

# **U.S.-China Trade War's Impact on Taiwan's Exports of Major Goods and Export Amount to Major Countries/Regions**

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## **Abstract**

Taiwan is an export-oriented island economy. Because foreign trade plays a significant role in the country's economic development, the current U.S.-China trade conflict has greatly affected it as well as global economic and trade development. This study thus used Financial and Trade Statistics data of the Ministry of Finance, Taiwan, R.O.C (2020) and analyzed the major export categories of Taiwan and export amounts of major countries/regions in 2018 and 2019 to explore the impact of the U.S.-China trade war. According to the analysis results, conclusions and relevant specific suggestions are put forward for the government and industry as a reference.

**JEL classification numbers:** F14, F18.

**Keywords:** U.S.-China Trade War, Export, Island Economy.

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## **1. Introduction**

Economic development strategies of various countries can generally be divided into two forms: inward-looking development and outward-looking development. However, under economic globalization it has become the economic development trend of many countries or regions to vigorously develop an export-oriented economy. Taiwan is no exception as it has become a well-known export-oriented island economy. The government has long formulated an export-oriented strategy that conforms to the international market environment and development. In particular, Taiwan enterprises have found a niche in professional production and contract manufacturing in the global division of labor system by virtue of their technological strengths, thus driving the country's export and economic growth, especially in the information and electronics industry (Li, 2013, Wu and Chen, 2014). Taiwan's industry is mainly export-oriented and closely correlates to U.S.-China economic and trade ties. According to 2018 global commodity statistics released by the World Trade Organization (WTO), Taiwan's exports accounted for 1.7% of the global export scale, ranking 18<sup>th</sup> (WTO, 2019).

Trade is one of the most sensitive and important issues between the United States and China. Since its implementation of reforms and opening up, China's economy has grown rapidly. With the increasingly active trade exchanges and closer economic and trade relations with the United States, trade differences and frictions between the two countries have become increasingly serious. Among them, the ever-growing trade deficit is the main issue, which eventually triggered the U.S.-China Trade War in July 2018 (Kao, 2012; Yang, Shyu and Wu, 2020). As triangular trade has always been a vital pillar of Taiwan's economic development, it is inevitably affected (Kao, 2018; Lee, 2018; Yan, 2018). As the U.S.-China trade war gradually heats up, the economies of the United States and China have been seriously affected, and the world may fall into a financial crisis caused by the trade war between these two major economies. It is certainly hard for Taiwan to stand aloof as it is highly dependent on foreign trade. For Taiwan, the United States and China are two major export regions of its domestic supply chain. Being based on the place of production, U.S.-China trade sanctions have a great impact on some Taiwanese businesses that receive orders in Taiwan, but conduct production in China, or industries with upstream and downstream manufacturing relations with China. Taiwan may also have to adjust its supply chain and transfer orders to other regions. Therefore, when the United States and China launched the current trade war, Taiwan began paying close attention (Lee, 2018; Wang, 2018; Yuan and Chen, 2018; Chi, 2019). As the vast majority of goods invested and produced by Taiwanese businesses in China are exported to the United States, Taiwanese firms have been greatly affected and their profits have been severely hit in the context of this fierce trade war (Yang et al., 2020).

After the U.S.-China trade war broke out, the U.S. and China also actively sought opportunities for agreement. In October 2019, the two countries reached the first stage of a trade agreement verbally, and then the negotiation teams of both sides

immediately started negotiations. Both sides announced on December 13, 2019 that the first stage of agreement on trade negotiations had been reached. However, as pointed out in a report released by Bank of America/Merrill Lynch on December 13, 2019, the U.S.-China war on trade and technology may escalate again after the U.S. election in November 2020. This report mentioned that if the United States and China finally implement the first phase of the trade agreement, then this ceasefire period will help stabilize the global economic and trade environment, but it is too early to judge whether such a ceasefire will continue. From now until the signing of the agreement, it remains to be seen whether the legal and administrative processes can be correctly implemented and whether bilateral trade will rebound immediately (China Times, 2019). In particular, the outbreak of COVID-19 has added uncertainty to implementation of the U.S.-China trade agreement. International trade has always been the most important engine of Taiwan's economic development, and the United States and China are also Taiwan's most important exporting countries. Therefore, to understand the changes in Taiwan's exports in recent years, this study used Financial and Trade Statistics data of the Ministry of Finance, Taiwan, R.O.C (2020) and analyzed major export categories of Taiwan and export amounts of major countries/regions in 2018 and 2019 to explore the impact of the U.S.-China trade war. According to research results, conclusions and relevant suggestions on policy formulation and operation are put forward for the government and industry.

## **2. Literature Review**

The rise of international trade has led to the development of the global economy and trade, thus forming globalization. An export-oriented economy is a form of economic structure, economic operation mechanism, and economic operation system established by a country or region to promote its economic development and growth, taking the international market demand as the guidance and the expansion of exports as the center and actively participating in the international division of labor and international competition according to the theory of comparative advantage. Compared with the internal-oriented economy, the export-oriented economy has the following characteristics. Production enterprises actively participate in the international division of labor and focus on developing the production of export products. They take the international market as the objective, while providing products or services, and give full play to their comparative advantages. They optimize the two-way flow of international and domestic capital, technology, labor, and other factors of production to improve efficiency. Their products or services are highly dependent on the international market and have great risks (Sun, 2012). Export orientation focuses on the use of foreign resources and the development of foreign markets, which help drive the development of the national economy with exported products. It is a strategic model that mainly drives a country's economic growth via export growth and is an export-oriented economy model (Li, 2013). In light of a limited domestic market, slow technological

development level, and influence of rising labor costs, the export-oriented economy has become an indispensable mode of economic development for many countries to enhance the vitality of domestic industries and promote national economic growth. It is also conducive to market innovation and provides good opportunities for the formation of economies of scale (Sun, 2012; Li, 2013). Taiwan's economic system in recent years has undergone a rapid transformation from a labor-intensive industry to capital and technology-intensive industry. Various industries have seen continuous adjustments, and production technology and management efficiency have been improved. With the wide application of computer equipment and the prevalence of network communications recently, the modes of receiving orders and the production and transportation by manufacturers have also changed (Tsay, Wu and Chen, 2014).

Taiwan's development of its export-oriented economy is determined by its characteristics. Over the years, the government has strongly encouraged investment in industries with high-technology content, replacing traditional labor-intensive industries with technology-intensive industries and forming an economy dominated by processing and exports (Li, 2013). During the process of transition from a traditional economy to an export-oriented economy, Taiwan has always adopted a range of policies conducive to economic transformation, such as complete elimination of import restrictions, reduction of tariffs and taxes on imported raw materials to the greatest extent, strong support for export processing areas, preferential support to imported foreign capital and technology, as well as subsidies and guarantee systems for products used for export, all of which have facilitated Taiwan's national economy and total export trade (Li, 2013).

Globalization promotes better use of resources and further enhances economic development, but it may be accompanied by an excessive concentration of resources, resulting in inequality between the rich and the poor. Globalization requires countries to open their markets and reduce trade barriers, but may also cause debates over which is the most important, economic integration or economic sovereignty. Globalization reduces the regulation of financial markets by various countries, but also severely affects many countries during times of financial crises (CTCI Foundation, 2017). Since the formal establishment of diplomatic relations between the United States and China in 1979, trade between the two countries has developed rapidly. However, while trade between the is booming, many problems have emerged, with the most noticeable one being the huge trade imbalance with the U.S. on the negative side of the equation (Liu and Hu, 2005). Of course, economic and trade relations between the United States and China are an important and indispensable part of their overall relations. China is presently the world's second largest economy, second only to the United States. The rise of China's economy appears as a great threat to the United States and is thus impacting economic and trade relations between the two sides (Yang et al., 2020). Ever since the U.S.-China trade conflict erupted, China's economic growth and manufacturing development have been impacted. Various indices related to manufacturing also show under the influence of factors such as the current turbulent international economic situation,

the unclear prospect of U.S.-China trade friction, and sluggish domestic demand that China's manufacturing industry is currently experiencing great pressure (Lin, 2020b). Because the U.S.-China trade conflict is unpredictable and has evolved into a long-term event, the continuation of this trade war will not only affect the momentum of global economic growth, but also the global industrial supply chain (Lin, 2020a). The U.S. and China are levying tariffs on each other, resulting in an increase of indirect tariff costs in different industries. For example, in the most affected industries such as computer, electronic and optical products manufacturing and chemical and chemical products manufacturing, manufacturers are now considering transferring orders to third countries not affected by tariff measures as their response measure (Lin, 2020a).

In order to avoid experiencing additional tariffs on exports from China to the United States, supply chain manufacturers have gradually moved some production lines out of China and carried out production and assembly in a third country before sending the final product into the U.S. market (Hsu and Li, 2020). The imposition of high tariffs by the United States and China not only directly affects the economies of the two countries, but also disrupts the global industrial supply chain and indirectly bring negative effects to countries maintaining close ties to the industrial supply chains via the two countries. China is the world's major production base, but after the United States imposed tariffs on it, many manufacturers in China began to move their production bases to other regions to save costs. For manufacturers that originally took China's domestic demand market as their main target, they are less affected by tariffs and may tend to maintain their original mode of operations. However, for manufacturers that mainly export products to the United States, they need to think about whether to change to their own domestic demand market or transfer their production bases as one way to cope with the impact of the trade war. Some large-scale manufacturers with a cross-strait layout or global layout can adjust their cross-border production capacity and increase overseas production bases to cope with the situation (Lin, 2020a; Yang, 2020).

Facing China's rapid development in high-tech industries, the U.S. government is worried on the one hand that United States' leading position in the international economy and technology will be shaken up; on the other hand, it believes with the proposal of "Made in China 2025" that the China government is providing unfair preferential policies for domestic enterprises in some emerging industrial fields, which is not conducive to free competition in the market. Technology and intellectual property rights of the United States have been unfairly transferred to China for a long time and have highly influenced the development of U.S. industry (Lin, 2020b). The U.S.-China trade conflict has affected the international economy and the real economic performance of relevant countries so far, while the impact on financial markets is becoming increasingly clearer in money markets, capital markets, and commodity markets. International economic organizations have successively lowered their global economic growth rate forecasts for 2019 and 2020, mainly because of uncertainty over global trade and policies continues to rise, impacting business confidence and investment and weakening the momentum of

global economic growth (Hsu, 2020).

### 3. Methodology

This study used Financial and Trade Statistics data of the Ministry of Finance, Taiwan, R.O.C (2020) and analyzed the country's major export categories and export amounts of major countries/regions in 2018 and 2019. According to the classification of the Ministry of Finance, Taiwan, R.O.C., the top 11 goods in terms of export amounts listed in Table 1 were selected, such as electronic components, information and audio-visual products, basic metals and their products, etc. After calculating the average value and standard deviation of the 2018 and 2019 amounts of the 11 categories, an independent sample t-test (shown in Table 1) was carried out. The comparative data of Taiwan's export amounts to major countries/regions in 2018 and 2019 are shown in Table 2.

**Table 1: T-test of Main Export Goods of Taiwan in 2018 and 2019**  
(Unit: US\$ million)

Commodities	2018 Average Value	2018 Standard Deviation	2019 Average Value	2019 Standard Deviation	t	p
Electronic components	110768.089	942.102	112535.157	1259.302	-.319	.753
Information and communication and audio-visual products	35323.385	300.172	42677.572	406.306	-4.198	.000*
Basic metals and their products	31587.931	238.942	27915.016	211.315	3.381	.003*
Machinery	25569.142	199.905	23482.626	186.191	4.140	.000*
Plastics, rubber and their products	25276.476	158.509	22583.154	138.061	3.712	.001*
Chemicals	22150.866	130.606	18677.054	124.011	5.584	.000*
Mineral products	14530.387	139.013	14050.041	178.762	.682	.502
Optical equipment	11678.441	64.339	11272.812	88.631	1.073	.295
Means of transport	11246.299	68.254	11268.943	113.663	.004	.997
Motor products	10793.625	73.832	10736.519	73.339	.552	.587
Textiles	10074.969	81.971	9180.969	71.273	2.381	.026*

Source: Ministry of Finance, Taiwan, R.O.C. (2020). Note: \*p<.05.

**Table 2: Export Amounts to Major Countries/Regions in 2018 and 2019**  
(Unit: US\$ million)

Country/region	Export amount in 2018	Export amount in 2019	Compared with the same period last year (%)
<b>China and Hong Kong</b>	137898.804	132228.029	-4.1
<b>United States</b>	39490.38	46269.505	17.2
<b>Japan</b>	22800.957	23286.516	2.1
<b>Europe</b>	31277.632	29775.996	-4.8
<b>Association of Southeast Asian Nations</b>	58125.725	53920.298	-7.2

Source: Ministry of Finance, Taiwan, R.O.C. (2020).

Table 1 shows that Taiwan's ranking of its major exports in 2019 is the same as in 2018. The top-5 export amounts are electronic components; information and communication and audio-visual products; basic metals and their products; machinery; and plastics, rubber and their products. From a comparison of the export amounts of Taiwan's major export goods in 2018 and 2019, the following 6 categories are significantly different between the two years: information and communication and audio-visual products; basic metals and their products; machinery; plastics, rubber and their products; chemicals; and textiles. Among them, the export amounts of 5 categories significantly fell, except for information and communication and audio-visual products (+20.82%) that saw a significant rise in 2019. Among them, the largest declines in 2019 run as follows: Chemicals (-15.68%); basic metals and their products (-11.63%); plastics, rubber and its products (-10.66%); textiles (-8.87%); machinery (-8.16%).

As for the increase in information and communication and audio-visual products, it can be inferred that many Taiwanese businesses moved their production lines of cloud servers, computer accessories, switches, and routers from China back to Taiwan. Coupled with the order transfer effect, the export growth of information and communication and audio-visual products has shown remarkable performance. However, exports of other major commodities, such as electronic components, mineral products, optical equipment, means of transportation, and electrical products, stabilized. Traditional products are experiencing mostly a recession due to the trade war and the global economic slowdown. In terms of machinery, as Yang (2020) pointed out, China is Taiwan's largest export market for smart machinery products. Affected by factors such as a sluggish economy and uncertain risks, the number of orders placed for smart machinery products in China dropped sharply in 2019, resulting in a sharp decline in Taiwan's exports to China. Therefore, even after the U.S.-China trade war, Taiwan's exports to the United States increased due to the order transfer effect, but the growth of exports to the United States could not offset the decline in exports to China, resulting in negative growth in Taiwan's total

exports of smart machinery.

Table 2 presents that 2019 is not much different from 2018 in terms of ranking. China and Hong Kong are still the largest export markets, but the export amounts declined by 4.1% compared with 2018. Exports to Europe and ASEAN also showed a decline, whereas exports to the United States increased by 17.2% and to Japan by 2.1%. We may conclude that due to the U.S.-China trade war and the slowdown of global economic growth, exports in major markets fluctuated in 2019, with relatively large growth in the United States.

#### **4. Results and Discussion**

The issues of trade deficits and intellectual property protection between China and the United States not only relate to huge economic interests in both sides, but are also the trigger and risk factors of their trade war (Yang et al., 2020). Lin (2020b) forecasted that the U.S.-China trade war will have the following impacts on the development of China's manufacturing industry. 1) Foreign direct investment in the manufacturing industry will decrease, but there will be no large-scale withdrawal of enterprises. 2) China's manufacturing supply chain will be affected for a long time. 3) The development process of "Made in China 2025" key industries will be negatively affected. Although after the initiation of the U.S.-China trade war, exports to the United States from various countries showed a zero-sum situation, some countries, including Taiwan, enjoyed the benefits of order transfers. However, the U.S.-China tariff war has also caused global trade to shrink and investment to turn conservative, resulting in a sharp decline in orders (Yang, 2020).

Since the mid-1980s, the soaring domestic labor costs in Taiwan, complex product technology, and the appreciation of the New Taiwan Dollar and other factors impaired the export competitiveness of some industries. In this regard, it became necessary to cope with the changes in the general environment through foreign investment and global distribution. Due to China's economic reforms and opening up, many Taiwan enterprises invested in China so as to continue their export strengths by making good use of cheap production resources there. They also formed a triangular trade pattern of "Taiwan receiving orders, China assembling, and the United States consuming" in recent years, thus focusing the previous international industrial layout of Taiwan more so on China (Sun and Chen, 2017). Although the current tariff war has only affected some Taiwanese businesses that have set up factories in China, it has already formed extremely high business risks. In response, manufacturers have transferred orders, and Taiwanese businesses have moved production lines, built new factories, returned to Taiwan, etc. All have shifted from a wait-and-see attitude to practical actions (Lin, 2020a).

One of the characteristics of an export-oriented economy is to make full use of both international and domestic markets. Most firms cannot just pay attention to their domestic market while ignoring the international market. Just like when reforms take place in an export-oriented economy, one still needs to further adjust and develop an internal economic system so that an export-oriented economy



experiences a more suitable development environment (Liu, 2012). Yang (2020) noted that some Taiwan businesses supply the domestic demand in China, while Taiwan factories mainly focus on meeting the demands of the United States or other regions, separating the China market from other markets to cope with the impact of the U.S.-China trade war. In the future, manufacturers, in light of their capacities, should gradually shift from a single market to a global layout to spread possible risks. To sum up, under the complicated and changing global economic and trade situation, Taiwan's smart machinery industry should continuously improve product technology and added value, accelerate the development and application of new products, establish a completely independent supply chain system, increase the independent production ratio of components, reduce its dependence on foreign manufacturers, step up the extension from manufacturing to service, expand the application of products through system integration, and enhance the competitive advantage of products (Yang, 2020).

Taiwan in the future should continue to strengthen its competitive advantages, enhance its diversified industrial layout, and join the emerging manufacturing ecosystem, so as to fully exert its manufacturing capability in the global market and minimize the risks brought about by the U.S.-China war (Peng, 2020). Facing changes in the international economy and trade, the Taiwan government should put forward an overall new economic strategy given the U.S.-China trade conflict that protects and builds up Taiwanese businesses and further stimulates economic development. In addition to continuing to promote the current New Southward Policy, the Ministry of Economic Affairs (Taiwan) launched the Investment Program for Taiwanese Businesses Returning to Taiwan in January 2019 and passed the Overseas Capital Remittance Law in August to encourage the return of Taiwanese businesses (Lin, 2020a).

Taiwan manufacturers in practice often use research and development (R&D) to reduce costs and to increase OEM opportunities. As such, the government should also encourage manufacturers' R&D activities (Wu and Chen, 2014). The United States has not lifted all tariffs imposed on Chinese goods and is planning to extend tariff measures to technology export controls, indicating that the U.S.-China confrontation will continue long term. Therefore, Taiwanese businesses still need to pay attention to the development of U.S.-China relations and the pace of adjusting their industrial supply chain (Hsu, 2020). Finally, COVID-19 has begun to further disrupt global economic activities and the industrial layout starting from early 2020. The epidemic has caused a sharp drop in global trade and financial markets, seriously impacted overall consumer demand, and interfered with the supply chain. With the outbreak of this epidemic, China and the United States have been hit hard one after another, bringing about great risks in terms of economy and finance and thus adding new unknown factors to the already uncertain first-stage trade agreement between the two sides.

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