

The Impact of Intellectual Property Protection on High-tech Products Export

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Abstract: Firstly, it analyzes the trade situation of high-tech products between China and the United States, and then studies the impact of Sino-US trade war on China's high-tech products' export. Secondly, according to the current situation of China's products exported to the United States, find out the factors affecting the trade of high-tech products between China and the United States, and analyzing the shortcomings in China's intellectual property protection to focus on the impact of US intellectual property protection on China's high-tech product exports. Finally, our government and enterprises should realize the importance of intellectual property protection and encourage technological innovation, thus preventing technological market from being impact.

1. Introduction

Since the 21st century, the process of economic globalization has been advancing step by step, and the proportion of import and export trade in the economic development of various countries has been increasing. In the era of continuous development of information technology, the innovation of knowledge and technology has become the main way for countries in the world to continuously improve their competitiveness in international trade, among which the production and export of high-tech products play a decisive role in improving a country's economic competitiveness. As the mutual dependence between China and the United States gradually deepens, the number of transactions involving high-tech products also keeps increasing. The United States has many advanced technologies that are in the leading position in the world, and some of them are adopted by China, which leads to frequent intellectual property issues between the United States and China. Especially in recent years, with the development of high-tech industry in China, the frequency of 337 investigations by the United States has been increasing.

In the process of writing, this paper draws on a large number of domestic and foreign materials and literature, from the analysis of the current situation of Sino-US intellectual property trade friction to the elaboration of the two countries in intellectual property protection differences. On the basis of the current research process of domestic and foreign scholars on this issue and the measures that China has taken, this paper further discusses how to deal with the protection of intellectual property rights, ensure the quantity and scale of high-tech products' export and put forward some suggestions.

This paper starts with the current China-US trade friction and analyzes the policy differences that cause trade friction. Secondly, this paper expounds the development process and the current situation of China's export to America on the historical development background of China's export of high-tech products since the 21st century. Finally, this paper puts forward countermeasures to cope with the shock of trade friction.

1.1 China's Exports of High-tech Products to the United States

China joined the WTO in 2001. As a developing member country, China enjoys all kinds of preferential treatment from the WTO members, this makes China's high-tech products' export to the US rapidly increased from \$16.165 billion to \$41.363 billion in two years. Since 2005, the growth

rate of export has slowed down and entered a stable growth stage. In 2008, the international financial crisis broke out, and China's high-tech industry was not spared in the context of global economic recession, and the export volume of products continued to decline. With the improvement of the macro economy, the export has shown a cyclical rise and decline since 2010, but the overall growth trend has been slow, which is known as the wave growth stage.

Of all types of export products, labor-intensive computer and communication technology products account for a large proportion, about 80% and increasing year by year. However, although the total export volume is increasing, the growth rate of export volume is slowing down, indicating that China's processing trade is gradually improving. In addition, although the export of life sciences, electronic technology, aerospace technology products to the United States is not large, but the growth rate is high, and the export of biotechnology, photoelectric technology and other products do not have a significant growth trend.

1.2 Factors Influencing Trade of High-tech Products between China and America

Market size. Larger market size can promote product trade, especially intra-industry trade. Countries with large market size can support enterprises to expand product production to gain economies of scale, reduce the average production cost of products, and thus gain cost and price advantages in product production and export. This is one of the reasons why China and the United States have a large volume of trade, especially a large proportion of intra-industry trade.

Trade policy. Trade policies may directly affect the balance of international trade and even lead to a trade war. The US trade policy is probably the direct cause of the trade gap between China and the US. In recent years, China's high-tech exports to the United States have maintained a growing surplus, this is partly because the US has formulated trade policies to restrict export of specific products. The formulation of relevant policies will not only lead to the imbalance in current account, resulting in the trade friction of high-tech products, but also make high-tech industry become vulnerable to the external impact and produce large fluctuations.

The Importance of government. The Chinese government tends to pay more attention to the production process, while the US government pays more attention to research and development process. Compared with China, the US is a capital-intensive country, so the US prefers to manufacture processed products in China. The government's attention to high and new technology directly affects the structure of export products. Therefore, among the main high-tech products exported by China, the technology content independently developed by enterprises is relatively low, and the value-added of products mainly exists in the production process, while the value-added of American export products mainly depends on advanced technology contained.

2. The Influence of Intellectual Property Protection on the Export of High-tech Products

In 2018, China's trade surplus with the US expanded further, reaching 2.14 trillion yuan in RMB terms, an increase of 14.7 percent. Against the backdrop of the rising trade protectionism and continuous economic and trade frictions, this result far exceeded expectations. From the perspective of the total volume of import and export trade, China has become a trading nation, but the characteristics of import and export products determine that China has not yet achieved the goal of a trading power. The quality and quantity of independent intellectual property rights are the keys to determine whether a country can become a trading power, and China still need further input to the research and protection of independent intellectual property rights.

2.1 Status Quo of Intellectual Property Protection in China

The realization of intellectual property protection requires a large amount of human and capital input which makes it become inseparable from fiscal and financial support. Since the level of science and technology is an important factor to reflect a country's comprehensive national strength and promote its economic growth, the R&D investment targeted at technological innovation is crucial to the country's economic development. Therefore, in order to improve the competitiveness of Chinese enterprises in the international market and develop China into a scientific and

technological power, we must increase the investment in technological innovation, attract high-level talents at home and abroad, and encourage and support scientific and technological research and development.

At present, it is generally believed in the international community that the number of patent applications and authorization of a country represents the development of the country's intellectual property protection. The improvement of a country's innovation level and awareness of safeguarding rights is not only conducive to the development of national technology-intensive industries, but also of great significance to the protection of intellectual property rights.

It is reported that the number of applications and authorization of invention patents in China is increasing. However, due to the different technological innovation capabilities in different regions, the number of patent applications also showed regional differences, showing the distribution characteristics of "high in the east, low in the west". In order to balance the innovation ability between regions, China strongly supports the patent acceptance in the western region. Although China is already a big patent country in terms of the number of patents' applications and authorization, the quality still needs to be improved. Therefore, China should continue to increase R&D investment support for enterprises directly involved in international competition, strengthen patent and brand protection, and strive to become a powerful innovation country as soon as possible.

Although China's protection of intellectual property rights is relatively backward compared with developed countries, supported by the development of China's economy, the government attaches more and more importance to the protection of intellectual property rights. After China's accession to WTO, it signed the agreement on trade-related intellectual property rights as a member state, which not only stipulated the basic principles that China should follow in trade-related intellectual property rights, but also strengthened the connection and communication between China and other member states in intellectual property.

2.2 The Influence of Intellectual Property Protection in the United States on the Export of Chinese High-tech Products

In today's market economy, knowledge and technology content determine the core competitiveness of products. Through research and development of new technology and integration of core technology into new products, high-tech enterprises can really enhance the core competitiveness of high-tech products by transforming scientific and technological achievements. By protecting the core technology contained in the product from infringement, a country can ensure that it can obtain the legal benefits of research, development and use of the technology. The lack of core competitiveness of Chinese products is one of the important reasons why the United States frequently investigates China's high-tech products' export.

Many of the trademarks or brands of well-known Chinese enterprises have been registered in foreign countries, among which are some of the most commercially valuable trademarks and brands in China. The main reason why Chinese enterprises lack the awareness of intellectual property protection is that its value often takes a long time to reflect. However, most enterprises only pay attention to short-term interests and fail to realize the importance of long-term value brought by intellectual property protection, so many companies do not put intellectual property protection in an important position affecting the development of enterprises. Therefore, strengthening the protection of intellectual property rights is conducive to raising the awareness of property rights protection of high-tech enterprises.

As a result of technology introduction and imitation for a long time, many Chinese enterprises have lost the ability of independent innovation and research. Strengthening the protection of intellectual property rights can encourage Chinese enterprises to enhance their independent innovation capacity and improve the structure of China's export trade, so as to better meet the needs of foreign consumers and improve the structure of export products. Moreover, the protection of intellectual property rights can stimulate the enthusiasm of R&D personnel, improve the level of R&D and application of advanced technologies, and bring economic profits to enterprises.

In order to protect the intellectual property rights of proprietary technologies, high-tech enterprises need to apply for patents and registered trademarks for advanced technologies, and the expenses they need to pay for this is a large sum for them. And with the improvement of the intellectual property protection system and laws, the protection of foreign advanced technology used by China is also increasing. Foreign enterprises can use the intellectual property protection of advanced technology to obtain certain monopoly profits from the sales volume of Chinese enterprises. In order to use the foreign advanced technology necessary for the production of products, Chinese high-tech enterprises must pay high royalties to foreign enterprises, which will increase the production costs of Chinese enterprises and eliminate the original price advantages of Chinese products, thus greatly weakening the international competitiveness of export products.

With the development of science and technology, the gap in technology and knowledge between developed and developing countries is becoming larger and larger. The United States began to implement intellectual property protection in the middle and late 18th century. As the most developed country in the world, the United States constantly improved its intellectual property protection system with the continuous innovation and upgrading of advanced technologies in order to safeguard its own interests. However, China started to carry out intellectual property protection later, and it is relatively lack of awareness of patent protection, so it lacks core patents and technologies compared with advanced developed countries. The difference in intellectual property protection, on the one hand, will enable the United States to use this advantage to protect its own trade interests from infringement and even gain additional benefits; on the other hand, it will cause Chinese high-tech enterprises to lose more trade volume due to such unequal protection.

3. Recommendations of the Protection of Intellectual Property Rights of High-tech Products in China

On the one hand, the government should increase the investment in enterprises' R&D centers and laboratories, improve the enthusiasm of independent innovation in scientific research institutions and fundamentally improve the innovation capacity. On the other hand, the government should encourage diversified ways of investment and financing, absorb idle funds from enterprises or citizens through various channels, so as to invest them in high-tech industries, and provide financial support for enterprise technology research and development while improving the utilization rate of funds. In addition, the government should invest funds to introduce new and high-tech talents from home and abroad to facilitate the healthy development of high-tech exports. While increasing financial support, it is also necessary to strengthen cooperation between enterprises and scientific research institutions, establish industry-university-research alliance and improve the utilization rate of technological innovation by entrusting research and development and co-building laboratories.

Only by continuous innovation and independent research and development of core technology can enterprises reduce production costs and gain price advantages, so as to keep and exert the competitiveness of their products in the international market. On the one hand, enterprises can encourage employees to participate in technological innovation and create environment and conditions suitable for innovation by increasing investment in technological innovation research and development, relying on technology introduction and technology transfer. On the other hand, enterprises should make clear the direction of independent innovation. Technology introduction should not only stay in the stage of learning or imitation, but also carry out in-depth analysis and thinking to determine the innovation and management direction of enterprises. Enterprises should improve the technological innovation system, adjust the innovation activities, coordinate the cooperation of R&D, production, intellectual property and other departments, make rational use of technology and human resources, accelerate innovation speed and efficiency, and ensure the investment in R&D is worthwhile..

If Chinese enterprises want to stand out from the competition, they should not only continuously create new technologies for research and development, but also timely protect the advanced technologies that have been developed or are being developed. However, most Chinese enterprises

lack the awareness of protecting their own intellectual property rights, such as applying for patents in time. Therefore, we can carry out relevant legal training and publicity work for high-tech enterprises in China to make them thoroughly aware of the meaning of intellectual property protection. In addition, Chinese high-tech enterprises should apply for intellectual property protection in time for the products they develop and produce. They can also establish the intellectual property protection mechanism within the enterprise to prevent piracy and counterfeiting in the market. Products exported to foreign countries shall be subject to strict examination. Intellectual property rights protection departments and public relations departments may be set up within the enterprise to check whether the exported products infringe upon the intellectual property rights of other countries. In case of infringement, we should deal with it in time, maintain the company image in time and prevent unnecessary trade friction between countries.

4. Conclusion

Through the analysis of this paper, we can draw on a conclusion that the current intellectual property protection measures implemented by the United States to China intentionally restrict the export of Chinese products, which directly causes the decline of the export volume of high-tech products in China. Therefore, Chinese enterprises must improve the level of independent innovation and prevent the restriction of protection exerted by the US. In addition, we should strengthen the awareness of intellectual property rights in the process of product production to prevent the product production technology from infringing the intellectual property rights of the United States. Our government and enterprises should take timely and effective measures to improve the relevant laws and systems, severely punish the infringement of intellectual property rights, strengthen the efforts to encourage independent innovation, and promote the quantity and quality improvement of our high-tech products.

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