

Research on the Formation Mechanism and the Influence to Exports of the Patent-Based Technical Barriers

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Abstract. With the increase of the number of the export trade, the traditional tariff barrier will be weakened gradually and finally will be abolished. The non-tariff barrier will take a more import role. The patent-based technical barriers is one of the non-tariff barriers and is posing a massive threat to Chinese export trade. The paper first analyzes the formed mechanism of the patent-based technical barriers. So as to resolve the phenomena of market distortion, the government adopts technical measures which can form the patent-based technical barriers. Then, it analyzes the impacts that the Patent Standards bring in the exportation. Last, it fundamentally puts forward a series of strategy to break through this barrier. The purpose of paper is to enhance the Chinese exported products' trade competitiveness.

Keywords: the patent-based technical barriers; market distortion; exterior effect

1. The Conception of Technical Barriers to Trade

So-called technical barriers to trade (TBT) refers to a country takes some mandatory or not mandatory technical measures to safeguard national security, protect health and safety of human beings, protect animal and plant's life and health, and protect the ecological environment, or to prevent fraud, assure product quality, which become obstacles of freely entering into the country for other countries' goods [1]. It belongs to the non-technology barriers category.

The patent-based technical barrier is one kind of technical barriers to trade. Now, nobody can do some special research on the patent-based technical barriers, and there is no explicit definition in the aspect of theory. At present, this kind of new barrier has many names in the academic. For example, Dong introduces the intellectual property into the standard. He defined this kind of barrier as the multi-skill technical barrier containing intellectual property and technical standard [2]. Ma Jun in the article "Report about the developed investigation in the state council", thinks that both patent technology and the standard can lead to the patent-based technical standards. So this paper adopts this conception [3]. According to the concept of technical barriers, the patent technology can form the technical barriers to trade in spite of intention or non-intention. We defined this kind of barrier as the patent-based technical barriers.

2. Formed Mechanism of the Patent-Based Technical Barrier

The government's intervention can lead to the patent-based technical barrier. The economic theories mainly make the analysis from the aspects of market failure and think that intervention of trade policies can correct market distortion. Some scholars think trade policies are not the most effective means to correct the distortion in most conditions, just as an external means to deal with internal distortion. In view of the informational asymmetry, exterior effect and so on, the government formulates the suitable policies to

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correct the distortion and promote economic efficiency. These policies may lead to the formation of the patent-based technical barriers.

2.1. Correct the asymmetry of information

Information between the producers and the consumers is asymmetric in the market transaction. The infringing products are flooding the market. Because the producers don't need to pay many fees on infringing products, they can produce the inferior products at low price. Consumers lack the full information about such products, so they prefer to inferior products at low price. Then the producers lack the motive to produce the high grade products and adopt the low- priced competitive way to obtain the massive profits. So the market can produce the low quality products in balanced environment. The government's intervention can solve this problem. So as to enhance the innovative enthusiasm of entrepreneur, the government establishes the related laws and regulations to require the imports which must comply with requirements of intellectual property. Consequently, consumers can learn the sufficient information about the intellectual property and the quality and so on. These measures can overcome the asymmetry and protect the benefit of consumers.

2.2. Overcome exterior effect

Economic theories possibly have exterior effect. It may be the positive effect, also the negative effect. The government devises the patent-based technical barriers to correct the negative effect which is related to international trade. Instruction of green environmental protection in the European Union says that the importable air conditioning have to use the non-fluorine environmental protection R-410A refrigerant. It also means that somebody can't import the R-410A refrigerant which can be used in air conditioning or the heat pump, without the European's permission. Because Honey well is the patent owner of R-410A refrigerant in Europe and China, the enterprises that want to sell the air conditioning to the European must obtain the Honeywell's authentication, which may increase the cost of our export products and weaken the competitive power in the marketplace. Although this kind of instruction is advantageous to the environmental protection, and promotes the social welfare, it can lead to the patent-based technical barriers.

2.3. Resolve insufficient supply of social public goods

According to the public goods basic principle, pure market mechanism can't produce the enough social public goods. It can result in the insufficient supply of social public goods. Therefore, the government drafts the suitable laws and regulations to realize the supply of the social public goods. From the aspect of international trade, the government has to lay down the patent-based technical barriers to prohibit the entrance of the infringing products in order to stimulate the supply of the social public goods. This government can achieve this goal by this means.

3. The Impacts that the Patent-Based Technical Barrier Brings on Our Exports

3.1. Reduce the number of the exports

The information between producer and consumer is not symmetrical. The government formulates the patent-based technical barriers to limit the entrance of the foreign products [4]. On one hand, if the exports don't conform to the requirements of the host country, they can't enter the market. On the other hand, although the exports are allowed to enter the foreign market, the price mechanism can increase the cost of the products. What we mentioned above can directly hindered the foreign trade of our countries. According to the technical laws and regulations, the importers must carry on the qualified evaluation for the imported products, which can pose a very big threat to the international trade. For example, Japan, the United States, and the European Union all have formulated the strict patent standards and have established the strict system of patent technology. In recent years, Japan has taken the advanced patent technology as the foundation to formulate technical standard "System of definite list", which increases new technical standards. The types of pesticides, veterinary drugs and additives are only 63 pieces in general requirements, however, they increase to 797 pieces in accordance with the requirements of "System of definite list" in 2006 [5]. Residue standards of Pesticides and veterinary drug have increased to 734 pieces in the list. Chemical standards have increased from 2470 pieces to the present 51,392 pieces in the list. It will be difficult for more than 6200 Chinese

enterprises to sell the agricultural products to the market of Japan in the future. Along with limited variety increase, the number of exports will reduced greatly.

3.2. Increase the cost of our country's export product

The economic theories not only have positive effect, but also have negative effect. The government may formulate the patent technical standards so that they can control negative effect. Then, so as to breaking down the patent-based technical barriers, the exporters may take many measures, for example they may obtain the authentication in the aspect of exportation. These measures can increase the cost of the products.

Judging from the inner angle, the government has established the patent-based technical barriers in order to overcome the negative effect of market transaction. If the product doesn't conform to the patent-based technical standards, the exporters have to stride over the barrier diligently to obtain great profits. The exporters can not only enhance the quality of the product to a new level but also utilize the intellectual property to increase extra investment, which may directly increase the cost of our export products and weaken the competitive power in the marketplace.

Judging from the external angle, the exports will do everything to break through the patent-based technical barriers for the actuation. Owing to the request of the importers, the exporters must pay the extra cost for the authentication and pay the patent fees for entering the host country, which may increase the cost of products and raise the price of exports. Take the DVD industry for example, because the oversea enterprises grasp the patent technical standards, Chinese enterprises must pay additional 4 dollars for each exported DVD. According to this calculation, Chinese enterprises have to pay more than 3 billion dollars for the patent fees every year [6]. This situation clearly imposes additional costs upon our DVD producers .So DVD industry can lose competitive advantage of the price, and what is more, many enterprises may go out of business in abundance.

3.3. Cause the contraction of our industry

According to the public goods basic principles, the government drafts the patent-based technical barriers to limit the entrance of infringing commodity so that they can solve the insufficient supply of the high quality public goods. The patent-based technical barriers also can block the correlated industry to enter some countries. As the number of the restricted public goods increase greatly, it will be unable to prohibit the contraction of related industries for the narrowed market. If this situation can last a long time, these industries will wither away in the competition [7]. This measure may have the negative influence on industry structure, national economy development and even world status in the future.

Related industries involved in Section 337 Rules of Practice and Procedure including electronics industry, chemical industry, light industry, machinery industry, automobile industry and leather industry are functional. Among of them, there are 26 electronics cases, 12 chemical cases, 9 light industry cases, 3 machinery industry cases, 2 auto industry cases and 1 case involved in leather industry. In short, Section 337 Rules of Practice and Procedure place a significant effect on electronics industry. All of them make our country labor-intensive mechanical and electrical industry recession [8].

4. Strategies on How to Counter the Patent-Based Technical Trade Barriers

4.1. Quicken the step of using the international standard

The developed countries have formulated the related patent technical standard so that they can solve the situation of informational asymmetry. So as to break through the related technical barriers, we should adopt the international standard as soon as possible. As far as the international standard concerned, developed countries view it as normal, but developing countries think it very difficult to adopt. Some patent technical standards fall behind international standards in some developing countries, especially in our country. So we should adopt the international standard or the advanced standard in order to break through the patent-based technical barriers.

4.2. Purchase the innovative enterprise through the direct investment

In view of the established patent technical barriers, the enterprises may buy the patent technology through annexation [9]. In this case, enterprises may produce products in the locality or sell products which don't need to be authorized in the foreign market, so the producers can deal with the patent technical barrier easily.

4.3. Create alliance of industry and adopt combined action

Pure market mechanism can't produce sufficient social public goods, so the government establishes the patent-based technical barriers to restrict the entrance of products which can't conform to the patent technical standards. According to the patent technical standards and the prosecution on intellectual property rights, the individual enterprise can't pay the huge fees for lawsuit. The government should combine all related enterprises to deal with the lawsuit [10]. In that case, every enterprise can spend very few money for lawsuit. So the industry can break through the patent-based technical barriers.

5. Summary

The patent-based technical barrier has become the important means of technology barriers and produced seriously influences on the development of foreign trade of our country. It is adopted by most countries, especially the developed countries. Because the patent-based technical barriers will happen corresponding change as conditions change, it is still necessary for us to pay continuous attention and discuss about how to adopt a more flexible and effective preventive strategy.

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