

## The Impact of Sino-US Trade War on Chinese Manufacturing Industry and Countermeasures

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**Abstract:** Since the reform and opening up, China's manufacturing industry has developed rapidly, and China has become a veritable manufacturing power. As an important contributor to economic growth and an important component of the secondary industry, manufacturing has always played an irreplaceable pillar role in China. At the moment, the Sino-US trade war is heating up, and China's manufacturing industry is facing difficulties. This paper sorts out the development status of China's manufacturing industry, discusses the impact of Sino-US trade war on Chinese manufacturing, and puts forward some targeted suggestions for the development of China's manufacturing industry.

### Introduction

The manufacturing industry is the source of power for China's economic growth since the reform and opening up, and it is the foundation of the country and the foundation of a strong country. Changes in the manufacturing structure and changes in the total amount will directly or indirectly affect all aspects of the Chinese economy. Manufacturing is also a dominant industry for China to participate in international trade. After the 2008 financial crisis, the American elite began to reflect on the US government's many years of de-industrialization policies. Gary Pisano, a professor at Harvard Business School, pointed out in his book that the decline of manufacturing will weaken the ability of the United States to innovate and reduce the competitiveness of the United States. Due to the long-term separation of production and R&D in the US manufacturing industry, the shortage of manufacturing and the lack of domestic investment will lead to the gradual erosion of the US industrial commons, the lack of innovation capacity, and the destruction of the industrial ecosystem. Therefore, the United States must reinvigorate the manufacturing industry. In this context, in March 2018, the US President Trump Administration issued a "301 Investigation" report issued by the trade representative to instruct the relevant departments to impose tariffs on China's exports of about 60 billion US dollars to the United States. On May 10, 2019, China and the United States announced the failure of trade negotiations. The United States immediately raised tariffs on about \$200 billion of goods exported from China to the United States, from the previous 10% to 25%. China has decided to raise tariffs to 25% on about \$60 billion worth of goods originating in the United States. This marks that the Sino-US negotiations that took more than a few months failed to take effect, and the Sino-US trade war continued to heat up. From the perspective of the United States in terms of increasing tariffs on Chinese goods, the United States is not a medium- and low-end manufacturing industry with comparative advantages, but a

high-tech industry that is developing in China Manufacturing 2025. Including new energy vehicles, aviation, new materials, etc. US Secretary of Commerce Ross believes that "Made in China 2025" is a direct threat, and "Made in China 2025" is repeatedly mentioned in the US price list. It can be seen that curbing the development of China's manufacturing industry is an important reason for the US to launch a trade war.

### **1. The status quo of China's manufacturing industry after the Sino-US trade war**

Since the reform and opening up, China has embedded its global value chain with its low labor cost. The manufacturing industry has grown rapidly and its scale has grown to become the world's number one and has become a veritable manufacturing country. According to the "China Industrial Competitiveness Report", the increase in the share of Chinese exports in the international market is mainly due to the increase in the share of manufactured goods. Manufacturing is the main driving force for the continuous improvement of China's export market share. While China's manufacturing industry is developing rapidly, China's economy has also entered a stage of rapid development. The income level of residents has been continuously improved, effectively driving the development of other industries and promoting China's formation of a modern industrial system. The manufacturing industry has made outstanding contributions to China's economic development from the low-income stage to the middle-income stage. According to World Bank data, in 2010, the added value of China's manufacturing industry surpassed the United States for the first time in the world, ranking first in the world. In 2018, China's manufacturing added value accounted for more than 28% of the world's share. Close to the sum of the United States, Japan and Germany. Hundreds of industrial products are ranked first in the world.

With the support of national policies in recent years, China's manufacturing level has improved. The increase in manufacturing industry has shown a trend of increasing year by year, but the growth rate has become more and more gradual. However, compared with the advanced level of the developed countries, the R&D and market expansion of domestic manufacturing technologies are still uneven, and China's manufacturing industry is still large but not strong. In terms of independent innovation capability, resource utilization efficiency, industrial structure level, informatization degree, quality benefit, etc., the gap with developed countries such as the United States is obvious, and the task of transformation and upgrading and leapfrogging development is urgent and arduous. As Sino-US trade frictions continue to heat up, the United States has increasingly focused on the development of the manufacturing industry, and has introduced a bill to revitalize the development of advanced manufacturing industries and a manufacturing return policy to limit the development of China's manufacturing industry. The current Sino-US trade war is still within the controllable range. If it is further upgraded, it may bring adverse effects such as slowing growth, difficulty in upgrading technology, falling investment and industrial transfer to China's manufacturing industry. Although China's manufacturing industry ranks first in terms of size and total volume in the world. However, China's manufacturing industry has a large gap with industrial developed countries in terms of efficiency, efficiency, quality, industrial structure, sustainable development, and resource consumption. In the face of Sino-US trade wars, we must clearly understand that the Sino-US trade war is essentially a struggle for manufacturing. We must continue to regard manufacturing as the strategic focus of national economic development, systematically deploy and take targeted measures to reduce the impact of trade wars on manufacturing development. Promote China's manufacturing industry to become bigger and stronger, and realize the leap-forward development of China's manufacturing industry.

## **2. The impact of Sino-US trade war on Chinese manufacturing**

The trade war provoked by the United States directly hits China's exports to the United States. Moreover, the current major strategic transformation in the United States is also directed at manufacturing. The Sino-US trade war will have a greater impact on China's manufacturing industry. Attracted by the US manufacturing return policy, China's large number of export processing trade enterprises may consider moving to Southeast Asian countries or relocating to Europe and the United States. This will reduce China's industrial supporting advantages, undermine China's manufacturing ecology, and increase the risk of China's industrial hollowing out. If China and the United States do not properly control trade wars, the possibility of Sino-US trade decoupling increases. The cancellation of trade exchanges between China and the United States will bring a major blow to the open development of China's manufacturing industry. Losing exchanges with global innovation powers in a new round of global technology and industrial transformation has brought severe challenges to China's technological upgrading.

### **2.1 The impact of Sino-US trade war on China's manufacturing import and export**

The current manufacturing industry is still an important source of China's trade surplus, and manufacturing is an advantageous area for China to participate in international competition. According to the data released by the General Administration of Customs of China, China's trade surplus in 2017 was 420.868 billion US dollars, of which imports to the United States were 153.943 billion US dollars, an increase of 14.54%. Exports to the US were 429.755 billion US dollars, an increase of 11.6%. The trade surplus with the United States was 275.812 billion US dollars, an increase of 10.02% year-on-year, accounting for 65.53% of China's total trade surplus. In 2018, the bilateral trade in goods between China and the United States totaled US\$633.52 billion, an increase of 8.5% year-on-year, accounting for 13.7% of China's total import and export of goods during the same period. Among them, China's exports to the United States were US\$478.42 billion, an increase of 11.3% year-on-year, accounting for 19.2% of China's total merchandise exports. Imports from the United States reached US\$155.10 billion, a year-on-year increase of 0.7%, accounting for 7.3% of China's total imports of goods. China's trade surplus with US goods was US\$323.33 billion, up 17.2% year-on-year (source: China Customs Administration). The Sino-US trade war is closely related to the development of China's manufacturing industry. The serious imbalance between Sino-US trade is the direct cause of this trade friction.

The United States has provoked a direct impact on China's exports to the United States. China's counterattack against the United States directly affects China's imports into the United States. China imposes tariffs on goods exported to the United States, and China's export rate will slow down, reducing the growth rate of China's economy. In May and June 2019, China's manufacturing purchasing managers' index (PMI) was 49.4%, lower than the expected 49.9%, which was lower than the 50.1% in April. (Figure 1) The new export order index and import index for May 2019 were 46.5% and 47.1%, respectively, down 2.7 and 2.6 percentage points from the previous month. It can be seen that the import and export of China's manufacturing industry is greatly affected by the Sino-US trade war (source: National Bureau of Statistics).



**Figure 1: China Manufacturing PMI Index**

(PMI index: PMI usually uses 50% as the cut-off point of economic strength. When PMI is higher than 50%, it reflects the expansion of manufacturing economy; below 50% reflects the contraction of manufacturing economy.)

## 2.2 The impact of Sino-US trade war on China's high-end manufacturing industry

In the context of the Sino-US trade war, it will be more difficult for China to introduce developed countries, especially the US high-tech, for industrial innovation. At the same time, if the domestic manufacturing industry can not be recognized in the US market of the world's advanced economies, its influence and competitiveness are greatly weakened, which is not conducive to the improvement of China's manufacturing industry in international competition. From the US product line that imposes tariffs on Chinese goods, there are medical equipment, high-speed rail equipment, biomedicine, new materials, agricultural machinery, industrial robots, information technology, new energy vehicles and aviation equipment, basically from "Made in China 2025". Industry scope. Some analysts said that the United States hopes to persecute China's commitment to strengthen intellectual property protection, reduce trade deficits, expand openness, and abandon industrial policies such as "Made in China 2025" through trade wars. In order to expand the US manufacturing export market, maintain the dominant position of the US high-tech industry, and hinder the transformation and upgrading of China's manufacturing industry. To maintain and consolidate the US manufacturing advantage in the long run.

At present, the United States mainly focuses on compulsory technology transfer and intellectual property protection in Sino-US trade. The industries that increase taxation mainly involve high-end technology industries such as aviation, modern railways (high-speed rail), industrial robots, new energy vehicles, and intelligent manufacturing equipment. However, the definition of the taxation industry announced by USTR is rather vague. After the list, the United States also added taxes to the low-end manufacturing industry in China. The US tariffs imposed on China have a greater impact on the two high-end technology industries, modern railways (high-speed rail) and industrial robots. The progress of the trade war will increase China's import tax on manufacturing goods in the United States, forcing the development of Chinese domestic high-end equipment to replace imported equipment. Instead, it has become an opportunity for high-end equipment innovation in China. China's high-end equipment

industry components are more inclined to import from Japan and Germany, so they are less affected by the Sino-US trade war. However, the progress of the trade war will affect the technical exchanges and cooperation between China and the United States, and the acquisition of Chinese companies by the United States. This is an unfavorable factor for the development of China's high-end manufacturing industry.

### **2.3 The impact of Sino-US trade war on China's low-end manufacturing industry**

China has a dominant position in the middle and low-end manufacturing industries such as clothing, textiles and leather. Even if the United States does not target China's low-end manufacturing industry, it is mainly aimed at China's high-end manufacturing. However, China's tariffs on US exports have generally increased, which will increase the export costs of Chinese manufacturing enterprises, and bring a series of chain reactions to the development of China's manufacturing industry, thus affecting the development of low-end manufacturing. Attracted by the US manufacturing return policy, China's large number of export processing trade enterprises may consider moving to Southeast Asian countries or relocating to Europe and the United States. This will reduce China's industrial supporting advantages and undermine China's manufacturing ecology. China's low-end manufacturing hollowing out risks will intensify.

On the one hand, due to the fierce market and other reasons, the profitability of low-end manufacturing enterprises is relatively low. Therefore, China's low-end manufacturing companies are rarely able to fully absorb the US's 25% tariff increase on Chinese goods, so the low-end manufacturing industry will transfer taxes and fees to consumers. This will increase the selling price of goods, reduce the market competitiveness of Chinese-made products, and thus affect the market share of the low-end manufacturing industry. On the other hand, some low-end manufacturing companies in China may be reluctant to transfer taxes and fees to consumers. As a result, the cost of goods produced increases, resulting in lower corporate profits and increasing the difficulty of survival of low-end manufacturing companies. In the case that China's future export trade situation is not clear, rising costs may change corporate investment decisions. The Sino-US trade war has caused some low-end manufacturing companies that cannot cope with the rising cost crisis to risk bankruptcy. This is different from mid- to high-end manufacturing companies, because low-end manufacturing products have a relatively low market substitution, making consumers have to share the tax transfer. Therefore, the middle and low-end traditional manufacturing enterprises under the Sino-US trade war should find a way to cope with the rising cost crisis as soon as possible.

### **3. China's manufacturing industry development strategy after the Sino-US trade war**

The huge potential of China's manufacturing industry market provides a broad market space for the development of advanced manufacturing. However, compared with the manufacturing industry in the United States, the R&D and market expansion of domestic manufacturing industries are still uneven. In addition, the low numerical control rate of technical equipment related to manufacturing-related industries cannot meet the market demand for medium and high-end advanced products. Throughout the competition and development of international manufacturing industry, facing the Sino-US trade war, how to integrate and disperse enterprise resources according to the market demand of domestic and foreign manufacturing industries, and form their own technological advantages in the manufacturing industry competition as soon as possible, is already in China's manufacturing An urgent problem before the industry.

### **3.1 Promote technological innovation in China's manufacturing industry and enhance corporate innovation capabilities**

In recent years, China's manufacturing industry has achieved remarkable results in scientific and technological innovation. However, compared with some manufacturing powers in the United States and Europe, the characteristics of China's manufacturing industry are “big but not strong”. For example, China has now become the world's largest automobile production and sales volume, but the core components such as electronic brakes, electric steering, air conditioning, and engine control are all in the hands of some developed countries such as the United States, Japan, and Europe. The core issue of the Sino-US trade war is intellectual property rights. The United States believes that China is suspected of forcing technology transfer and stealing intellectual property rights. Therefore, it is extremely important to enhance the independent innovation capability of Chinese manufacturing enterprises.

The development of the manufacturing industry in China should play a guiding role. It is necessary to rely on major projects to combine production, education and research to cultivate the ability of scientific research and innovation. The government must continuously strengthen the leading position and role of innovation in advanced manufacturing enterprises, and form a group of innovative leading enterprises with international competitiveness to support the healthy development of small and medium-sized enterprises. Establish a company-led industrial technology research and development system, promote the application and industrialization of results with core independent intellectual property rights, foster the development of strategic emerging industries, and enhance the overall level of innovation in China's manufacturing industry.

### **3.2 Improve product added value and build Chinese brand**

High quality products are the fundamental prerequisite for the sustainable development of the company. In particular, China's manufacturing products often encounter technical barriers. In order to protect the domestic industry and improve the technical requirements of importing countries, some countries have initiated 337 investigations on a number of manufacturing enterprises in Guangdong in the past few years to increase the export cost of China's manufacturing industry. Therefore, manufacturing enterprises should carry out production in accordance with international standards, from the production process, technology research and development, quality requirements, break through technical barriers and improve product quality. Most of the manufacturing products exported by China are mainly processed trade and order trade. The use of foreign brands is not recognized in the international market. And as China's demographic dividend effect weakens, its labor advantage gradually weakens. Relevant manufacturing enterprises with low added value should create Chinese brands with their own characteristics in marketing, and form new international competitiveness by improving service quality, user reputation and product innovation, and help China's high-end manufacturing.

China's manufacturing enterprises should make full use of market resources and let the market mechanism promote the continuous industrialization of manufacturing. Closely link manufacturing technology with industrialization, continuously improve product quality and added value, and create conditions for domestic industrial restructuring and upgrading. Attract more foreign manufacturing innovation resources and create more opportunities for the innovation and development of China's manufacturing industry. Promote the integration of manufacturing technology introduction and innovation, and improve the comprehensive competitive advantage of manufacturing enterprises. Relying on the existing resource advantages of Chinese enterprises, breaking the boundaries between industries and enterprises, and constantly expanding the industrial chain, giving certain attention to

enterprise investment, research and development of new technologies and industrialization.

### **3.3 Develop manufacturing emerging markets and expand the development space of manufacturing industry**

At present, China's trading partners are mainly concentrated in capitalist developed countries such as Europe, Japan and the United States. The diversification of international market forms brings potential uncertainty to the Chinese economy. On the international stage, on the basis of stabilizing diplomatic relations with developed countries, China should actively promote the construction of the "Belt and Road" with developing countries as the mainstay, and upgrade the "going out" strategy to "actively expand imports and encourage foreign direct investment. The new model of opening up to the outside world will develop 50 countries along the "Belt and Road War" into an emerging export market in China and broaden the development space of China's manufacturing industry.

According to China Customs statistics, in 2018, the total trade volume between China and the countries along the route was 8.87 trillion yuan, an increase of 13.3%, which was 3.6 percentage points higher than the overall growth rate. In the first half of 2019, the total volume of foreign trade with countries along the route exceeded US\$500 billion, a year-on-year increase of 3.2%. The proportion of China's goods trade with countries along the line reached 28.8%, an increase of 1.4% from the end of last year (Source: China Belt and Road website). China's good trade cooperation with countries along the Belt and Road Initiative can become a new impetus to expand the development space of China's manufacturing industry. Chinese manufacturing companies should develop in-depth markets in countries along the "Belt and Road" and conduct detailed market research to produce products that meet the needs of consumers in the countries along the route. Adopt appropriate market strategy, familiarize with national laws and customs, establish a good corporate image, and promote the export volume of China's manufacturing industry to a higher level.

### **3.4 Improve the training and introduction mechanism of advanced manufacturing talents**

The development of the manufacturing industry is inseparable from talent. The gap between China's manufacturing industry and developed countries such as Europe and the United States lies mainly in talents. The lack of senior management talents, senior engineering and technical personnel, and high-quality skilled workers in China is the main bottleneck restricting the development of China's manufacturing industry. Competition in the manufacturing industry has become more and more fierce in recent years, and competition will ultimately be attributed to talent competition. The United States has focused on personnel training in its development strategy. Therefore, in terms of developing the manufacturing industry, the Chinese government should adopt a more flexible approach and actively establish various talent platforms. Such as talent exchange platform and introduction platform, talent training platform, especially the training platform for innovative talents, use these platforms to introduce and cultivate advanced manufacturing talents.

In the face of trade disputes between China and the United States, the Chinese government should adopt a more flexible preferential policy, create a good environment that can attract talents, use talents, and retain talents, and vigorously introduce talents in science and technology and management that are needed for advanced manufacturing. Encourage advanced technology personnel at home and abroad to invest and start businesses in China. In particular, we must focus on the construction of advanced manufacturing bases, attract and hire high-level talents at home and abroad, and accelerate the construction of international and domestic talent highlands that are compatible with them. In addition, according to the development of advanced manufacturing industry, the corresponding courses and research directions are set up in colleges and universities. The school selects a group of outstanding

scientific and technical personnel to study abroad, study for a degree or go to domestic universities and research institutes for systematic study. Establish a flexible employment mechanism and encourage enterprises to introduce talents in terms of policies. Actively build a platform for talent mobility and green channels within and outside the province, establish an information system for overseas students and senior talents in developed regions, and establish an overseas talent resource pool according to the development needs of China's manufacturing industry to attract talents to return to China.

### **Conclusion**

The Sino-US trade war may have a negative impact on the short-term manufacturing industries such as computers, communications, and mechanical processing. In the long run, it will benefit China's innovative manufacturing enterprises. The US's concerns about the rise of China's manufacturing industry reflect the improvement of China's manufacturing industry. In fact, China's level of innovation is generally improving. In recent years, China's R&D investment has increased rapidly in proportion to GDP. Although there is still a gap compared with the United States, the gap is gradually decreasing. This also shows that the government and enterprises are paying more and more attention to scientific research and innovation. In addition, compared with the patents in China and the United States, the number of patent applications in China has increased very rapidly in recent years. According to the latest data from Wipo, the top five countries in the 2018 PCT patent applications are the United States, China, Japan, Germany and South Korea. In 2017, the number of PCT patent applications in China surpassed Japan for the first time, becoming the second highest proportion of PCT patent applications in the world, second only to the United States. In recent years, the number of applications for PCT patents in China has soared, and the growth rate is far ahead in the top five countries in the PCL patent application volume, reflecting the great potential of China's scientific and technological innovation. As China further strengthens intellectual property protection in the future, some low-end domestic manufacturing enterprises that rely on foreign product technology will be affected, and enterprises with truly innovative capabilities will gain long-term benefits. China's manufacturing enterprises face the tension of Sino-US trade wars. Only by improving the company's international competitiveness and technological innovation capabilities, accelerating the transformation and upgrading of the manufacturing industry, and better and faster achieving the improvement of the level of intelligence, can we uniquely Advantages stand in the market competition.

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