fairly high levels of R&D, indicating a more mature economy. This shift in China's export bundle away from low-technology exports had a significant impact not just within China's economy but also globally. China's export structure is becoming gradually comparable to that of industrialized high-income nations such as the United States.

Economic Complexity Index

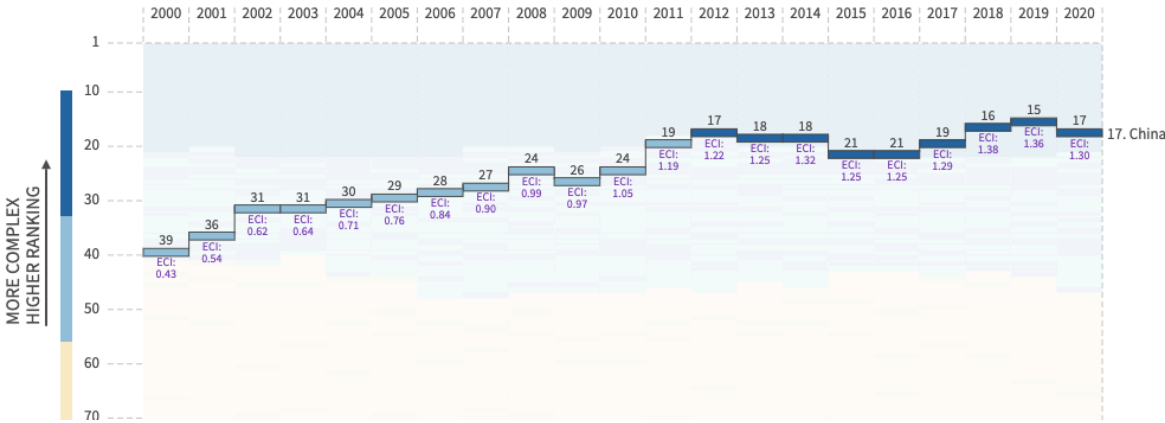
The rise of Chinese exports, both in terms of volume and of sophistication, has had a significant impact on the Chinese economy and its place in the global market; we may use the Economic Complexity Index to better understand how it has developed over the years. The Harvard Center for International Development created the Economic Complexity Index (ECI), which was included in the Atlas of Economic Complexity ¹²⁵ .

¹²⁵ The Atlas of Economic Complexity by Growth Lab Harvard University, <https://atlas.cid.harvard.edu/>, accessed on 25 January 2023

It is significant to this thesis because of its capacity to investigate nations' productive capacities, particularly how a society can organize knowledge in order to produce complex products¹²⁶. The ECI is also used to forecast a country's future economic growth. This is possible since a country's productive structure is strongly tied to its economic success. By identifying nations whose economic complexity outperforms predictions based on income level, it's then possible to predict future growth¹²⁷.

It is based on export statistics in order to reflect the range and sophistication of each country's productive capacities contained in its exports. When a country's export basket is diverse, it is considered very economically complex. According to the creators of the index “Countries that are home to a great diversity of productive know-how, particularly complex specialized know-how, are able to produce a great diversity of sophisticated products”¹²⁸.

Graph 2.26 China’s ECI and global ranking 2000-2020



Source: The Atlas of Economic Complexity, <https://atlas.cid.harvard.edu/>

Regarding China's position, Chinese exports have grown substantially in both volume and complexity. According to the Atlas of Economic Complexity, China is an upper-middle-income country, ranking 47th in terms of GDP per capita out of 133 countries surveyed. Before 2030, China's GDP per capita is predicted to expand at a 5.82% annual rate. This predicted growth is based on China's exports being more complex than expected for its income level, as well as its diversification of production. According to McKenney's¹²⁹ research, countries that diversify their production into more complex sectors are

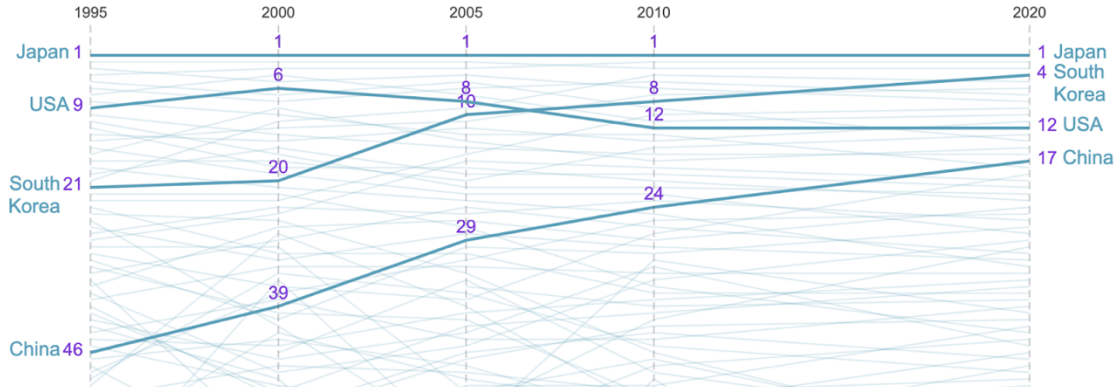
¹²⁶ (Pernet, 2014)
¹²⁷ (McKenney, 2022)
¹²⁸ (Growth Lab Harvard University , s.d.)
¹²⁹ (McKenney, 2022)

predicted to expand faster than the average. In 2020 China ranks as the 17th most complex country in the Economic Complexity Index (ECI) ranking.

Graph 2.26 depicts the progression of China's economic complexity index and worldwide ranking over a two-decade period. China ranked 39th in the world for complexity in 2000, with an ECI of 0.43, an increase from its ranking of 46 in 1995, and it continued to improve. Following its admission into the WTO in 2001, it rose from 36 to 31 but had significant setbacks following the 2008 financial crisis and in 2016. With an ECI of 1.30, it is presently ranked 17th in the world.

The shift and structural transformation from labor-intensive sectors to high-productivity, technology-intensive sectors that produce more complex products has been a push for this economic growth; currently, China's leading exports are high-complexity items in the areas of electronics and machinery.

Figure 2.27 Comparison of ECI evolution in China, Japan, South Korea and the USA



Source: The Atlas of Economic Complexity, <https://atlas.cid.harvard.edu/>

Graph 2.27 demonstrates that China has improved its economic complexity performance significantly, but it is not the only country that has done so. South Korea and Japan are both east Asian countries that are regarded as part of the "East Asian miracle" due to the spectacular expansion of their economies as a result of their economic policies. South Korea scored better than China in terms of economic complexity in 1995, and it still does now, but it also rose from 21st to 4th in the world from 1995 to 2020.

Japan is the first country in the world for economic complexity; China's proximity and economic links with these two extremely complex nations have offered multiple benefits to China's own sophistication of its industry and economy. As previously discussed, China's export boom was primarily due to its ability to introduce itself into production

networks and international division of labor. Chinese enterprises frequently imported parts from more technologically advanced countries, such as Japan and South Korea, and then processed them in order to export finished products.

This production network was vital for a nation like China, emerging from decades of isolation and lacking expertise or capital to invest in high or medium technology businesses. It enabled it to participate in the mass production of goods, and profit from partnerships with other countries. These advantages include technology acquisition, FDIs, and learning by doing, which allowed the Chinese industry to evolve and become more sophisticated, boosting China's economic complexity.

3. Main export destinations

China is the world's top exporter in terms of value; in 2020, it exported a total value of \$2.59 trillion, and in 2021, the exports reached \$3.36 trillion. It increased by about 30% in only one year, and it increased by 113% since 2010.

Table 3.1 Main destinations of Chinese exports

Country	Export value (in \$ billion)	Share of total
USA	577.125	17%
Hong Kong	349.440	10%
Japan	165.820	5%
Korea	148.847	4%
Vietnam	137.904	4%
Germany	115.180	3%

When we look at the end destinations of Chinese exports, we can see that in 2020, 45% of exports went to Asian countries, 19% went to Europe, and 8% went to North America. The remainder of the world received smaller percentages. Table 3.1 shows that the leading export destination in 2020 was the United States with 17% of total Chinese exports, followed by Hong Kong (10%), Japan (5%), South Korea (4%) and Vietnam (4%), and the only European country in the top six destinations is Germany (3%).

China's main trade partners have changed since the Open-Door policy; in this chapter, I'll explore which nations contribute the most to Chinese exports and how their relationship has evolved over time. Following the implementation of the Open-Door Policy, Chinese exports increased in volume and share of GDP in the 1980s and 1990s. Its exports as a percentage of GDP increased from 6.0% in 1980 to 20.3% in 1997¹³⁰. During this era, the makeup of export trade destination partners altered; exports to industrial nations grew from 44.76% in 1980 to 51.29% in 1997, while exports to Asia stayed around 40%. An examination of China's export growth reveals how dramatically the export destinations have shifted over the previous several decades. The Chinese government sought strategies to encourage overseas trade in order to obtain advanced foreign technologies, to do so it began a series of trade reforms that culminated

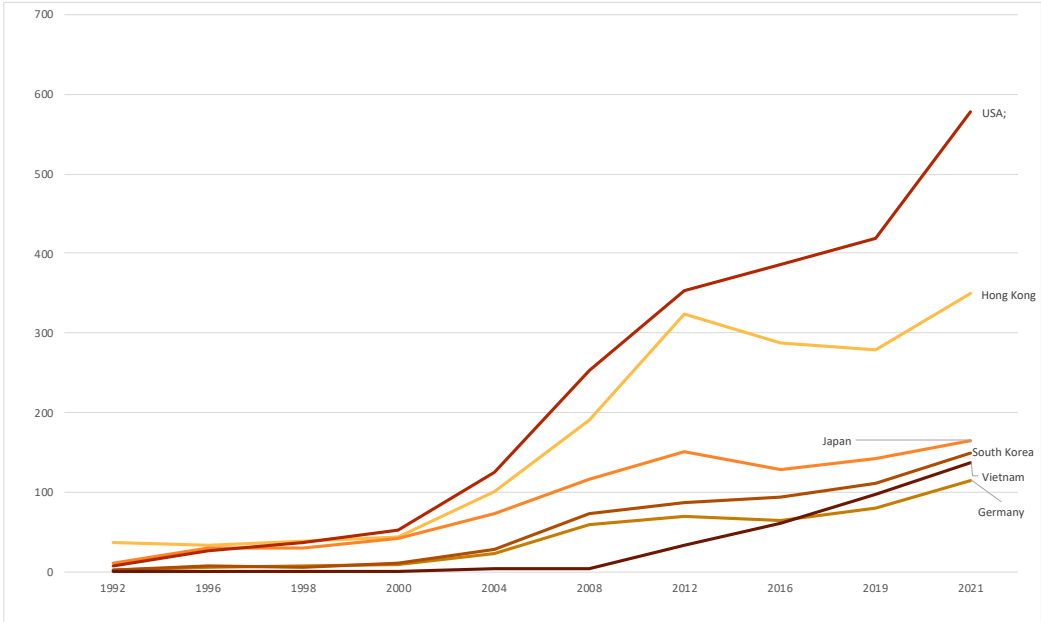
¹³⁰ (Xie & Zheng, 2019)

to the country's admission to the World Trade Organization (WTO) in 2001, this has a significant influence on worldwide trade. For example, in the early 1990s, most merchandise exported from China to the United States had to be re-exported through Hong Kong. This changed when China joined the WTO and began mainly exporting directly to the United States, which had a significant impact, and trade with the United States increased at the expense of Hong Kong¹³¹.

In the previous 20 years, there has been a clear trend of growing ties with Asian nations, to which it is simpler to export due to cheaper transportation costs due to proximity.

China has not only adopted international economic and trade policies, but it has also signed free trade agreements and regional trade treaties with important trading partners. Such agreements have focused on topics such as free trade and market access, an example is the China–ASEAN Free Trade Area (CAFTA).

Graph 3.1 Evolution of main destinations of Chinese exports 1992-2021 (in \$ billion)



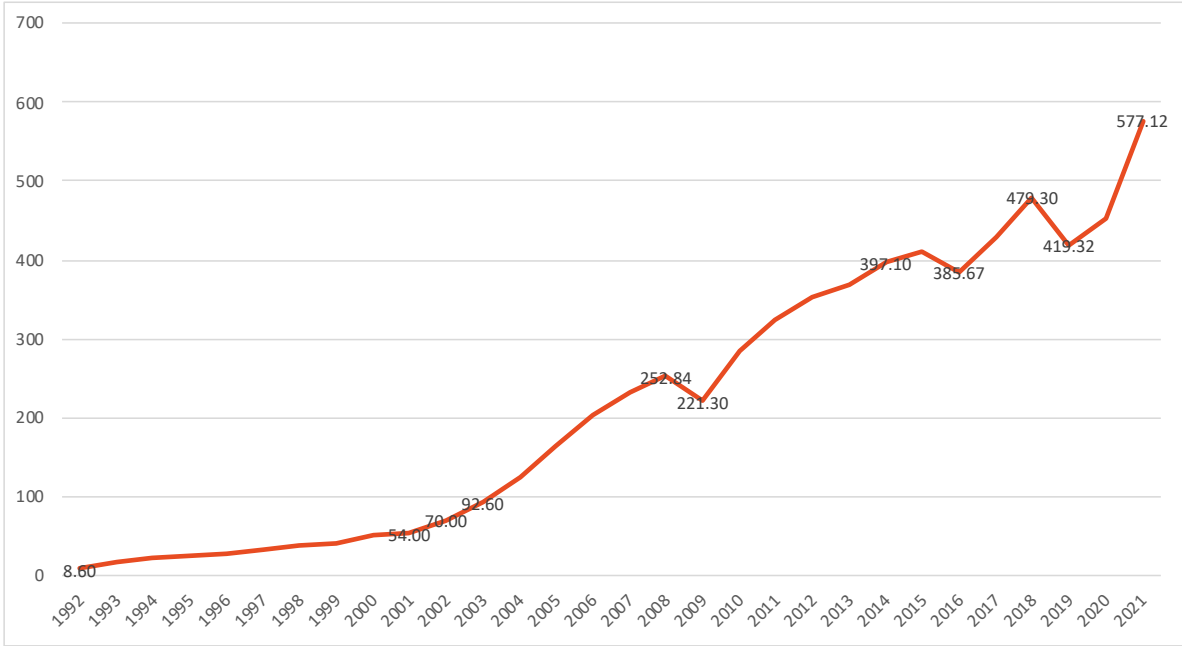
According to graph 3.1, the main importers of Chinese exports in 2020 were the United States, Hong Kong, Japan, South Korea, Vietnam, and Germany. With a large gap between the top two (the United States and Hong Kong) and the rest of the countries.

When we look at specific countries as trading partners, we can get additional insights.

¹³¹ (Chou, et al., 2009)

3.1 The United States and the trade war

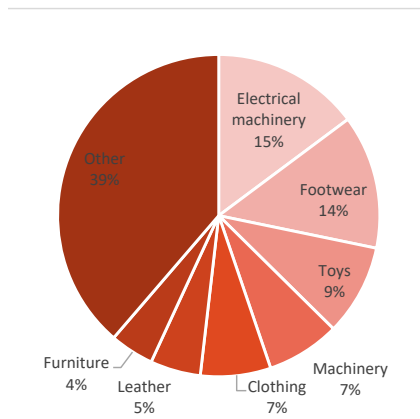
Graph 3.2 Chinese exports to the United States 1992-2021 (in \$ billion)



For many years, the United States has been China's most significant trade partner; with a GDP of more than \$23 trillion, it is the world's largest economy (followed by China). In terms of export value, it was the top most important destination for Chinese exports in 2021, with a value of \$577 billion, exports to the United States accounted for 17.16% of total exports. The largest exported product categories from China to the United States in 2021 were electrical machinery (\$134.9 billion), machinery (\$114.1 billion), and furniture and bedding (\$39.3 billion). In contrast, exports from the United States to China were mostly made up of electrical machinery and machinery, but only at considerably lower values, \$19.4 billion and \$16.7 billion, respectively. The entire amount of bilateral trade between the two areas was more than \$728 billion in 2021.

Figures 3.3 and 3.4 depict the evolution of the composition of Chinese exports to the United States from 1995 to 2021. In 1995, electrical machinery accounted for 15% of total exports, followed by footwear (14%), toys (9%), machinery (7%), clothing items (7%), leather items (5%) and furniture (4%). Meanwhile, in 2021, the top export categories were electrical machinery (23%), machinery (20%), furniture (7%), toys (6%) and plastics (5%). The most noticeable differences are that footwear accounted for 14% of 1995 exports but is no longer present in 2021's top exports; electrical machinery remained the top exported category, and its overall importance increased from 15% to 23%, machinery is the category that increased the most, from 7% to 20%.

Graph 3.3 Top categories of Chinese exports to the United States in 1995



Graph 3.4 Top categories of Chinese exports to the United States in 2021

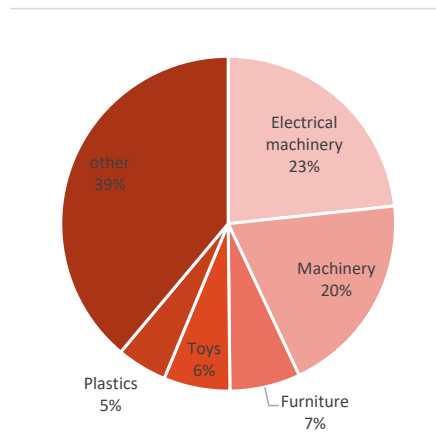


Table 3.2 shows that the percentage of total Chinese exports to the United States increased significantly from 1992 to 2000, during which period it raised steadily until it reached a peak of nearly 21%. It subsequently began to fall, falling to 16.78% in 2019 before rising again in recent years.

Table 3.2 Chinese exports to the United States as percentage of total exports

Year	Share of total exports
1992	10.12%
1995	16.62%
2000	20.93%
2009	18.42%
2016	18.39%
2019	16.78%
2021	17.16%

Positive growth was also aided by the removal of trade barriers, particularly after the country's admission to the World Trade Organization (WTO) in 2001. It expanded dramatically in just a few years, from \$54 billion in 2001 to \$163 billion in 2015, a rise of more than 200% in just four years. The rapid growth of exports is also explained in part by the overall increase in manufacturing activity in China, as well as the execution of several export-oriented policies. Nonetheless, it is obvious from table 3.2 that it was not

only the value of shipments to the US that increased, but also their importance as a proportion of overall exports. The steady increase of exports slowed and even declined in 2008 as a result of the economic crisis and subsequent global recession, which hit the US market especially hard. It decreased from \$252.84 billion in 2008 to \$221.3 billion in 2009, but quickly recovered, and by 2011, it had surpassed the \$300 billion mark in yearly export value. By 2015, it had reached \$410 billion, but in the following years, Chinese exports to the United States had their worst crisis ever. The China-US relationship got increasingly tense in the second half of the 2010s. The fact that China maintains a trade surplus with several nations, particularly the United States, is undoubtedly at the heart of these conflict.

The trade war

Despite being the world's largest economy, the United States has a massive trade imbalance with China. If trade is just considered as trade of goods, in 2021 China had a trade surplus of \$426 billion.

This major trade surplus in favor of China adds to a pre-existing mistrust between the two nations, which is based on several criticisms of China, ranging from concerns regarding intellectual property rights to restrictions on foreign direct investment deemed excessive by the US. The United States and China play important roles in each other's economies and commerce, but they are also competitors, they fight for global market share, and China's rise has pushed the United States' role behind.

The competition between them has grown more pronounced since China's transition away from labor-intensive industry sectors and toward the production of high-tech products, an area in which the United States was formerly a global leader.

Since the beginning of the China-US trade relationship, import tariffs have been a source of contention. China was a founding member of the GATT when it was formed, but it left the agreement in 1949. Despite no longer being a member, it was accorded the same US most-favored nation (MFN)¹³² tariff that the US provided to imports from most other

¹³² US most-favored nation (MFN)

The most-favored-nation (MFN) principle seeks to ensure equity among a country's economic partners. All partners are granted the same tariffs and terms as those granted to the "most-favored nation". The principle was incorporated into the 1948 General Agreement on Tariffs and Trade (GATT) and the 1995 World Trade Organization Agreement (WTO). Britannica, The Editors of Encyclopaedia. "most-favoured-nation treatment". *Encyclopedia Britannica*, 21 Mar. 2016, <https://www.britannica.com/topic/most-favored-nation-treatment>. Accessed 22 January 2023.

major economies in 1980, which meant an average tax on Chinese exports of roughly 5% to 7%. Taxes were reduced further in the following decades, and by 2017, US duties on imports from China were below 3%, while Chinese tariffs on imports from the US were substantially higher¹³³.

Since Donald Trump's election as President of the United States in 2016, much of his trade agenda has been based on anti-globalization. In the years afterward, the United States dropped out of many multilateral trade accords and has accused China of unfair practices and an excessively aggressive development strategy. These accusations, according to Iqbal, were based on “asymmetry in bilateral trade flows with China, takeover of the US market by China, technological loss, intellectual property rights violation, and so on”.¹³⁴ The situation deteriorated further in March 2018, when the United States imposed import tariffs on steel and aluminum. In the following month China reacted with tariffs on some US products (aluminum, meat, fruit, and wine)¹³⁵.

This might be seen as the start of the so-called trade war. It quickly developed as a result of both sides' raising tariffs, and it had a severe impact on the economies of the two nations, as well as on the world economy and exports. During the next year, the United States raised tariffs on more than 70% of its Chinese imports, raising the average US tariff on Chinese imports from 3% to more than 12%. Whereas China's average tariff on US goods increased from less than 10% to more than 18%¹³⁶.

In recent years, it appears that the trade war has been less aggressive, probably because to the massive consequences of the Covid-19 outbreak on both economies and a change in leadership in the United States. China's high tariffs on imports like crude oil, imposed in 2018, were reduced significantly in February 2020. The United States has also stated that it intends to lower its tariffs¹³⁷.

In conclusion, despite certain substantial difficulties in the trade relationship between China and the United States, its significance cannot be overstated. The United States remains the most important export destination for Chinese goods, and this does not appear to be changing anytime soon.

¹³³ (Bown, 2019)

¹³⁴ (Iqbal, et al., 2019)

¹³⁵ (Itakura, 2020)

¹³⁶ (Bown, 2019)

¹³⁷ (Chowdhry & Felbermayr, 2020)

3.2 Hong Kong and re-exports

The Hong Kong Special Administrative Region (HKSAR) of the People's Republic of China has become a Special Administrative Region of the People's Republic of China since 1 July 1997. Its economic and financial autonomy is granted by the “One Country, Two Systems” principle. It was a contracting party to the General Agreement on Tariffs and Trade (GATT) and it's a founding member of the World Trade Organization (WTO)¹³⁸.

In terms of export value, Hong Kong was the second most important destination for Chinese exports in 2021, after only the United States (\$577 billion). Exports to Hong Kong accounted for 10.39% of total exports. Electrical machinery (\$195.5 billion), machinery (\$54.7 billion), and pearls and precious stones (20.8 billion) were the most exported product categories from China to Hong Kong in 2021. Electrical machinery (\$198 billion) and machinery (\$39 billion) dominated China's Hong Kong imports. The entire amount of bilateral trade between the two areas was more than \$750 billion in 2021.

Table 3.3 Chinese exports to Hong Kong as percentage of total exports

Year	Share of total exports
1992	44,16%
1995	24,19%
2000	17,86%
2009	13,83%
2016	13,69%
2019	11,16%
2021	10,39%

Table 3.3 demonstrates that the percentage of overall Chinese exports destined to Hong Kong has been dropping; before, exports to Hong Kong were significantly more crucially important to the Chinese economy. It accounted for 44.16% of total exports in 1992, but by 2000 it had dropped to less than 18% and continued to fall. Even while this percentage has been falling, export value has been increasing significantly; it is explained by the fact that exports toward other nations, such as the United States, have been expanding impressively.

¹³⁸ (Trade and Industry Department of the Government of the Hong Kong Special Administrative Region, 2022)

Trans-shipments and re-exports

Hong Kong is rather significant in total Chinese trade and exports, but its role is not limited to being a consumer of commodities; it is really more significant as an entrepôt economy.

Entrepôt economies, such as Hong Kong, facilitate commerce between buyers and sellers from various countries by importing goods from one country and then distributing them to a final destination. An entrepôt, according to the Collins dictionary, is “a trading center or port at a geographically convenient location, at which goods are imported and re-exported without incurring liability for duty”¹³⁹.

We must differentiate between re-exports and trans-shipment; the entrepôt function encompasses both, but the distinction is critical, particularly in terms of trade value and for the purpose of examining Chinese exports.

- Trans-shipment indicates that items sent to an overseas destination transit via Hong Kong but do not clear customs or undergo any kind of processing, and hence are not considered part of the country's trade.
- Re-exports are officially part of Hong Kong trade because they clear customs when entering the city. In effect, they must clear customs twice: first when they are imported into Hong Kong and again when they are re-exported to a different destination. During their stay in Hong Kong, goods might well be packed, sorted, graded, mixed, or diluted. Before being re-exported, they may even go through a minimal manufacturing procedure¹⁴⁰.

Table 3.4 Chinese exports to the US via Hong Kong (in \$ million)

	1995	1997	1999	2001	2003	2005
Total exports to US	24728	32740	42004	54355	92626	163180
Direct exports to US	9842	18401	27087	39986	75424	141943
Exports to US via Hong Kong	14260	14106	14692	13893	16296	20410
Share of re-export	58%	43%	35%	26%	18%	13%

Source: UN Comtrade; Ferrantino and Wang, Accounting for discrepancies in bilateral trade, 2008

¹³⁹ Collins Dictionary definition for “Entrepôt”, visited on 20 January 2023, <https://www.collinsdictionary.com/it/dizionario/inglese/entrepot>

¹⁴⁰ (Sung, 1986)

We can gain a better understanding of the situation and the significance of Hong Kong's role as an entrepôt by looking at table 3.4, which shows Chinese exports to the United States between 1995 and 2005, as well as what percentage of those were exported directly from China and what percentage went through Hong Kong first and were later re-exported.

In 1995, 58% of Chinese exports to the United States went through Hong Kong and were not directly exported. The proportion of exports sent via Hong Kong has decreased dramatically over the period in consideration, with just 13% in 2005, which is still a considerable quantity even though much smaller. Significant manufacturing processes cannot be performed on commodities for re-export, although this does not prohibit minor processing, such as sorting or packaging, or service activities, such as marketing or transportation, which contribute to the markups added to goods when re-exported. Chinese goods are significantly more expensive when they leave Hong Kong than when they arrive. This is due to customs, insurance, and freight expenses¹⁴¹. For example, according to Feenstra and Hanson's research of trade statistics between 1988 and 1998, 53% of Chinese exports were routed through Hong Kong in this method throughout the ten-year period, and the average markup on Hong Kong re-exports of Chinese goods was 24%. This profit is so important to the country's economy that, in 1998, re-exports of Chinese goods accounted for 47% of Hong Kong's GDP, and Hong Kong markups on these re-exports totaled 12% of GDP, nearly double that of manufacturing, which had previously been Hong Kong's largest contributor to the country's GDP but only accounted for 6% of GDP in 1998¹⁴².

This is not a recent phenomenon; up until the early 1950s, Hong Kong's economy was heavily reliant on entrepôt commerce with Mainland China, with about 80% of its imports from China re-exported, accounting for 16% of China's total exports¹⁴³. However, following China's participation into the Korean War, the United Nations imposed a trade embargo on China in 1951. China subsequently reoriented its commerce to communist nations, and Hong Kong's entrepôt trade dwindled. Hong Kong's economic growth was

¹⁴¹ (Feenstra & Hanson, 2004)

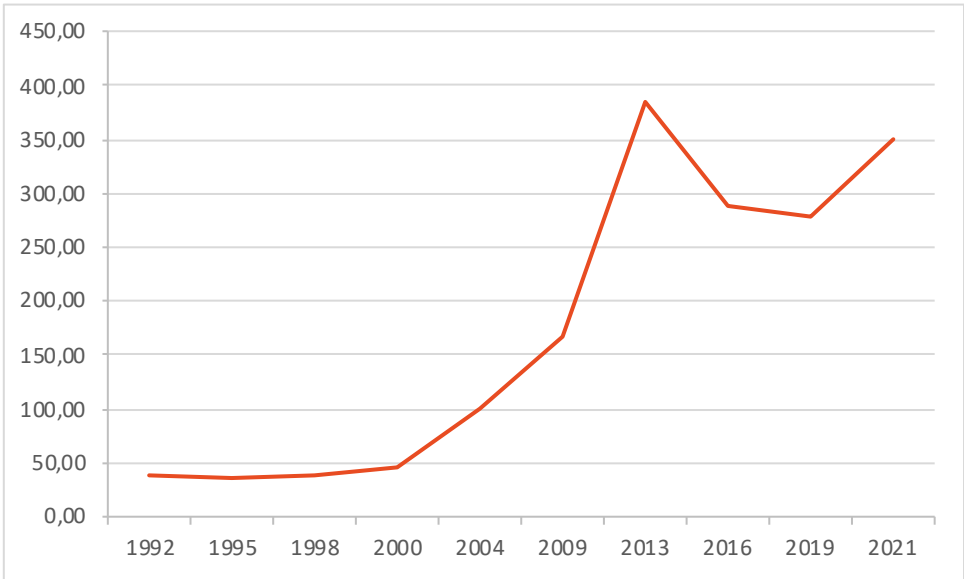
¹⁴² (Feenstra & Hanson, 2004)

¹⁴³ (Sung, 1986)

mostly reliant on industrialization between 1950 and 1980. It wasn't until the Open-Door policy that Hong Kong's position as an entrepôt was restored. The proportion of Chinese exports re-exported through Hong Kong increased fast, and re-exports surpassed retained imports in 1984¹⁴⁴.

Furthermore, because of the new geographical division of labor that had evolved during this period, Hong Kong gained even more importance for Chinese exports. it began to shift its manufacturing facilities and activities to the Pearl River Delta (PRD).

Graph 3.5 Chinese exports to Hong Kong 1992-2021 (in \$ billion)



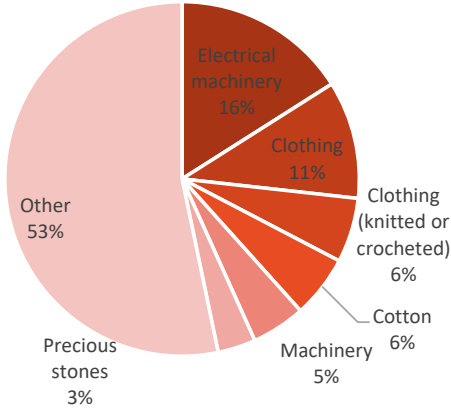
Among the measures and agreements implemented by the two nations, the entrance to the WTO had by far the greatest influence on trade. As shown in graph 3.5, it was in 2001 that Chinese export of commodities to Hong Kong started growing quickly. Governmental collaboration between China and Hong Kong first officially began when China joined the World Trade Organization (WTO) in 2001. This was greatly facilitated by the nations' earlier increased ties in terms of cross-border commerce and investment in the previous years. Overall, the political shift produced by Hong Kong's return to China in 1997 had little influence on cross-border economic integration¹⁴⁵.

Because of the worldwide economic slowdown in 2013, which caused a drop in Chinese manufacturing exports, all Chinese exports slowed in the following years, including those to Hong Kong. Export growth has recovered, and while it has not yet returned to its peak

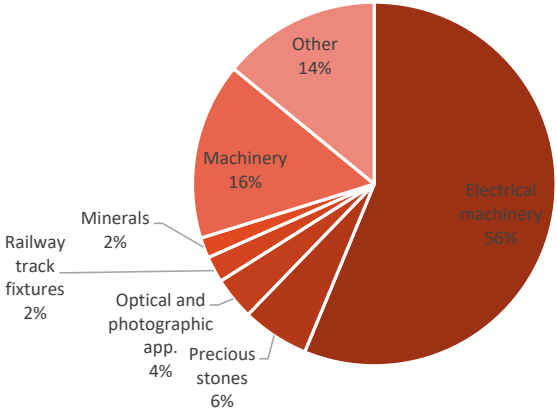
¹⁴⁴ (Shen, 2008)
¹⁴⁵ (Shen, 2008)

(\$384.5 billion exported in 2013), it is near; it surpassed \$350 billion in 2021 and is likely to recover entirely shortly.

Graph 3.6 Top categories of Chinese exports to Hong Kong in 1995



Graph 3.7 Top categories of Chinese exports to Hong Kong in 2021



Graphs 3.6 and 3.7 depict the evolution of the composition of Chinese exports to Hong Kong from 1995 to 2021. In 1995, electrical machinery accounted for 16% of total exports, followed by clothing items (11%), clothing (knitted or crocheted items) (6%), cotton (6%), machinery (5%), and precious stones (3%). Meanwhile, electrical machinery (56%), machinery (16%), precious stones (6%), optical and photographic apparatus (4%) and railway fittings and minerals (both 2%) are the top export categories in 2021.

The most noticeable differences are that clothing items knitted and not together accounted for more than machinery's share of 1995 exports, but they are no longer present in 2021's top exports; electrical machinery remained the top exported category, but its overall importance increased dramatically, from 16% to 56%; and machinery also increased noticeably.

Even if the importance of Hong Kong as a trading partner for China has declined in recent years, it is still the second most important after the United States, and re-exports are still significant for Chinese exports. But how did Hong Kong become an entrepôt commercial hub?

The reason behind such a concentration of trans-shipments is apparent: no need to clear customs or pay duties leads to minimal transport and communication costs, but these reasons don't explain the growth of re-exports.

We can identify four major factors by analyzing the condition of relations between China and Hong Kong:

- Geographically, but not only, Hong Kong functions as a contact point between China and the international trade market. The two nations' cooperation promotes technology transfer into China as well as an inflow of foreign exchange earnings.
- Another incentive of entrepôt trade is to avoid trade barriers and avoid paying taxes. Hong Kong is the freest economy in the world¹⁴⁶, and because it has no tariffs on products entering its borders and far lower taxes than China, re-exporting from Hong Kong may be a means for businesses to avoid taxes and duties¹⁴⁷.
- Hong Kong's scarcity of governmental intervention and oversight also makes it an exceptionally flexible and fast-changing economy, giving it a significant advantage over the Chinese economy's rigidly controlled and regulated economy in terms of exports and keeping up with rapidly changing international demand.
- According to Feenstra and Hanson, Hong Kong's most significant advantage in the trade between China and the rest of the world is an informational advantage; Hong Kong traders can locate buyers for Chinese goods more easily than overseas traders, assisting Chinese suppliers in finding markets for their goods abroad. If there is a lack of information and understanding between buyers and sellers, they are likely to require the assistance of a middleman¹⁴⁸.

In conclusion, although Hong Kong has been overtaken as an export destination by the United States, it remains highly significant, and exports are expanding steadily. Its function as an entrepôt is crucial to its relevance to the Chinese economy, and this does not appear to be changing anytime soon.

¹⁴⁶ The Fraser Institute ranked Hong Kong as the world's freest economy in the Economic Freedom of the World 2022 Annual Report. (Economic Freedom of the World: 2022 Annual Report, Fraser Institute, September 8, 2022 <https://www.fraserinstitute.org/studies/economic-freedom-of-the-world-2022-annual-report>)

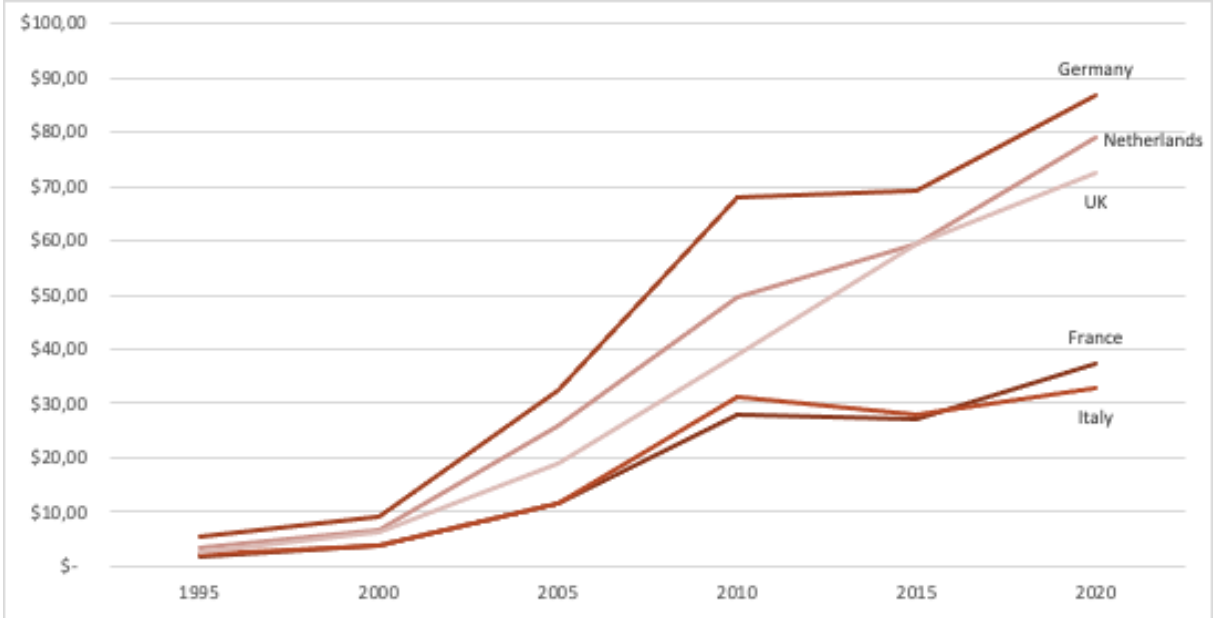
¹⁴⁷ (Feenstra & Hanson, 2004)

¹⁴⁸ (Feenstra & Hanson, 2004)

3.3 The European Union

Chinese exports to European nations have been significant for the Chinese economy for decades, they were \$69.1 billion in 1995, accounting for 21% of overall exports.

Graph 3.8 China's main export destination in the EU



Graph 3.8 shows that, out of the exports to Europe, in 1995 the main destinations were Germany (20.4%), the United Kingdom (17.7%), France (11%), the Netherlands (9.89%) and Italy (8.71%). Between 1995 and 2020, Chinese exports to European nations increased significantly, and for a period so did their percentage of overall exports; in 2009, the total was \$1.350 trillion, with a value of \$332 billion billion sent to Europe, accounting for 24.6% of total exports. This percentage then fell again, reaching 20.5% in 2013 and in 2020 it was 22%, with an export value of \$592 billion. In 2020, out of the exports to Europe, the main destinations were Germany (19%), the United Kingdom (12.4%), the Netherlands (11%), Russia (8.57%) and France (6.64%).

Between 1995 and 2020, Germany remained the biggest importer, and its share did not vary significantly, comparable to the United Kingdom, which remained the second destination and only lost some percentage points. A significant shift occurred in the relationship with France, which accounted for 11% of exports in 1995 but just 6.64% in 2020. The Netherlands continues to have around 10% to 11% of total exports, however this figure might be influenced by the Rotterdam effect. The Rotterdam effect (also known as the Rotterdam-Antwerp effect) refers to inaccuracies in trade calculation caused by a

significant quantity of transshipment of goods arriving at the Rotterdam port. Similarly, to the Hong Kong entrepot, these products are not imported to the Netherlands, but rather unloaded from one ship and reloaded into another.

When discussing Europe, we should make a distinction between European nations in general (which also include non-EU countries such as Russia and Switzerland) and EU member nations that are members of the European Union. This distinction is significant since the EU frequently functions as a unit in terms of foreign trade, with unified regulations and tariffs.

Table 3.5 Top export destinations in 2021

Rank	Country	Export value (in € million)	Share of Chinese exports
1	United States	488.405	17.2%
2	EU27	438.981	15.4%
3	Hong Kong	297.320	10.4%
4	Japan	140.274	4.9%

Source: European Commission, https://commission.europa.eu/index_en

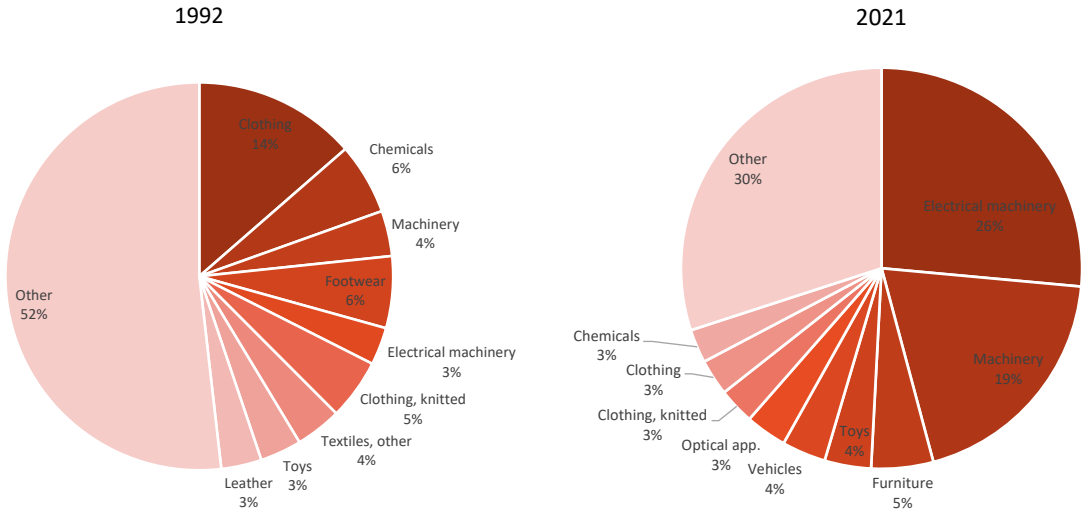
As previously stated, the biggest export destinations for Chinese products are the United States and Hong Kong, but if we regard the EU27¹⁴⁹ as a whole rather than individual countries, it accounts for 15.4% of all Chinese exports, ranking second only to the United States and ahead of Hong Kong.

The composition of exports to the EU has significantly changed in the past decades. Graph 3.9 shows that the top export category in 1992 was by far Clothing (clothing items with 14% of exports and knitted clothing items with 5%, accounting for a total of 20% of exports), followed by Chemicals and Footwear both accounting for 6% and then the following categories all account for less than 5%.

¹⁴⁹ Abbreviation of European Union (EU) which consists of 27 countries (Belgium, Bulgaria, Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden), as of 1 February 2020. (UK left the EU on 31/1/2020)
European Commission, visited 28 January 2023, <https://commission.europa.eu/>

The composition in 1992 was also very fragmented, with the exception of Clothing, most categories amounted for a modest fraction of the total, and the top nine categories combined accounted for less than half of all exports in 1992, but in 2021 the leading two alone account for 45%, and the top nine together account for nearly three quarters of all exports. Electric machinery (26%) and machinery (19%) were the top two exports in 2021, increasing from 3% to 26% and 4% to 19%, respectively. Clothing has lost a significant portion of its export market share, accounting for only 6% of total exports.

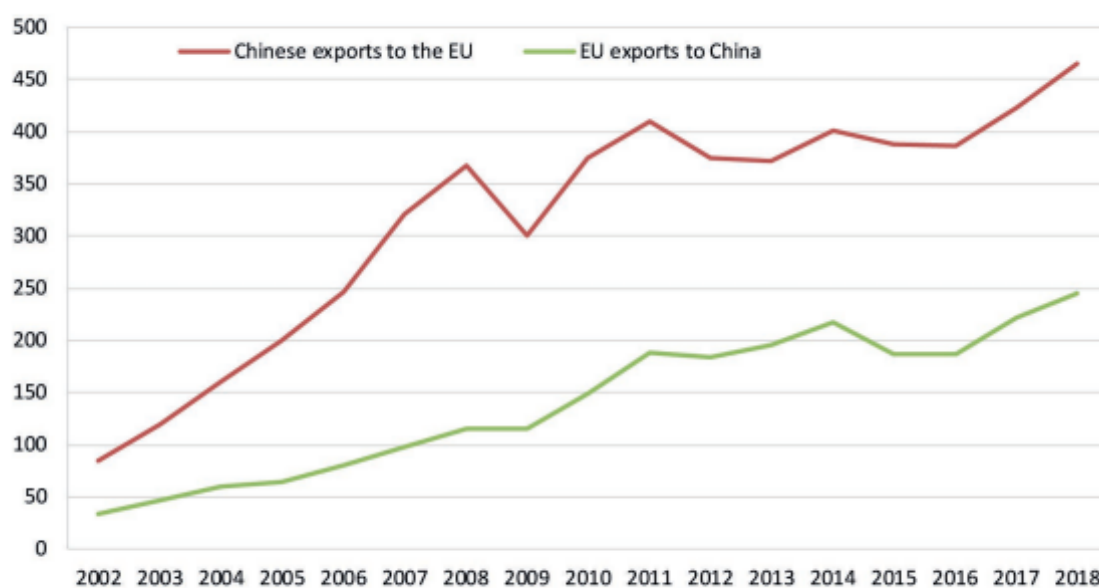
Graph 3.9 Composition of Chinese exports to the EU in 1992 and 2021



China and the European Union officially established diplomatic ties in 1975, the European Union was still the European Economic Community (EEC) and signed the Trade and Cooperation Agreement in 1985. However, it was not until the mid-1990s that bilateral trade volume began to expand significantly. This was only possible because of the political alliance that had built between the two during the previous decade. Since its progressive openness to foreign commerce in the late 1970s, China has been strengthening links with Europe, and in 1979 it enacted the Joint Venture Law, resulting in the first European investors returning to China after a significant period of isolation in 1980.

The relations got even stronger after China joined the World Trade Organization (WTO). Graph 3.10 shows the tremendous rise in the EU-China trade volume in terms of merchandise exports following 2001. Both Chinese exports to the EU and EU exports to China increased quickly, but the first saw a significantly bigger growth.

Graph 3.10 EU-China trade volume (in \$ billion)



Source: World Bank WITS (<https://wits.worldbank.org/>).

Exports increased steadily until the 2008 global financial crisis, which had a considerable negative impact on international trade flows. Export growth suffered a serious damage, but it swiftly rebounded, and it had already recovered by 2010. As a matter of fact, following the crisis, the economies of China and the EU have become increasingly interdependent on each other. Starting in 2012 and continuing into the following years, there has been a second downturn, which is connected to a general reduction in European demand and a general decline in the EU's contribution to global commerce, which in 2005 accounted for 37% of worldwide trade but had fallen to 31% by 2015¹⁵⁰.

The graph illustrates that export growth resumed after 2015-2016, if somewhat not at the same rate as before. The epidemic later had a significant impact on worldwide trade flows. The crisis that followed the Covid-19 pandemic had a significant impact on bilateral trade between China and the EU; Chinese exports dropped in 2020 but recovered swiftly, far faster than most nations, surpassing pre-pandemic levels in 2021.

The EU, like the US, has certain challenges in its economic relations with China. This is due to similar concerns, such as limits on EU investment in China, intellectual property rights protection, China's forced technology transfer, and state control of Chinese enterprises. Furthermore, China's trade surplus with the EU is substantial, but significantly lower than its surplus with the US. Since the 1990s, trade imbalances have been a feature of China-

¹⁵⁰ (Karkanis, 2018)

EU trade. China has been exporting items to the EU at considerably larger quantities than importing, resulting in the EU relying on Chinese export significantly more than the contrary¹⁵¹. China is both the EU's top trading partner and top import source, in terms of individual nations, just three EU members have a trade surplus with China: Germany (\$8.40 billion), Ireland (\$7.92 billion), and Finland (\$432 million). According to Cooban¹⁵², Europe is currently significantly reliant on Chinese exports for a variety of categories, including rare earth metals used in hybrid and electric vehicles, wind turbines, and solar panels.

Tariffs are yet another recurring issue in bilateral economic relations. This is mostly due to the fact that, while Chinese exporters face high EU tariffs and different trade defense measures in particular sensitive areas, the duties incurred by EU enterprises in China are far higher and cover a broader range of sectors. For example, the average tariff imposed to EU exports entering China was 8.75 percent in 2017, compared to 1.4 percent for EU goods entering the US¹⁵³. China's ascent has also created rivalry for the EU, whose export basket was comparable to China's, and which has lost a major proportion of world commerce as a result of China's emergence as a manufacturing giant.

The Belt and Road initiative

To improve commercial and political connections with Europe and increase exports, in the autumn of 2013, China proposed the Belt and Road (B&R) initiative (previously referred to as "One Belt, One Road"), which consists of two parts: an inland Silk Road Economic Belt connecting China to Central Asia and Europe and an ocean-based Maritime Silk Road connecting China to South Asia and beyond¹⁵⁴.

The project is a development plan that intends to strengthen cross-border infrastructure in order to lower transportation costs, which have a significant impact on China-EU trade due to the vast geographical distance between China and Europe, with the goal of enhancing exports and expanding the Chinese export market¹⁵⁵.

According to Wang and Qiu¹⁵⁶, the building of high-speed rails would allow Chinese goods to reach the European market in two weeks, potentially reducing shipping times by one

¹⁵¹ (Karkanis, 2018)

¹⁵² (Cooban, 2022)

¹⁵³ (Dadush, et al., 2019)

¹⁵⁴ (Wang, et al., 2019)

¹⁵⁵ (Lo, 2018)

¹⁵⁶ (Wang, et al., 2019)

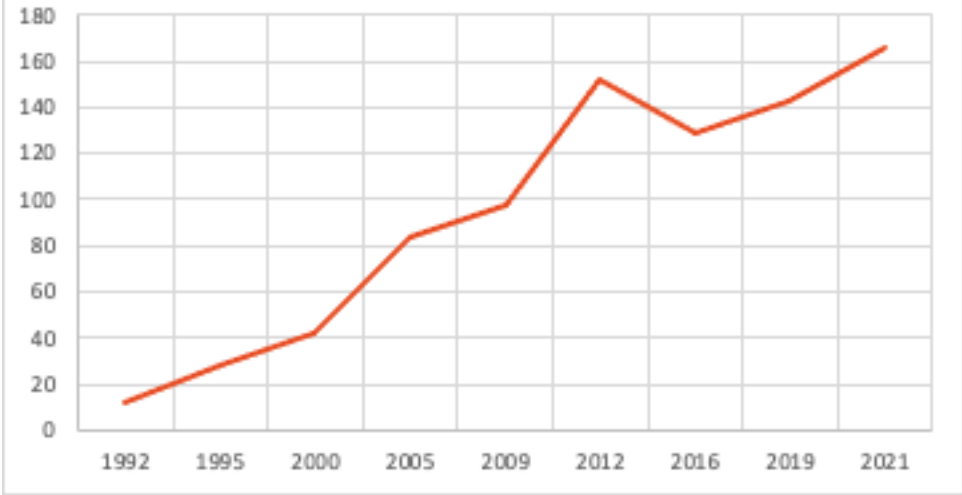
week. Reduced shipping time would significantly cut expenses and increase export volume to Europe. Improving railway links would have a particularly positive impact on the export of manufactured products, machinery and transportation equipment.

In conclusion, despite the recent slowing of export growth, the EU remains a major player in China's foreign trade, and it appears that bilateral trade will expand much further in the future as a result of the Belt and Road Initiative.

3.4 Japan

Japan is the third most significant export destination for Chinese products, accounting for 5% of total exports in 2020. Even though it directly follows the United States and Hong Kong as the leaders in Chinese trade (considering individual nations, therefore not the EU), its amount of exports is substantially smaller than theirs, accounting for only half of the country directly above it (Hong Kong, which receives 10% of Chinese exports). Nonetheless, Japan is the world's third largest economy and a vital trading partner for China and has played a significant role in its economic development.

Graph 3.11 Chinese exports to Japan 1992-2021 (in \$ billion)

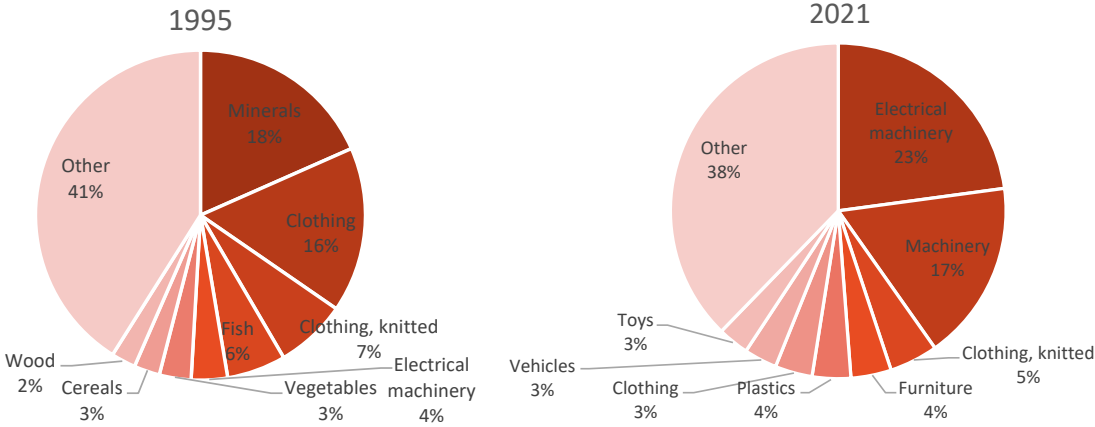


Chinese exports to Japan have increased dramatically since the 1990s, rising from \$11.68 billion in 1992 to \$165.82 billion in 2021, as shown in graph 3.10. It increased approximately 300% between 1992 and 2001, and then nearly 270% between 2001 and 2021. The trade partnership with Japan has been critical for China not just in terms of exports, but also in terms of the process of “catching up”. Because of the production network and division of labor, China was able to gain knowledge and

technology from Japan, which was technologically more advanced and provided China with industrial technology and investment¹⁵⁷.

The two countries established diplomatic relations in 1972, and bilateral trade was positively impacted by China's entry into the WTO in 2001¹⁵⁸. The export composition has changed considerably since then. Textiles and apparel were China's biggest export category to Japan in 1992, accounting for about a third of all Chinese exports to Japan for the year. Ten years later, textiles were still the leading exports, but machinery equipment had increased dramatically, growing from just 5% in 1992 to 27% in 2001¹⁵⁹.

Graphs 3.12 and 3.13 Composition of Chinese export to Japan in 1995 and 2021



Graphs 3.12 and 3.13 demonstrate that the export mix of Chinese exports to Japan has undergone some noteworthy changes between 1995 and 2021. Minerals (18%) and Clothing (clothing products accounted for 16% of total exports, while knitted clothing items accounting for 7%) were the leading export sectors in 1995.

A significant portion was made up of edible items, such as Fish (6%), Vegetables (3%) and Cereals (3%). Electrical machinery was present, although in a much lower percentage than it will be in the following period, while Wood accounted for 2% of exports. It is worth noting that non-manufactured commodities represented for a sizable portion of the year's exports. By 2021, China's export basket had altered dramatically.

Clothing had lost a large proportion of overall exports (clothing items are now 3% and knitted clothing items are 5% of the total), and Minerals, which had been the leading

¹⁵⁷ (Armstrong, 2012)
¹⁵⁸ (Tian, et al., 2017)
¹⁵⁹ (Chan & Kuo, 2005)

category in 1995, were no longer among the top categories. Electrical machinery climbed from 4% to 23% of Chinese exports to Japan in 2021, followed by Machinery with 17%. The remaining major categories are Furniture (4%), Plastics (4%), and Toys (3%); interestingly, the export of edible items is not nearly as important as it formerly was, and it has been significantly overtaken by manufactured goods.

China is presently Japan's biggest trade partner, although Japan's prominence as an export destination for Chinese commodities has declined since the early 2000s; it was China's top trading partner until 2003, when it was eclipsed by the United States and subsequently by the European Union. Despite political tensions, China-Japan commercial links have remained strong. Even when the bilateral relationship was threatened by the repercussions of the China-US trade war, which Japan was caught in the middle of. Later, in spite of the COVID-19 epidemic, trade remained strong, with China's share in Japanese trade reaching all-time highs in both total trade and import values in 2020.

4. Conclusion

Since its opening to the world in 1979, China has seen tremendous progress, becoming a worldwide leader and seeing unparalleled economic growth.

China has witnessed one of the most remarkable economic advances in the world as a result of an export-oriented strategy, a concentration on processing exports, and an exposure to foreign investment.

China was successful in implementing an export-oriented strategy and capitalizing on its comparative advantage of a vast labor pool, resulting in \$3360 billion in Chinese exports in 2021.

Before the Open-Door policy China was a nationalist and self-sufficient nation, foreign trade was highly limited and entirely under the supervision of the central government. However, it was able to use its comparative advantage of cheap labor to integrate itself into the global supply chain and production networks.

Following that, the nation's economy developed enormously and through multiple industrial upgrades, shifted its focus away from heavy industries and toward commodity exports, and afterward away from labor-intensive sectors, focusing on the manufacturing and export of machinery and electronics.

Experts agree that implementing an export-oriented strategy is a key technique to boost economic growth for a developing country that wishes to participate in the international division of labor and use globalization to improve its economic development¹⁶⁰.

According to Wei and Wang, an exporting country's export commodity structure reflects its international status and the extent of its trade gain. As a result, China leveraged processing commerce to enhance economic growth, learn by doing, and acquire knowledge, allowing it to convert its export commodity structure from labor-intensive and resource-intensive to capital-intensive and technology-intensive.

China is not the first or the last country to achieve success with an export-led growth model, but the considering the size of China and the level of growth it is an unprecedented success, which has had far-reaching consequences for the country's economy as a whole. From 1979 through 2021, China's GDP grew at an annual rate of 9.2% on average. It has

¹⁶⁰ (Wei & Wang, 2013)

slowed in certain circumstances (the lowest being 2.2% growth in 2020), but it has never stopped or seen negative growth. The rapid and substantial increase in exports was also due to a dramatic change in trade composition with an impressive rise in a few sectors, namely machinery and electrical machinery, a particular focus of high-tech products has also played a major role in the transformation of China into a sophisticated exports country, and not simply the “World's Factory”.

The development was not evenly distributed throughout all areas of the economy. In fact, it is concentrated on a few industries, with growth focused in a few commodities within those industries. Furthermore, China's export structure has shifted dramatically. Whereas labor-intensive businesses dominated in the early years of the export boom, capital-intensive industries have become significantly more influential in the years afterwards. We have seen in the second chapter of this thesis, the main engine of the early export boom were labor-intensive manufactured items such as clothing, footwear, and toys, products long defined as emblematic examples of Chinese exports and often related to the label "Made in China". The complexity of Chinese products rose over time, with exports of machinery becoming the primary export.

The primary export industries saw considerable transformations, but the destinations of such exports also evolved throughout this period as China's relations with other countries changed. Since the Open-Door policy, China's key trading partners have changed, connections with Asian nations have strengthened, and relations with the US and the EU have suffered some setbacks. The top export destinations in 2020 were the United States, Hong Kong, and Japan.

Relations with the United States have also been a defining feature of the evolution of the Chinese economy. The US is China's largest trading partner and this bilateral trade was a major driving engine of China's export development but it has also become a fierce competitor.

Following the reforms, China's growth was heavily dependent on the US for the import of Chinese goods, as well as FDI inflows and the relocation of American manufacturing companies within China. China's involvement in the global economy has grown in importance, as has its impact in the US market.

The competition between the two nations has intensified as a result of China's shift away from labor-intensive industries and toward the manufacture of high-tech products, an

area in which the US was formerly a worldwide leader. The relationship has gotten more competitive and, at times, hostile. Other causes for mistrust between the two were added, including political differences and an unfavorable trade balance. The US often claimed that China's access to the US for its exports and investments was far higher than what the US had in China¹⁶¹.

For years, rivalry has increased and spread into numerous industries, including competition for import and export markets and technology. To this day, the relationship is uncertain, but both economies rely significantly on each other, and a further deterioration in the relationship would be disastrous for both nations' exports and economy.

¹⁶¹ (Harding, 2019)

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