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The Impact of Green Trade Barriers on Developing Countries' Exports and Policy Responses -- Taking China's Export of Agricultural Products as an Example

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Abstract: The paper examines the significance and implications of green trade barriers, particularly in the aftermath of the 2008 Global Financial Crisis, during which protectionism tendencies among developed countries were intensified. It focuses on how these barriers affect international trade, with a particular emphasis on agricultural exports, especially for developing nations such as China. The study highlights the challenges faced by Chinese agricultural enterprises in adapting to strict international environmental standards, resulting in increased operational costs and reduced competitiveness in global markets. Findings reveal that while green trade barriers aim to promote environmental protection, they may inadvertently hinder the export capabilities of developing countries, thereby reducing market share. The paper proposes several recommendations, including the need for governments to establish stringent but fair environmental regulations that align with international standards, provide financial support for green innovation, and actively engage in multilateral trade negotiations to create consistent environmental requirements. It also underscores the importance for enterprises to adopt sustainable practices and diversify their market strategies to mitigate the adverse effects of these trade barriers.

Keywords: green trade barriers, international trade law, agricultural export, developing countries.

1. Introduction

The 2008 Global Financial Crisis severely impacted the world economy, pushing the financial sectors of developed countries to the brink of collapse, damaging the virtual economy, and exposing the lack of international competitiveness in traditional manufacturing sector, which led to a slow recovery. In contrast, developing countries, which rely on traditional manufacturing, were less affected and recovered more quickly. The uneven recovery between developed and developing countries raised widespread concerns among the developed countries, leading to the rise of protectionism [1]. In this context, it is of great practical significance to study common trade protection measures.

In the previous literature, research on the trade effect of anti-dumping measures in different development stages, different economies and different product categories has been quite rich. These studies generally point out that anti-dumping measures can effectively curb the entry of imported goods to a large extent [2]. However, a case study shows that anti-dumping measures have not

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effectively curbed imports, which challenges the expected function of anti-dumping policies in trade regulation [3].

This article focuses on one particular kind of trade barrier: green trade barriers. Green trade barriers refer to non-tariff measures that some countries and international organizations control international trade activities that may cause ecological damage and environmental pollution by formulating environmental protection standards and regulations, thereby restricting free trade. Many researchers have proposed unique insights into green trade barriers. A study argues that developed countries, by implementing green barriers centered around environmental regulations, safety and health standards, and green certification labels, have effectively achieved the same outcomes that were previously accomplished through quota restrictions [4]. Another study argues that green trade barriers have subtly raised the costs of China's export products, including expenses for inspection, quarantine, packaging, and other related factors. As a result, this has diminished the international competitiveness of China's exports, potentially causing the country to lose further market share in the global arena [5]. Some researchers considered that green protection measures are easy to get the support of the international community to win the international market, but it makes developing countries fall into a green trap [6].

This article concerns the green trade barrier measures currently used by major developed countries, such as the United States and the European Union. The article uses the agricultural export as example to analyze how these measures affect the production and operations of businesses in developing countries, especially in China. The article also explores the positive and negative effects of these measures on developing countries. Finally, this article explores how developing countries should respond to the green trade barriers set by developed countries.

2. Overview on Green Trade Barriers

2.1. Legal Basis for Green Trade Barriers

The legal basis most commonly cited for green trade barriers is Article XX of the General Agreement on Tariffs and Trade (GATT), which is often referred to as the "The Environment Protection Exceptional Right (EPER)." Subsection (b) of Article XX, which permits measures "necessary to protect human, animal or plant life or health," and subsection (g), which allows measures "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption," are frequently invoked as legal grounds for green trade barriers. Due to the broad language in these provisions, there is a risk of their misuse as a form of trade protectionism. Therefore, Article XX includes strict conditions, and both panels and the appellate body have provided detailed and rigorous interpretations of the provisions, applying a "strict interpretation" principle to many of the clauses in Article XX [7].

Based on Article XX, Agreement on Technical Barriers to Trade (TBT) and Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) were developed. The TBT Agreement legitimizes the imposition of technical barriers aimed at protecting the domestic environment, ensuring national security, safeguarding public health, and enhancing the quality of exported products. Green trade barriers are a form of technical barriers to trade, and the TBT Agreement serves as one of the legal frameworks for their implementation. The SPS Agreement establishes measures necessary to protect the life and health of humans, animals, and plants, but such measures must conform to relevant international standards and cannot constitute trade discrimination or unjustified restrictions [8].

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2.2. Common Measures of Green Trade Barriers

The first measure is the green tariff system, which is one of the most common and widely used trade restrictions. It refers to the practice where the importing country, based on environmental protection and public health considerations, imposes environmental protection taxes on exporters when their products fail to meet the country's domestic green standards. Some developed countries establish green requirements that exceed international norms and use this system to impose higher tariffs on exporters, thereby limiting exports from other countries and protecting their own trade interests.

The second is green production technology standards, which refer to strict environmental protection technology standards set by countries, often through legislation or administrative orders, to limit the import of foreign products. These standards are based on the economic and technological development level of the country. Currently, widely recognized green production technology standards internationally are mostly derived from developed countries. For example, the International Organization for Standardization (ISO) 14000 series standards established by the European Union are a typical example of green technology standards.

The third one is the green sanitary and quarantine system. This measure refers to the comprehensive inspection of imported products by relevant national authorities to determine whether they contain harmful substances, thereby preventing non-compliant products from entering the domestic market.

The last one is the green environmental label. The green environmental label is a graphic recognized by authoritative organizations, indicating that the product not only meets environmental quality standards but also adheres to environmental protection requirements throughout its production, usage, consumption, and recycling processes. Many countries have their own environmental labels, especially developed European nations. However, due to varying levels of environmental technology and differing certification standards for green environmental labels across countries, this has also created a window for green trade barriers [9].

3. Green Trade Barriers in the Agricultural Industry

3.1. Agricultural Export from China

Taking China as an example, there are more than 20,000 agricultural export enterprises in China, most of which are small and medium-sized enterprises. These enterprises generally face problems such as low added value of products, lack of private brands, and insufficient international marketing capabilities.

China’s agricultural exports have several key varieties, which are aquatic products, vegetables and fruits, exports accounted for about 25 %, 15 % and 10 % of the total exports of agricultural products. The reason why these products can be exported for a long time is determined by the comparative advantage of China’s agriculture industry. China has large population but less per capita arable land, so it is difficult for China to have international competitiveness in land-intensive bulk agricultural products. In contrast, aquatic products, vegetables and fruit production have more prominent labor-intensive characteristics, and China has a leading technology in processing agricultural products. With obvious advantages, about 40 % of aquatic products are exported by processing trade, and the export of processed fruits and vegetables, pre-packaged foods and other products is also in the world leading position.

In 2023, China’s top ten agricultural export markets accounted for 62 % of total exports, of which Hong Kong ranked first with exports of $ 10.8 billion, accounting for 11.1 % of total exports. Japan and the United States ranked second and third respectively, accounting for 10.3 % and 10.2 % of total exports respectively [10].

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3.2. The Impact on Prices and Output Level

In the absence of green trade barriers, an agricultural export enterprise has a specific cost structure. However, when facing green trade barriers, significant changes will occur. Enterprises have to invest a large amount of money to improve the agricultural production environment and implement green management in the production, processing and transportation of agricultural products. They also have to bear the additional costs related to testing, inspection and international standard certification of green technology standards. These factors jointly lead to an increase in the production cost of agricultural products. Therefore, in order to maintain a certain profit margin, the product price has to go up. The increase in price will weaken the price competitiveness of the products. As a result, consumers may be less willing to buy, leading to a decline in sales volume. Even if the enterprise tries to maintain the initial price to stay competitive, the increased costs due to green trade barriers will also reduce the profit [11].

Since many Chinese agricultural enterprises are small and medium-sized, they may not be able to afford the increased production costs, so their products are excluded from markets in developed countries by green trade barriers, which makes the export volume of agricultural products decline. If powerful firms surpass the green trade barriers by raising the standards of their own products, importing countries will set higher standards to re-limit the number of imports in order to maintain the barriers.

In summary, green trade barriers will impact agricultural product exports in terms of both price and quantity, leading to a decrease in the competitiveness of agricultural export enterprises in developing countries, represented by China, and a reduction in export volumes.

3.3. The Impact on Domestic Market

Green trade barriers prompt domestic agricultural product producers to pay more attention to product quality. Due to the strict green trade barriers set up in foreign markets, those export-oriented agricultural enterprises have to raise their production standards in order to remain competitive in the international market, which also indirectly affects the quality of agricultural product supply in the domestic market. However, improving the production quality of agricultural products usually means more costs need to be invested. Enterprises may need to introduce advanced production technologies and equipment, and strengthen the supervision and detection of the production process. All of these measures will increase the production cost. In the domestic competitive environment, the rise in cost may cause the price of agricultural products to increase, which in turn will affect consumers' purchasing intentions. Some small-scale agricultural product producers may fall into a survival dilemma, because they are unable to bear the high costs, which may, to a certain extent, have an impact on the diversity of the domestic agricultural product market.

The existence of green trade barriers promotes the domestic market to accelerate the construction of a perfect agricultural product production standard system. In order to meet the challenges of the international market, the government and relevant departments will actively refer to international advanced standards to formulate more stringent domestic standards. For example, the government could strengthen the supervision standards for pesticide residues, heavy metal contents, food additives, etc., so as to promote the domestic agricultural product production to develop in a greener and safer direction. At the same time, due to the differences in green trade standards among different countries and regions, domestic enterprises may face confusion in the process of adapting to international standards. Some enterprises may get into trouble, because it is difficult for them to meet the different standard requirements at home and abroad simultaneously. In addition, the frequent changes of standards will also bring great uncertainty to enterprises, increasing their operating costs and risks.

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4. Policy Recommendations

4.1. Government

The government should formulate strict environmental protection regulations and standards that are in line with international standards to ensure that domestic enterprises pay attention to environmental protection during the production process [12].

The government can provide financial support and tax incentives to enterprises, encouraging them to engage in environmental protection technology innovation and green production. For example, the government could set up special funds for environmental protection technology research and development, and rewarding enterprises that have made outstanding achievements in the field of environmental protection. At the same time, tax relief is given to enterprises producing green products, reducing their production costs and enhancing the price competitiveness of their products in the international market [13].

The government should actively participate in multilateral trade negotiations and promote the establishment of fair and reasonable international trade rules. During the negotiations, it should be emphasized that the rationality and necessity of green trade barriers should be based on scientific evidence, and unreasonable trade restriction measures should be opposed. Through multilateral cooperation, international standards are jointly formulated to ensure the consistency of environmental protection requirements among countries and reduce the emergence of trade barriers.

4.2. Enterprises

Enterprises must fully recognize the importance of green trade and establish the awareness of green trade. They should integrate the environmental protection concept into the enterprise's business strategy and production management, and actively take environmental protection measures to improve the environmental protection performance of products [14].

Enterprises should increase their investment in technological innovation, and develop environmental-friendly products and production technologies. Through technological innovation, the quality and added value of products can be improved, production costs can be reduced, and the competitiveness of enterprises can be enhanced. Meanwhile, they should actively introduce advanced foreign environmental protection technologies and management experiences, and continuously improve the environmental protection level of enterprises.

Enterprises need to establish and improve a quality management system to ensure that products meet international standards and environmental protection requirements. The enterprises should also strengthen the management of raw material procurement, production processes, product inspection and other links, and strictly control product quality.

Finally, enterprises should not rely too much on a single market and should actively explore diversified markets. In the process of developing new markets, enterprises need to understand the environmental protection requirements and market demands of different countries and regions, and adjust the product structure and marketing strategies in a targeted manner. Through the diversified market layout, the impact of green trade barriers on enterprises can be reduced [15].

5. Conclusion

The paper examines the significance of green trade barriers, particularly in the context of the post-2008 Global Financial Crisis, which heightened protectionism in developed countries. The purpose of the study is to analyze the implications of these barriers on international trade, especially for developing nations like China. It highlights the challenges faced by domestic enterprises in adapting to varying international environmental standards and the resultant operational uncertainties and costs.

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The findings suggest that while green trade barriers aim to promote environmental protection, they can inadvertently hinder the competitiveness of developing countries' exports. The paper recommends that governments should establish strict yet fair environmental regulations aligned with international standards, provide financial support for green innovation, and engage in multilateral trade negotiations to create consistent environmental requirements. Additionally, enterprises should adopt green practices and diversify their markets to mitigate the impact of these trade barriers.

This article has several limitations. Firstly, the analysis primarily focuses on the impact of green trade barriers on specific industries, such as agriculture, which may not fully represent the complexities of other industries. This industry-specific research approach limits the general applicability of the conclusions. Additionally, the study relies on existing literature, which may introduce biases or provide incomplete data regarding the actual impact of green trade barriers on international trade dynamics. Further, this article employs qualitative analysis rather than quantitative analysis. This leads to certain deficiencies in data support and result validation, which may affect the reliability and persuasiveness of the conclusions. Future research should consider a broader range of industries and incorporate empirical data to assess the real-time impact of green trade barriers. Furthermore, integrating multidisciplinary approaches that combine economics, environment, and technology can provide a more comprehensive understanding of the challenges and opportunities posed by green trade barriers in the global market.

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