



The Impact of the Sino-US Trade War on China's Economy and High-tech Fields

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Abstract. To prevent the development of the economy of China and trade from threatening the protectionist capitalist economic system of the United States, the United States imposed multiple rounds of tariffs and trade barriers on China since 2018. Four years later, Trump came to power again. He imposed an additional 34% tariff on Chinese goods in April 2025. This move caused a sensation around the world, and the Sino-US trade war ushered in a new turning point. The Sino-U.S. trade war will undoubtedly deal a heavy blow to the industries of China, especially the high-tech sector, and the overall economic development of China, but cannot ignore the role of the Sino-U.S. trade war in promoting the independent innovation technology of China. The focus of this study is to analyze the multi-faceted and multi-angle impact of the Sino-U.S. trade war on the economy and high-tech fields of China and to provide a reference for adjustment directions on how China can balance its positive and negative impacts and maximize its interests.

Keywords: Trade Friction, Sino-us Trade War, High-tech Industry, Innovative Development, the Economic Development of China.

1 Introduction

As the process, which represents global economic integration, is deepened continuously, more and more countries are beginning to advocate trade cooperation based on equal and friendly exchanges, but China-US trade relations are the exception. To implement the protectionist supremacy principle promulgated by the American capitalist economic system. Trump launched a "301 investigation" against China in August 2017 and announced the results in March 2018. The US imposed a 25% tariff on Chinese goods. This move reflects the US's tendency toward anti-globalization. Early in July 2018, the US and China jointly declared that a 25% tax on imports and exports from both countries would be formally implemented. It announced the official start of the trade war between China and the US. In this white war, steel, aluminum foil, and high-tech industries are the first to bear the brunt. In the first half of 2018, Trump imposed tariffs ranging from 48.46% to 106.09% on aluminum foil products made in China. The export of steel (25%) and aluminum (10%) from China also could not escape the tariff increase. At the same time, China planned to increase import tariffs on US\$977 million and US\$1.992 billion by 105% and 25% respectively. The United

States formally declared a 25% tax on \$50 billion worth of critical industrial technologies, including products made under the "Made in China 2025" project, in May of that year.. In the following months, the United States continued to impose tariffs on different batches of goods in different fields, and at the same time, continued to expand the areas covered by the Sino-US trade war [1]. On April 2, 2025, Trump signed the "reciprocal tariff" treaty. He announced that China and the European Union would impose reciprocal tariffs of 34% and 20%, respectively. China quickly retaliated by imposing an 84% tariff on the 10th. As Tsinghua University International Relations Research Associate Zhou Jianren and International Relations Department PhD candidate Wang Qi believe, the re-election in four years of US President Trump will push Sino-US relations to a climax again, and Sino-US relations will face new tests in 2025 [2].

The core goal of the trade war between China and the United States is to curb the economic growth and high-tech development of China. Applying trade to restrict China's industrial upgrading and technical advancement is the core of the trade war. In the 2024 campaign manifesto of Trump, he made it clear that the United States would gradually improve self-sufficiency in necessities and completely cut off key imports from China within four years [3]. At the economic level, the short-term impact of the trade war on China is obvious. The manufacturing industry of China, such as electronics, steel, and pharmaceuticals, which are highly dependent on exporting to the United States will face the risk of fewer orders, a possible contraction in the production scale of enterprises, an impact on the job market in related industries, and workers who may lose their jobs or pay cuts. The decline in exports will also affect upstream and downstream supporting industries. It will drag down overall economic growth and pose a challenge to stabilizing employment and ensuring the livelihood of people. In the field of high-tech, the United States cracked down more severely, imposing tariffs and implementing export controls, which makes it more difficult for Chinese enterprises to obtain advanced technology and equipment, and seriously restricts the research and development process of strategic industries. The United States aims to maintain its global dominance in high-tech and slow the pace of Chinese innovation. China needs to increase investment in independent R&D, improve the resilience of the industrial chain and supply chain, deepen international technological cooperation, break through external blockades, and accomplish scientific and technological self-reliance and self-improvement. Therefore, by analyzing the dual impact of the Sino-US trade war on the economic and high-tech development of China, this paper aims to provide a reference for policy makers to help China optimize industrial policy, promote technological innovation and ultimately implement high-quality development in a complex international environment.

2 The Impact of the Trade War Between China and the United States on the Economy of China

2.1 Economic Growth and Employment of China

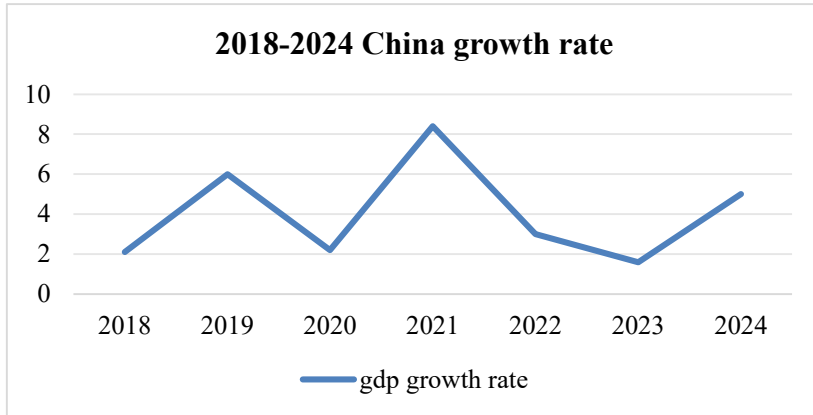


Fig. 1. China growth rate change during 2018-2024 .

Source: National Bureau of data and statistics of China (<https://www.stats.gov.cn/>)

Tariff regulation is considered an important factor in GDP growth because an increase in the number of import taxes indicates that China needs to pay higher costs to import goods. For export-led goods, the tariff increase means that the price of Chinese goods imported into the United States will rise. That is because merchants often shift the tariffs to the price of their goods in a way that allows consumers to bear some of the losses, making Chinese goods less competitive in price. In the U.S. market, the quantity of Chinese goods offered for sale in America greatly reduced. According to the calculation formula of total demand: government expenditure + exports + total consumption + total investment. When net exports fall, aggregate demand falls, representing a decline in GDP. When net exports fall, China receives less revenue from its import and export trade.

With the continuous adjustment of tax revenue, the trade war that China and the United States are engaged showed an alternating situation of tension and easing. As can be seen from Figure 1, although at the beginning of the trade dispute, China resisted the second round of tax increases (10%) imposed by the United States on 200 billion Chinese goods since September 2018. The United States continued to not only increase the tax percentage of the original 200 billion imports from 10% to 25% but also increased taxes on 125 billion additional goods in the third and fourth rounds of sanctions in 2019. This significantly dampened China's economic growth, with GDP growth plummeting from 6% to 2.2%, roughly the same as in 2017. But it eased after China and the United States signed the first phase of the economic and trade agreement next year, and China's GDP growth rate returned to 8.4% [4]. Overall, U.S. trade sanctions are one of the important factors leading to the ups and downs of the GDP growth rate of China.

In the context of the trade war between China and the United States, Chinese export-led companies were sanctioned by the United States, so their development stagnated, and their total revenue fell sharply. Both state-owned enterprises and small private enterprises were unable to expand because of a shortage of funds. This dilemma directly led to the contraction of the overall job market in China and the sharp reduction of job opportunities. To reduce labor costs, many enterprises were forced to take layoffs, with manual workers bearing the brunt and becoming the most affected group.

David Ricardo pointed out that when the trade model changes, if the industry cannot adapt quickly, it will suffer a negative impact in the short term, and the number of unemployed people will rise. (ON The Principles of Political Economy and Taxation, Chapter 7) [5]. According to the data of China's National Bureau of Statistics [6], although employment in China remained relatively stable from 2000-2020, compared with the growing population base, employment growth lagged, especially when China was caught off guard at the beginning of the trade war in 2018-2019

2.2 Price Levels and Inflation of China

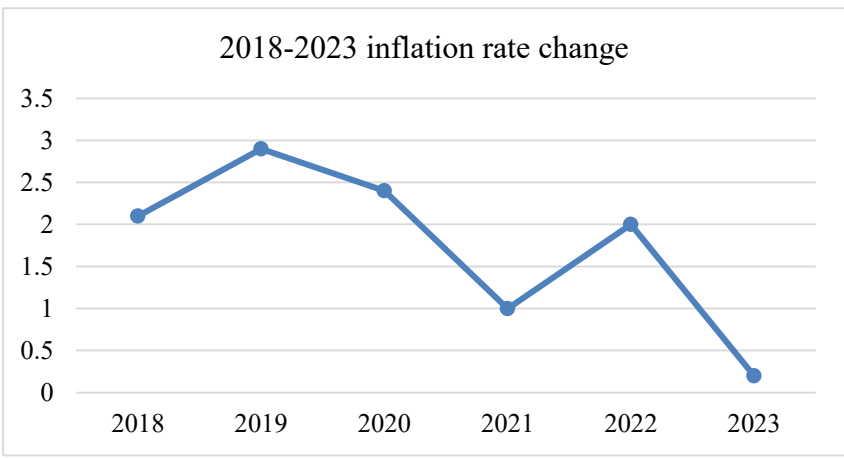


Fig. 2 China inflation rate change from 2018-2023

Source: World Bank <https://data.worldbank.org/country/china?view=chart>

In the turbulent times of the US enacting tariff hikes and China retaliating with tariff increases, the inflation rate of China was fluctuating. The United States increased taxes on a wide range of areas. And then caused the production costs of companies that rely on imported raw materials and parts to fluctuate with tariff adjustments, which in turn leads to constant changes in the inflation rate. As shown in Figure 2, China's inflation rate shows an alternating situation of rise and fall. This volatile inflation rate has a significant impact on price levels. Although prices are constantly changing due to fluctuations in inflation, the overall price level shows a tightening trend. As unemployment rises and disposable income falls, so does the willingness to spend. The oversupply of domestic goods can only stimulate consumption by reducing price levels. A series of

chain reactions highlighted the far-reaching influence of the conflict on the economy of China, especially price stability and industrial chain supply.

2.3 International Status and Diplomatic Relations of China

This paper believes that the trade war between China and the United States is conducive to China's further promotion of its international status. China showed strong economic resilience in the face of intense pressure from the United States in all areas. The tariffs announced by the United States cover a wide range of areas, from agricultural textiles to high-tech industries, blocking China's export trade with the United States. According to the data of the General Administration of Customs of China [7], China's exports to the United States fell by 1.04% from 2018 to 2020. To break away from the supply constraints of the United States and its dependence on export trade, China is committed to finding cooperative friends and strengthening the multilateral trading system: actively promoting WTO reform and contacting other emerging economies to strengthen Belt and Road cooperation for the common development of the two countries. These Chinese moves show the world that the stability and flexibility of the Chinese economy and the ability to continuously develop industrial self-optimization can win China an international voice. For example, China's manufacturing sector increased production to \$4.66 trillion in 2023, nearly twice as much as the United States. Its global share increased from 18.1% in 2010 to 28.8% in 2023 [8]

Based on improving its international status, diplomatic relations with China also developed significantly. First, China actively strengthens communication and cooperation with the EU and ASEAN economies to find good partners. During a visit to China in 2014, Nauru's speaker of Parliament, Marcus Stephen, said he believed that Nauru's resumption of diplomatic relations with China was the right choice and signed the Belt and Road cooperation document. In return for China, Stephen will increase Nauru's renewable power generation to nearly 50% from 3% improve the power supply、 reduce the cost of power generation, and benefit the people [9]. This deeply reflects the deep-seated nature of China's relations with foreign countries and China's image as a great power helping other countries.

3 The High-tech Section of China Which is Affected by the Sino-us Trade War

3.1 Technology Import Controls and Investment Restrictions

In recent years, the field of scientific and technological innovation in China has flourished. For example, the Shenzhong Bridge is a successful construction of a cross-sea project integrating "bridge, island, tunnel, and underwater interconnection". It greatly reduces the cost of driving and transporting from Shenzhen to Zhongshan and surrounding cities. At the same time, it will drive the sustained economic progress of the Greater Bay Area of Guangdong, Hong Kong, and Macao. China's remarkable achievements in technological innovation alarmed the United States. As China continues to make breakthroughs in cutting-edge technology, the United States is feeling competitive pressure from China. The United States begun a series of containment measures against China,

including technology export controls and investment restrictions, to maintain its hegemonic position in global science and technology and the economy. On August 25, 2022, the United States promulgated the Chip and Science Act 2022. On the technology side of the bill, the United States aims to crack down on the development of 5g communication technology in China by imposing strong lockdowns on the chip manufacturing industry and restricting its exports. A few researchers in China mastered chip research and development technology.

However, cultivating researchers is time-consuming and ineffective in the short term. The solution of import or talent introduction is difficult to accomplish due to the U.S. technology blockade policy, which poses a huge challenge to China's communication technology industry [10]. In terms of product iteration, due to the lack of core technical support, the launch cycle of new products is extended so that it cannot meet market demand in time. This led to the gradual erosion of market share by foreign competitors and a sharp decline in market competitiveness. In terms of investment, the United States blocked the investment of the Chinese Canyon Bridge Capital Partners consortium in U.S. semiconductor project research in 2017 [11] and said it endangered U.S. national security and undermined the integrity of the semiconductor industry chain and the use of this technology within the United States [12]. The United States has the intention of limiting China's multifaceted scientific and technological advancement and preventing the transfer of essential technologies and investment quotas from the source. But it pushes the Chinese to innovate and master core technologies.

3.2 Industrial Chain Security and Product Export

The security of the core technology industry chain of China is also facing a crisis. The security of the core technology industry chain of China is also facing a crisis. The United States, as the owner of chip lithography machines, controls the amount of chips that China imports to make Huawei phones.

As shown in Figure 3, the enterprises in total income was flat, and there was no breakthrough in growth. Among them, the net profit of Huawei fell to a record low in 2022, to about 35562 million yuan, accounting for about 5.5% of revenue. The net profit of Huawei's sudden decline was partly due to Chips and Science Act of 2022 in the US in 2022. To compete in the international market for chips made in China, the bill strengthens its competitiveness by subsidizing the development of the domestic chip industry in the United States. The overall revenue and net profit of Huawei, while both growing steadily, showed a weaker trend since then.

During the trade war, several companies in the United States and its allies filed lawsuits against Chinese companies over Chinese violations of some intellectual property. 2024 Survey Report on Overseas Intellectual Property Disputes of Chinese Enterprises. It is proposed that in 2023, the number of new intellectual property lawsuits filed by Chinese enterprises in the United States reached 1173, an increase of 19% over the same period last year. If the United States wins the lawsuit, the upstream and downstream supply chains of Chinese enterprises will face the risk of stopping supply, resulting in a substantial decline in production and a blow to the confidence of Chinese enterprises in independent innovation; the industrial-technological innovation of China will be hindered.

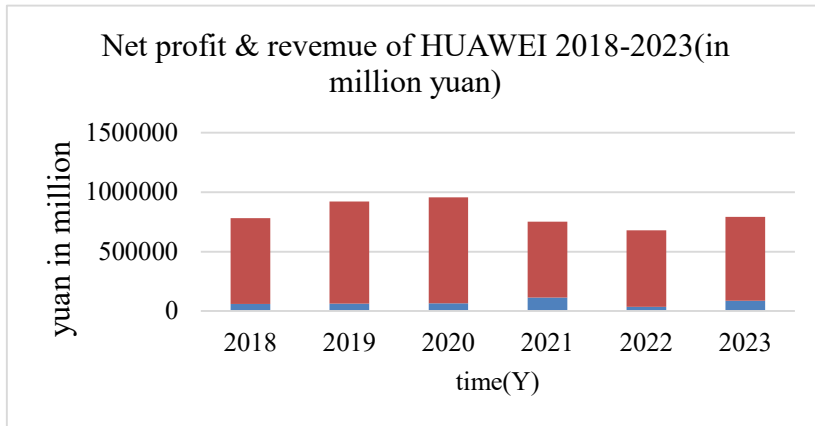


Fig. 3 Net profit and Revenue of HUAWEI from 2018-2023

Data source: <https://www.huawei.com/cn/annual-report%E2%80%8C>

3.3 Independent Innovation and Industrial Upgrading

After being hit hard by the technology blockade imposed by the United States, emerging areas of China gradually realized the importance of independent innovation and industrial structure optimization.

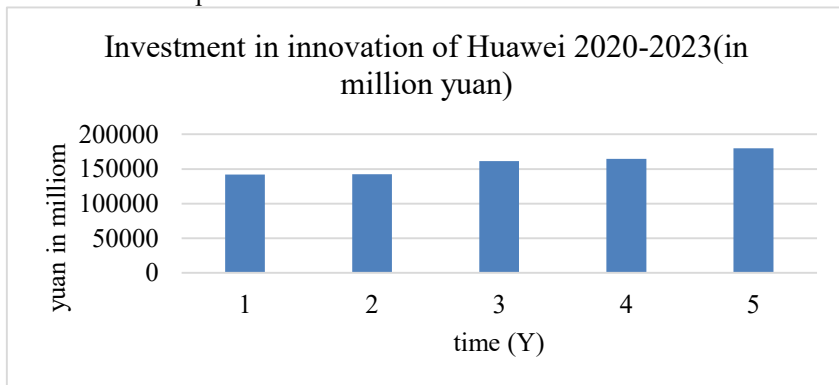


Fig. 4 Investment in Innovation of HUAWEI from 2020-2023

Data source: <https://www.huawei.com/cn/annual-report%E2%80%8C>

According to Figure 4, from 2020 to 2024, the investment in research and development of Huawei steadily increased and reached its peak in recent years in 2024, 179.7 billion yuan, accounting for about 20.8% of the annual revenue. By the end of 2024, Huawei held more than 150,000 valid authorized patents worldwide. Huawei released the chip Kirin 9000s in 2024 after releasing the first 5G base station core chip on MWC of the world in Barcelona in 2019. This incident reflects the independent innovation of the

chip technology breakthrough of China, and once again proves to the world the innovation of China in the field of high-tech.

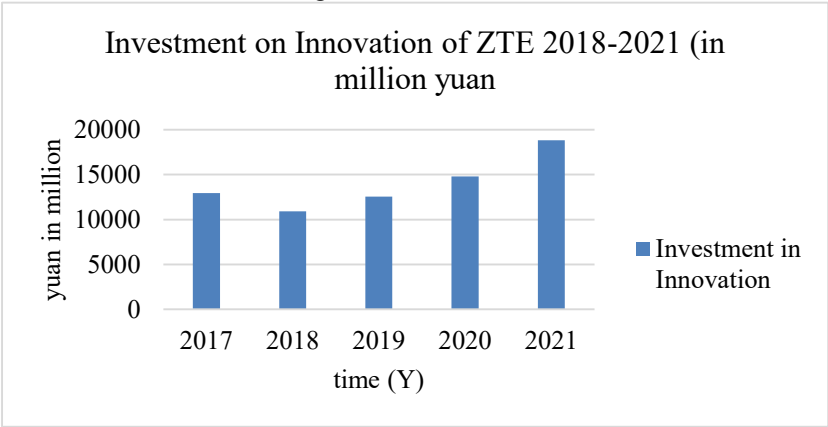


Fig. 5 Investment in Innovation of ZTE 2018-2021

Data source: https://www.zte.com.cn/china/about/investorrelations/corporate_report.html

According to the data in Figure 5, the total investment in ZTE science and technology research and development dropped to 10906 million yuan in 2018 due to Sino-US trade frictions, compared with 2017. This is the only time that less than 12000 million yuan was invested from 2017 to 2021. This shows that the technology industry of China, which did not complete its digital transformation in the early stages of the trade war, was hit hard. This is because these industries are overly dependent on chip imports. However, in the long run, US technology sanctions force ZTE to innovate and upgrade independently. Since 2019, the investment in 5G of ZTE chips and other technologies increased year by year, promoting the upgrading of the industry to a technology-intensive and high-value-added direction. In addition, ZTE actively develops emerging markets. With the support of the "Belt and Road" policy, the income of countries along the route increased by high-quality products. ZTE gradually reduces its dependence on a single market and comprehends how to optimize industrial structures.

4 Conclusion

In the short term, the trade war that China and the US are waging poses many challenges to the Chinese economy. In terms of overall economic development, the continuous imposition of tariffs by the United States made Chinese exports less competitive in the U.S. market than domestic industries. Export-oriented enterprises cannot make ends meet, and many enterprises choose to lay off workers to save costs, which leads to a rise in unemployment. The problems in China, including falling inflation and falling prices, intensified. For the high-tech industry of China, the United States imposed a ban on the export of key technologies, such as chips, to China by its many core technologies.

The industrial chain security and product export volume of Huawei, ZTE, and other enterprises are facing threats.

In the long run, the trade war that China and the United States are engaging in sounded a wake-up call for China to attach importance to multilateral trade exchanges. China gradually reduced its dependence on foreign raw materials and technology imports, won market favor by relying on its production capacity, and enhanced its comprehensive international strength. In the field of emerging technologies, the international competitiveness of China was continuously improved and showed strong scientific and technological innovation strength through increasing investment in scientific and technological research and development of Chinese Enterprises

On the one hand, what the Chinese government needs to enhance is trade cooperation and scientific and technological exchanges with countries along the "Belt and Road" route to build a community of common destiny for common development. On the other hand, the Chinese government needs to attach great importance to the development of domestic high-tech industries. The Chinese government needs to strengthen intellectual property protection and increase subsidies and capital investment in emerging industries. In addition, pay more attention to strengthening the internal drive for economic development. The trade war between China and the United States is protracted, and China needs all-around and multi-level strategic deployment to cope with various pressures from the United States. In addition, China should also see the positive impact that the Sino-U.S. trade war is conducive to promoting the economic recovery of China and stimulating independent innovation of high-tech industries. In the future, the impact of this conflict on China's economy and the development of high-tech sectors depends on the response of China to U.S. trade sanctions and the mastery of core technologies and raw materials by high-tech industries.

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