Analysis of the Optimization Effect of International Agricultural Trade on the Upgrading of China's Industrial Structure

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Abstract. This article will take the development and current situation of China's agricultural international trade as the starting point to analyze how agricultural international trade can promote the optimization and upgrading of China's industrial structure. At present, China's import and export of agricultural products are facing challenges, and the international agricultural market competition is fierce. China's agricultural import and export structure itself is facing the problem of imbalance, coupled with factors such as the epidemic and trade frictions, which have had a certain degree of impact on foreign trade. Especially under the trade friction between China and the United States, the imposition of tariffs has made agriculture one of the industries most affected. Labor-intensive exports with extensive growth are becoming increasingly less competitive in the international market. In this international situation, China should shift from a labor-intensive export structure to a capital and technology-intensive export structure. To achieve this transformation, technological progress and the optimization and upgrading of domestic industrial structures are very important steps.

Keywords: International trade, agriculture, industrial structure, technological progress.

1. Introduction

In the current era of deepening economic globalization, the contribution rate of international trade to economic development is increasing. As one of the three driving forces for economic growth, exports play an important role in China's national economy, optimizing resource allocation and creating foreign exchange income. Agriculture is the primary industry in China. As a major agricultural country, agriculture accounts for a significant proportion of import and export volume. But now there is a problem of import and export imbalance in international agricultural trade itself, with imports far exceeding exports, resulting in serious imbalances. In addition to the current COVID-19, trade friction, and other factors, the growth of international trade is under pressure.

The current research scope of scholars on international trade-related issues is extensive. The rapid development of digital technology has brought about a wave of digitalization and important development trends, forming an important driving force for the high-quality development of China's foreign trade. By promoting the formation of a broader, more comprehensive, and deeper pattern of opening up to the outside world and trade in China [1]. Since "the Belt and Road" initiative was put forward, trade groups have become the main feature of the trade network among countries along the " Belt and Road" at this stage; The trade network presents a trade pattern in which multiple core countries drive the trade linkage of neighboring small countries and promote the gradual integration of existing trade groups [2]. Under the dual circulation international trade and economic development pattern, a systematic international trade system, through a sound import and export trade mechanism and a mature international factor division of labor model, can not only comprehensively promote the prosperity and development of China's real economy, but also optimize China's economic development structure and promote the comprehensive upgrading of China's industries [3].

This article focuses on the intensification of international competition pressure and uses technological progress as an intermediate link to analyze the role of agricultural international trade in optimizing China's industrial structure.

This article will take international agricultural trade as a starting point to examine the unfavorable situation faced by China's labor-intensive trade structure with extensive growth in the increasingly fierce international competition. At the same time, the viewpoint will be refined, with a focus on the

practical problems of agricultural imports and exports and the necessity of structural optimization, highlighting the importance of technological progress in international competition. Thus, it can be more clearly recognized that the labor-intensive structure dominated by agricultural products and industrial raw materials is developing towards capital and technology-intensive, which helps to better occupy an advantageous position in international trade and competition.

2. Realistic Background

2.1. The Development Status of International Trade in Agricultural Products in China

After joining the WTO, China's better integration into the international market is both an opportunity and a challenge. Affected by COVID-19 in 2020 and the deepening trade friction, China is currently facing the dilemma of expanding trade deficit in the import and export of agricultural products. China is currently the world's largest agricultural importer, with a total import and export volume of agricultural products increasing from 27.45 billion US dollars in 2001 to 246.83 billion US dollars in 2020, an increase of 7.99 times and an average annual growth of 12.3%. Among them, the average annual growth rate of exports is 8.5%, while the average annual growth rate of imports is 15.3% [4]. As shown in figure 1, in 2022, China's total agricultural import and export volume was 334.32 billion yuan, of which exports accounted for 98.26 billion yuan and imports amounted to 236.02 billion yuan. It can be seen that China's agricultural imports are greater than exports. Due to the high demand for agricultural products, China relies on imports for some agricultural products, resulting in a high degree of dependence on foreign trade.

Secondly, structurally speaking, according to data from the Ministry of Commerce, in 2022, China will mainly import meat, grains, and soybeans, while exporting fruits, vegetables, and aquatic products. It can be seen that China has a high demand for the import of important agricultural products with high demand, such as meat and grain, which is a practical situation that needs to be optimized and solved.

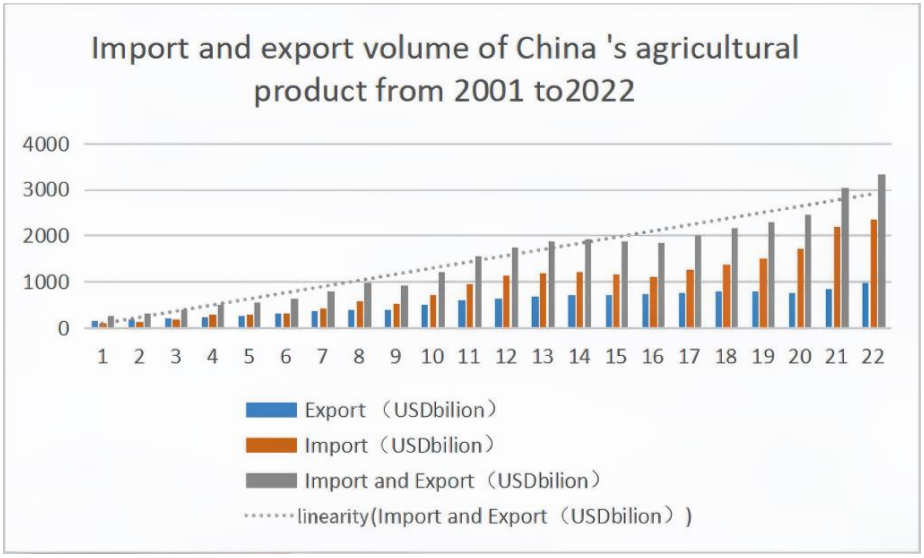


Figure 1. Import and expert volume of China’s agricultural product from 2001 to 2022 (Data source: International Cooperation Department of the Ministry of Agriculture and Rural Affairs)

2.2. The Current Situation of China's Industrial Structure

China's economy has entered a new stage of development, and optimizing industrial structure has been included as one of the key points in the 14th Five-Year Plan. In terms of industrial structure adjustment, there are corresponding adjustment policies at different stages of China's economic development, from the "213" policy in the early stages of reform and opening up to the effective "231" policy in the early stages of economic development, and then to the "321" policy after 2012.

The primary, secondary, and tertiary industries are closely related to changes in GDP growth. As shown in figure 2, the contribution rate of the tertiary industry to GDP has shown an overall upward trend, with its contribution increasing from 28.4% in 1978 to 57.6% in 2016. In recent years, it has begun to surpass the secondary industry and become the main contributor to GDP. The contribution rate of the primary industry to GDP fluctuated significantly before 1991, but after that, there was no significant fluctuation and it remained below 10% [5].

From this, the author can analyze that the contribution rate of the primary industry, mainly agriculture, forestry, animal husbandry, and fishery, to the economy, is at a low level, but at the same time, it also plays an important foundational role. So the research should delve deep into the industry, understand the shortcomings of industrial development, and apply modern intelligent technology and scientific means to these traditional basic industries. At the same time, it is also necessary to strive for steady progress in the tertiary industry, maintain its contribution advantage to GDP, conduct in-depth research on existing technologies, continuously innovate, research and develop new technologies, seek new economic growth points, and provide stronger support for economic development. Analyze and optimize the existing industrial structure to better adapt to the current economic situation and gain more advantages internationally.

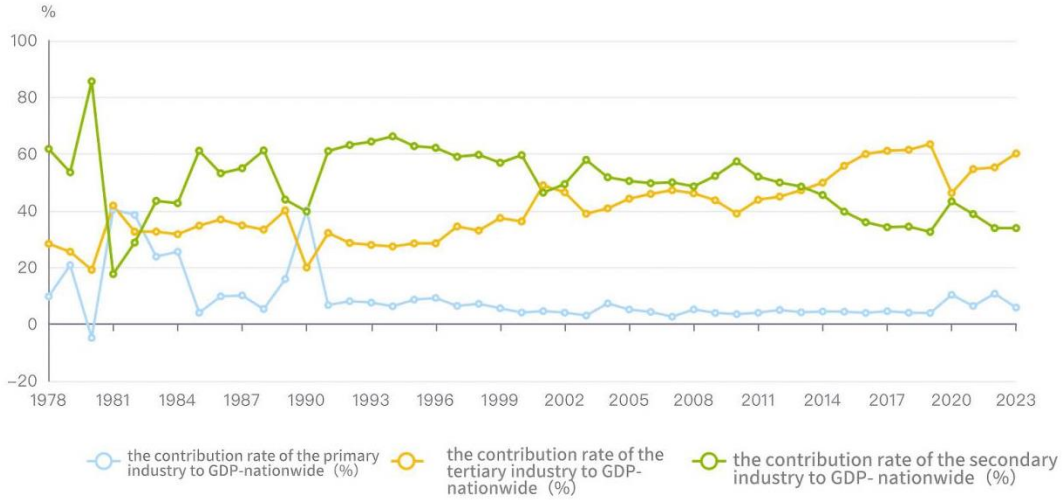


Figure 2. Impact of China's primary, secondary and tertiary industries on GDP growth (Data source: Zhongjing Data)

3. The Impact Mechanism of International Trade of Agricultural Products on Industrial Structure

The current trade in the author's country is a labor-intensive export structure with extensive growth, mainly focusing on rough processing and raw material products with low export-added value, and agricultural products belong to this category. Due to its vast territory and abundant labor force, China exports such products in import and export, creating foreign exchange income for the economy. However the current international situation is constantly changing, and with increasing international competition, the export structure that China relies on for foreign trade, which relies on price advantages and high energy consumption, is declining.

The current trade friction between China and the United States is still evolving. The imposition of tariffs by the United States will reduce the scale of China's agricultural product imports and exports to the United States, with the most significant impact on exports. At the same time, it will also hurt imported agricultural products. Raising tariffs will affect the scale of China's agricultural trade, change the market structure of agricultural trade, worsen the trade conditions between China and the United States, change agricultural prices, and affect agricultural output [6]. Under the influence of cost and competition effects, high import taxes can lead to exporters adjusting their export strategies and exporting products with lower costs and prices to control trade costs while maintaining foreign

market share. However, some products with higher prices and better quality, due to high trade costs, have decreased competitiveness in foreign markets, resulting in a decrease in export volume. As a result, there has been a decline in the quality of products exported by China to the United States [7]. The price and quality advantages of agricultural products have been weakened to a certain extent, and their competitiveness relative to local agricultural products has also decreased in the US market.

One important reason why the United States was able to decisively adopt trade protection measures such as imposing tariffs is that the exported Chinese goods lack irreplaceability, the production technology of rough processed products and raw materials is not high, and the technical barriers are low. In 2023, India surpassed China to become the world's most populous country, and China's advantages in labor and market are facing challenges. So in the international market, if China wants to take the initiative in international trade, it should focus on mastering core research and development technologies. Deepening the industry and optimizing the overall industrial structure.

When studying the factors that affect the optimization of industrial structure, scholars have conducted in-depth research and exploration on factors such as outward direct investment, technological progress, aging population, and railway transportation along urban lines, among which technological progress is one of the important influencing factors. From the perspectives of rationalization and advancement, the impact of technological progress on the optimization and upgrading of industrial structure [8]. The first is to help promote the rationalization of industrial structure. By upgrading and deepening technological factors, it has to some extent changed the supply and demand structure, allowing factor allocation to flow from a single fixed industry to multiple industries, promoting the rational allocation of resource elements within the industry, and achieving the rationalization of industrial structure [9]. The second is to promote the advancement of industrial structure. The emergence of new technology research and development will promote innovation in the existing mode of the industry, deepen the internal structure of the industry, extend the extension of the industry, launch new industrial models, create new driving forces for economic growth, and promote the advancement of industrial structure [10].

International trade is an important channel for the transmission of technological progress between countries, therefore, the important way for international trade to affect the optimization of industrial structure is to promote technological progress [11]. Against the backdrop of trade frictions and increased tariffs, international trade faces challenges and it is even more urgent to enhance international competitiveness through technological progress.

Scholars have quantitatively analyzed the interaction mechanism between technological progress, industrial structure, and economic growth, and concluded that there is a long-term positive and stable promoting relationship between technological progress, industrial structure adjustment, and economic development [12]. So the research and development of scientific technology and the optimization of industrial structure are complementary to each other. When new achievements are made in scientific research within the industry, the existing structure and models within the industry naturally need to be adjusted and upgraded accordingly with new technologies and products. Even the emergence of new achievements can promote organic integration between the two industries and extend the industrial chain. When the goal is to optimize the industrial structure, optimizing the direction of the industry will create a demand for new technologies, increase capital investment, and attract relevant professional researchers, all of which will assist in achieving new scientific research results.

4. Conclusion

Currently, China's international agricultural trade is facing challenges, with increased tariffs and an expanding trade deficit. China's labor-intensive export structure needs to be optimized and developed from labor-intensive to capital and technology-intensive. Against this backdrop of reality, the urgent need for emerging high-tech technologies in international trade has forced existing scientific research to develop more deeply and at a higher level. The country and enterprises will also

invest more resources, such as funds and talents, in related scientific research, support the research of scientific researchers, promote the smooth progress of technological research and development, and achieve technological breakthroughs as soon as possible. After achieving new technological breakthroughs, when applying technology to related industries, the allocation of factors in the original industry will be updated and optimized, so that the original single factor can be applied to multiple industries; It will also be beneficial for the in-depth development within a single industry. Both the development of international agricultural trade itself and the optimization of China's industrial structure require technological progress. Enhancing technological innovation not only enhances the international market competitiveness of agricultural product exports, but also helps optimize and upgrade China's industrial structure----The optimization and deepening of a single industry, as well as the linkage and cooperation between multiple industries, and the formation of industrial chain development. Looking at the world, under the global industrial distribution, there has been a trend of industrial division of labor and regionalization. The progress of Chinese technology has also played an important role in helping China's overall industrial division of labor in the international market.

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