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Analysis for Export Trade of Steel Market Environment

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Abstract: Nowadays, companies in the Chinese steel market are in the face of difficulties because of certain policies and the special environment in this market. The policy that makes a huge difference in the market is the cancellation of export rebates. This essay will analyze the impact of this new policy and the environment of this market using the PEST model. The essay exemplifies a company called Jinan Haofeng Import & Export Co., Ltd. in the market to do such analysis. With the analysis of this company, the problem that led the company to such a difficult situation will be found out and solved. The last part of the essay will show the solution to this problem by using competitive strategies, including differentiation, overall cost leadership, and focus strategies. The analysis can help to exclude the differentiation and the overall cost leadership strategies because of the economic and political factors in the PEST model. The focus strategy can help solve the problem. The company needs to stay focused on advancing the technology for producing the steel coil. In this way, the company can stay at its break-even point instead of shutting down in the long run.

Keywords: production of steel, export-rebates, environment analysis (PEST), Competitive Strategy

1. INTRODUCTION

Research shows an increase in the production of steel twenty years ago. A chart shows that China's share of world steel production increased from 14.75% in 1998 to 36.62% in 2007. Jinan Haofeng Import and Export Co., Ltd. is a company that exports steel coil and is established in this trend. Staff participate in the China Import and Export Commodities Fair to get acquainted with intermediaries and customers and establish preliminary trust. Both sides reach agreements and sign a contrast after the communication of prices and quality of products. The company produces the cold-rolled steel coils or hot-dipped galvanized steel coils and then arranges the product color coating in industry. After production, the company notifies the customer to inspect the goods and charters a ship to send the products to customers. The company must declare export to the customs and apply for the original lading bill of the shipping company. The scanned copies are sent to the customer so that they can pay for the goods. After receiving the money, the company informs the shipping company to send out products to customers. This is the whole process of exporting steel. Because of the large cost of energy and natural resources during production as well as the bad effect on the environment during these decades, governments in China cancel export rebates nowadays, which caused a problem for this company.

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In this paper, I take a step toward theoretically examining the source of the problem and the new strategy to help the company transform and be profitable. I will use a model called PEST (Politics, Economics, Society, and Technology) to analyze the environment of this steel company in the market and point out the effects that the cancellation of export rebates has on this company. After a well-rounded analysis, I will think about a method to help this company out of its current dilemma according to a competitive strategy model.

The rest of this paper is organized as follows: section 2 discusses the related literature and highlights the reasons and impacts of implementing the new tax rebate law; section 3 analyzes the main problem the company meets by examining the environment of the market and provides a solution to solve this problem; section 4 concludes all the contents of this paper; the last section is about the contribution of the author and references to this paper.

2. REVIEW

Jing-Li Fan and other experts explain the definition of an export rebate. Export rebates play an important role in exports. It is the refund of many types of taxes paid by producers or consumers in the country. Because the producer has obtained the export rebate, which enables them to have a lower cost of production, they can be more competitive in the global market due to their less expensive products. Jing-Li Fan and other experts also point out one reason that the government in China cancel the export rebate-environment. This policy is set up in industries that are highly energy-consuming and environmentally harmful. With this regulation, producers will decrease their production of such environmentally harmful products due to higher taxes, thus alleviating the problem of environment [1]. Lafang Wang et al. found that in 1994, China's total GHG emissions were about 4,060 million tons of carbon dioxide equivalent (MMTCO2e). In 2004, China's total GHG emissions to be about 6,100 MMTCO2e, a growth of 50% in one decade [2]. Zhiwei Xu, Qiang Wen and Teng Zhang find the relationship between tax rebates and level of pollution. Based on panel data of 279 prefectural cities measured between 2004 and 2011 in mainland China, the DID estimates indicate that the PM2.5 concentration significantly decreases by 0.223 units as the average ETR rate of pollution-intensive products declines by 1%. The back-of-the-envelope calculation suggests that the magnitude of haze reduction induced by ETR structural adjustment accounts for 11% of the change in haze pollution from 2004 to 2006, thereby demonstrating considerable economic significance [3]. Churen Sun and Han Wu concluded the impact of the tax rebates on the price markup. They cite a data from Braakmann et al. (2020) which documented that a decrease in the export VAT rebate leads to a decrease in export value and quantity, while the effect of this rebate on export price is negative, since the gain of higher VAT rebates is passed through to foreign consumers by lowering export prices [4]. Wei Wei showed that the national VOC emissions would continuously increase from 19.4 tg in 2005 to 25.9 tg in 2020 [5]. Jinsoo Kim, Benjamin K. Sovacool etc. points out the impact of pollution in steel industry on the global environment. The iron and steel sector emits 2.6 Gt CO2e annually, which is 7% of the global emissions from the energy use and 7 9% of global anthropogenic CO2 emissions the highest among heavy industries [6]. Siping Niu, Yanrog Xia, Chihe Yang and Chaoge Liu concluded that the pollution from steel industry can have bad impact on the soil quality. The concentrations of Cd, Cr, Cu, Ni, Pb, and Zn were 9.68 ± 3.56, 170.31 ± 82.40, 90.62 ± 19.54, 30.61 ± 6.72, 125.43 ± 63.60, and 1276.59 ± 701.90 mg/kg in the area with steel industry respectively. Higher levels of Cd, Cr, Cu, Pb, and Zn were detected in the steel industry affected sediments. The enrichment factor and indicated that the heavy metals were primarily derived from steel industrial activities. Multiple risk assessment models suggested that these sediments, especially Cd, are the main contributor to sediment toxicity [7]. Vladimir Brummer, Sin Yong Teng, David Jecha etc. indicate the harm of VOCS, a pollution generated from steel production. The VOC (volatile organic compounds) group contains various chemical species with many harmful properties to the

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environment and the health of the living species (Zhang et al., 2021). This is the reason why VOC belongs to the group of highly undesirable air pollutants and needs to be mitigated from the industrial streams before releasing them into the atmosphere [8]. There are some technologies that can help reduce pollution when producing steel coils. SDS (sulfur dioxide scrubber) is a high-efficiency desulfurization method. The desulfurization agent is sprayed uniformly in the master channel and is activated by the heat in the pipeline. In this way, it can fully stay in contact with the acidic flue gas, which stimulates physical and chemical reactions. Thus, sulfur dioxide and other acidic substances are absorbed and purified [9]. Denitrification is a method to remove nitrogen. This process makes use of activated carbon as a catalyst in the chemical reaction between ammonia and NO. This technology can remove mercury, arsenic, hydrogen fluoride, hydrogen chloride, dioxin, and other harmful substances from the flue gas. It can also retain the dust in the coke layer, which reduces the content of harmful substances in the purified flue gas. In this way, it improves the utilization rate of such equipment [10].

3. ANALYSIS ABOUT THE OPERATING ENVIRONMENT

3.1. politics in Chinese steel industry

There are four policies affecting the company, including tax laws, environmental protection laws, labor protection laws, and some industrial policies.

This part will discuss the tax law. According to the policy of the government mentioned in the review, China finally annulled the earlier 13 percent export tax rebate for some steel products beginning May 1, 2021. Steel products, including hot-rolled coil, hot-rolled and cold-rolled sheet, plate, and others, have been affected. There are three main reasons for issuing this policy. The first reason is about protecting the environment, which has been mentioned in the review. The second reason is about adjusting prices. The raw material, iron ore, is mainly imported from Australia and Brazil. However, there was a “cold war” between China and Australia, and the price of iron ore continued to rise, which takes up a large proportion of foreign exchange resources. By imposing the abolition of export tax rebates on steel products, countries can achieve a reduction in the export of finished steel products. In this way, it can reduce dependence on imported iron ore and encourage the recycling of domestic steel scrap at the same time. Thus, the price of steel will decrease.

Because Haofeng Company produces cold-rolled steel coils or hot-dipped galvanized steel coils, the production scale has been limited. The main problem is that this policy has prompted numerous domestic steel manufacturers to utilize some immoral strategies to be more competitive and earn more profits in the domestic market, like buying orders for exporting to circumvent value-added tax obligations. Consequently, export enterprises like Hofeng Company that adhere to regular value-added tax payments undertakes higher costs than their competitors. Thus, it has to raise the price of products to make sure it will not lose money as mentioned in the fourth reference, which leads to a less competitive price and the loss of customers.

The second is about the Environmental Protection Law. The steel production process generates various forms of pollution, including heavy metals like lead, mercury, and chromium. The production of color-coated steel strip generates VOCS and other exhaust emissions. As mentioned in the eighth reference, VOCS will bring diseases to workers in industry, including respiratory irritation, headaches, eye pain, allergic reactions, and lung cancer. As environmental regulations have become increasingly stringent in recent years, steel enterprises have been compelled to adopt pollution control measures to ensure compliance with environmental protection requirements. As reference nine and ten in the review states, it is the obligation of the industry in many city in China to follow the technology advancement in order to reduce the pollution. What is more, the industry that produces products for Hofeng needs to follow environmental rules and limit its production sometimes. Thus,

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the company must connect with the customer to adjust the time for transporting the product, and they may take the risk of losing their reputation due to such a delay.

The third policy is focused on labor protection. The implementation of measures to protect the legitimate rights and interests of employees has become a crucial aspect of corporate responsibility. Steel enterprises actively contribute to employees' social security and personal accident insurance, ensuring that employees feel secure and supported in their work environment. By complying with labor protection laws and regulations, enterprises foster a positive work culture, which can enhance employee loyalty and productivity.

The last part discusses some industrial policies. The government's policy of restricting the import and export of specific products will result in poorer international mobility for the products.

(1) There are foreign import restrictions. For example, Nigeria and Ethiopia encourage the import of steel coils and other semi-finished products while imposing high tariffs on the import of single tiles and other finished products because the semi-finished products for further processing can be a driving force for domestic labor force employment.

(2) China's export restrictions, like canceling the export tax rebates, can reduce the export of steel products.

To summarize, both foreign and domestic import and export restriction policies can cause the international mobility of products to deteriorate.

3.2. economics factors affecting the company

Economic factors, including market mechanisms, market demand, exchange rates, and inflation rates, significantly impact steel product exports.

From the perspective of microeconomics, the market mainly faces the African market, and the Chinese steel industry operates in a perfectly competitive global market, characterized by low-cost production and low barriers to entry. When people think that this market is more promising and they can earn more profit, a large number of them tend to choose to enter it. It is easy for them to enter the market due to the low barriers. However, the increase in supply of the products will lead to a decrease in price in the market, which will make the price of the firm decrease. Thus, they will lose money in the short run, according to the table below.

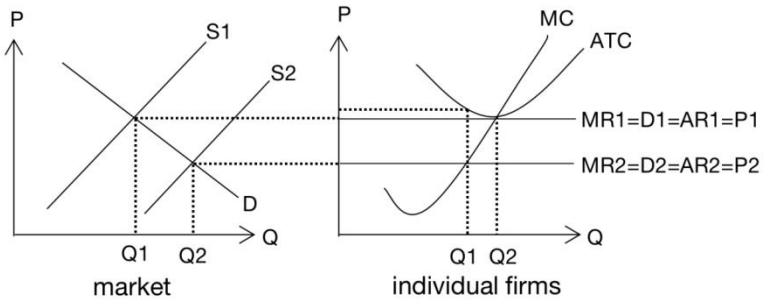

Figure 1: perfect competitive market and individual firms

Thus, if individual companies in this market charge higher prices than the market price, they will run the risk of going bankrupt. As mentioned before, the Hofeng company is in the face of this situation. Because of the cancellation of the export tax rebate, Hofeng needs to increase the price to cover higher costs. Thus, it is difficult for it to survive in this market.

From the perspective of macroeconomics, there are three main factors affecting the exports of companies.

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First, the unexpected inflation that exists in the domestic market will raise the overall price level as well as the price of products that are exported to foreign countries. Higher prices will be less competitive worldwide, so the quantity of foreign demand will decrease.

Second, the exchange rate will be a factor that influences the scale of exports. When the US dollar exchange rate is higher, which means that the dollar appreciates. Thus, companies can exchange more RMB, which is beneficial to them.

Third, the economic conditions of foreign countries, especially Africa, will determine the quantity of exports. When the foreign currency is desirable, it will drive domestic consumption and domestic infrastructure, thus increasing the import of steel products. Some developing countries, due to the backwardness of their infrastructure, need a lot of investment, thus increasing the import of Chinese steel products.

3.3. society

Steel product exports primarily target African markets. Understanding and respecting cultural differences, particularly the religious practices of Islamic nations, play an essential role in maintaining successful business relationships. The company must navigate these societal nuances to forge mutually beneficial partnerships and secure a competitive edge in African markets. For example, when having a meal with the customer, staff need to pick a restaurant without pork dishes. Praying is one of the most important acts in the branches of Islam. It is a way to worship Allah, showing love and devotion to Him. It keeps the soul and mind free from any pollution, such as paganism. When they pray, people need to wait for them and not disturb them to show respect for this religion.

3.4. technology for producing steel

Technological innovations and advancements have a profound impact on the steel industry's efficiency and cost-effectiveness. The adoption of state-of-the-art production technologies like automated manufacturing technology has significantly improved production efficiency, reduced production costs, and enhanced the competitive advantage of Chinese steel enterprises in the international market. The speed of the production line increased from 30 meters per minute in the beginning to 200 meters per minute last year. The number of color-coated lines in the factory increased from one to three, and the galvanized lines increased from one to five, which are expansions of the production volume. In addition, as mentioned in reference nine and ten, the appearance of environment-friendly technology reduces the risk of getting illness for workers. Thus, this will increase the productivity of workers in the industry. As the industry continues to innovate, investments in research and development are crucial for sustaining long-term growth and maintaining technological superiority.

4. SOLUTION

As the analysis above, the Hofeng company now meet the problem, it needs transformation to survive in the market. Competitive strategy can help to solve this problem. As the table show below:

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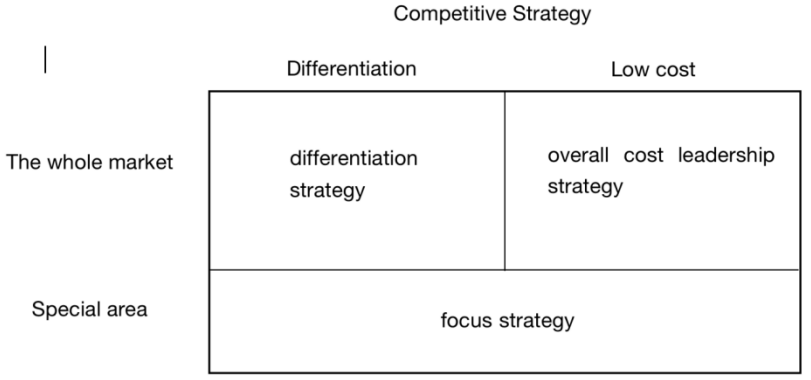

Figure 2: diagram of competitive strategy

The differentiation strategy requires the company to design a product that is different, but the steel market is a perfect competitive market and steel production is a heavy industry. Thus, the company cannot make use of this strategy to make a transformation.

The overall cost leadership strategy is not helpful to solve this problem, because the problem that the company has now are the high cost and less competitive price.

Thus, the last strategy-- focus can be the solution to this problem. Because the steel coil is produced in the industry, the company can focus on the improvement of the industry. First, the company needs to advance their machines to increase their productivity, which can save labor and time costs. Second, there are VOCS generating as I mentioned above, the company can make use of a technique installed on the machine to prevent workers getting connected with too much VOCS. In this way, the labor productivity can be improved due to a healthier condition.

5. CONCLUSION

The complexities of steel product exports necessitate a comprehensive understanding of the various factors at play. The interplay of tax law adjustments, environmental protection regulations, labor protection laws, and industrial policies alongside economic (including market structure that explains the result of higher prices, inflation, exchange rate, and foreign conditions), society, and technological factors shapes the landscape for Chinese steel enterprises in the international market. The cancel of export tax rebate makes a huge difference towards the Haofeng company, because Haofeng follow the tax law and have more costs in production than the competitors who evade the tax. However, there are ways, helping this company transform and earn profits by using the competitive strategy: focusing on improving the production line to generate less costs and then the price of the products can be more competitive in the market.

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