

Novikova Olha

Senior Lecturer of the Department of Economics and Entrepreneurship

Sumy National Agrarian University

ORCID: 0000-0002-6999-9268

Li Xiaoran

Student of the Master’s course

Sumy National Agrarian University

COMPARATIVE ADVANTAGE ANALYSIS OF CHINA'S AGRICULTURAL PRODUCTS EXPORT

***Summary.** With the progress of science and technology, the global economy has gradually shown a trend of integration. Through the last 50 years China has maintained a relatively rapid economic development rate. It is actively participating in the global economic and trade exchange and occupies a pivotal position. In all countries, foreign trade is indispensable in their economies. China also has a long history of agricultural development. The national Chinese economy has moved from the capital intensive and heavy industry-oriented development strategy towards labor-intensive products and was guided by the comparative advantage development strategy. This transformation enabled China to better use of their comparative advantage, and greatly stimulated during the past 30 years of trade and economic growth which helped to achieve remarkable economic development.*

Main purpose of the article is to reconsider the position and perspectives of China in the global trade of agricultural products, specify industries with the strongest revealed comparative advantage for different agriproducts, outline major strategies for agricultural exportation growth.

However, from the perspective of the generation mechanism of the comparative advantage trap, it is still of great significance for China to export labor-intensive products utilizing their comparative advantage. Therefore, on the one hand, China should continue to strengthen the existing comparative advantage; on the other hand, there is a necessity to speed up the introduction of new comparative advantage, so as to relocate the country's potential quickly from comparative advantage to competitive advantage.

The results show that the overall export competitiveness of China's agricultural products is relatively weak and still needs to be further improved. China should adopt measures such as adjusting the structure of the agricultural industry, increasing the added value of agricultural products, enhancing brand effects, and actively developing emerging markets to further enhance the export competitiveness of China's agricultural products.

Key words: *China's export policy, agricultural exports, agro-exports, comparative advantages, revealed comparative advantages, index of revealed comparative advantages.*

Statement of the problem. With the progress of science and technology, the global economy has gradually shown a trend of integration. After entering the 21st century, the developing countries have maintained a relatively rapid economic development rate. Together with extensive supply of land and labor it allowed China to participate actively in the global economic and trade exchange and occupy a pivotal position and play a more important role in the global economy. China has a long history of agricultural development as well. Since ancient times, it has had a solid foundation for agriculture, which is a primary material production sector and provides source of food and clothing necessary for survival and economic safety. It is a necessary condition for the existence and development of other material production sectors such as industry and all non-material production sectors. It is the guarantee that supports the continuous

development and progress of the entire national economy. Agriculture is related to the vital interests of the people, social stability and the development of the national economy, and a major issue related to maintaining China's independent status in international competition. Since the reform and opening up, agricultural education, science, and technology have also flourished, which greatly promoted China's agricultural productivity. Therefore, analyzing the comparative advantages and cooperation potential of agricultural product trade will bring vital benefits to the future development of China's agricultural product trade.

Analysis of recent researches and publications. Economic development strategy of comparative advantage was first introduced by D. Ricardo in early XIX century and was effectively explaining benefits for foreign trade ever since. Concept of revealed comparative advantage was offered in 1965 by Bella Belassa and helps to calculate the relative advantage or disadvantage of a certain product or services as evidenced by trade flows [5; 9]. More recent publications of Leromain and Orefice have presented the theory in a more updated way [6]. In fact, the theory has been followed since China's reform and opening up the development strategy of comparative advantage. The national Chinese economy has moved from the capital intensive and heavy industry-oriented development strategy towards labor-intensive products and was guided by the comparative advantage development strategy. This transformation enabled China to better use of their comparative advantage, and greatly stimulated trade and economic growth during the past 30 years, which helped to achieve remarkable economic development.

Formulation purposes of article (problem). Main purpose of the article is to reconsider the position and perspectives of China in the global trade of agricultural products, specify industries with the strongest revealed comparative advantage for different agriproducts, outline major strategies for agricultural exportation growth.

The main material. China is a developing country with the world's largest population, enjoying one of the fastest economic growth in the past years. China's huge economic growth was facilitated mainly due to the new development strategy after the reforms, meeting the needs of the market and conforming to China's comparative advantages. Economists usually refer to this phenomenon of reforms promoting growth as the "pie expansion effect" of reforms. This means that when the cake is bigger, new resources will follow. When the market mechanism already exists, production will usually allocate new resources based on market demand and comparative advantage, which will be more in line with the principles of market economy.

China's foreign trade structure gradually reflects the influence of each separate factor. The foreign trade structure strongly depends on imports, where agricultural intensive products dropped substantially together with the fastest growth of capital-intensive products in terms of export structure, the proportion of the export of labor-intensive products and total rapid growth after 1986, although the capital-intensive products export quotas have been extended. Most of capital-intensive products are still made of imported raw materials and parts for processing, assembling, including imported components accounted for four fifth of the value, thus this kind of export still essentially belongs to the labor-intensive.

In addition to that, the trade of processed goods facilitates full use of China's relatively cheap labor resources, combining Chinese labor with foreign capital, technology and market. It implements and embodies the idea of comparative interests. In recent years, the proportion of processing trade in China's total foreign trade has been increasing. Therefore, according to the theory of comparative advantage, China has preliminarily established the export mode of labor-intensive products and the import mode of capital-intensive products.

Export dynamics of China starting from 2009 are presented in the chart below.

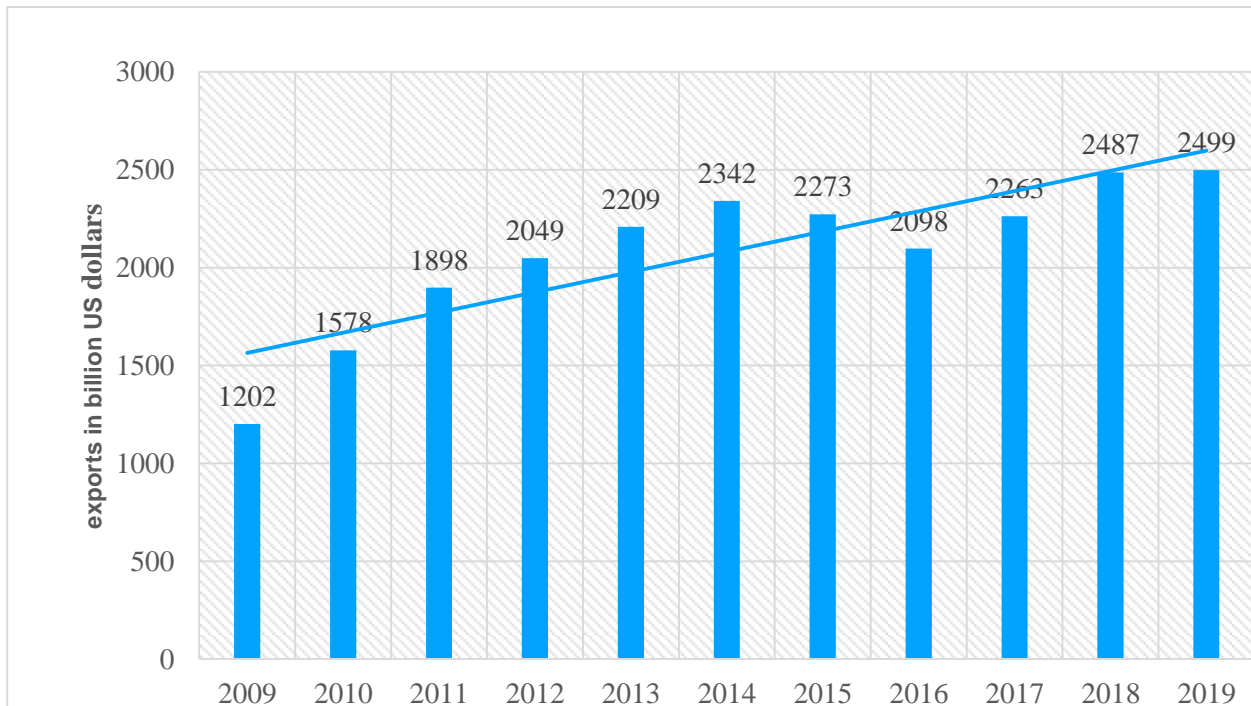


Chart 1. Value of export of goods from China 2009-2019

Source: summarized by author based on [WTO Statista 2020]

According to the information in Chart 1, it can be concluded that China's export value has increased from 1201.61 billion US dollars in 2009 to 2499.03 billion US dollars in 2019 which is almost two times more and can be characterized by maintaining continuous growth.

If we analyze China's agricultural exports in more details, we may see that since 1978, China's agriculture has undergone unprecedented reform and achieved great success. With less than 7% of the world's total arable land, it has basically met the needs of the Chinese people, who account for 22% of the world's population. Therefore, understanding the comparative advantages of Chinese agriculture is not only helpful to understand and evaluate the possible effects of different agricultural policies, and also helpful to grasp the development model that Chinese agriculture follows.

The agricultural development of a country is closely related to the access to agricultural resources. China's agricultural resource access is therefore characterized by the scarcity of arable land and abundant labor force. On the other hand, the production of food requires more land and less labor force. In this regard, effective countermeasures of China are as follows: first, choice of the technological path suitable for the agricultural resources' scarcity per capita, accompanied by the technological innovation and invention activities aimed at improving agricultural production efficiency; second, choice of an agricultural production structure suitable for the scarcity of resources per capita. According to China's access to resources and product characteristics, the selection of crops to grow is more focused on planting those crops with high labor intensity, which is higher labor input per unit of land are.

Starting from 2015, the export data of China's agricultural products have represented stable growth trend with a 2% decline in 2019.

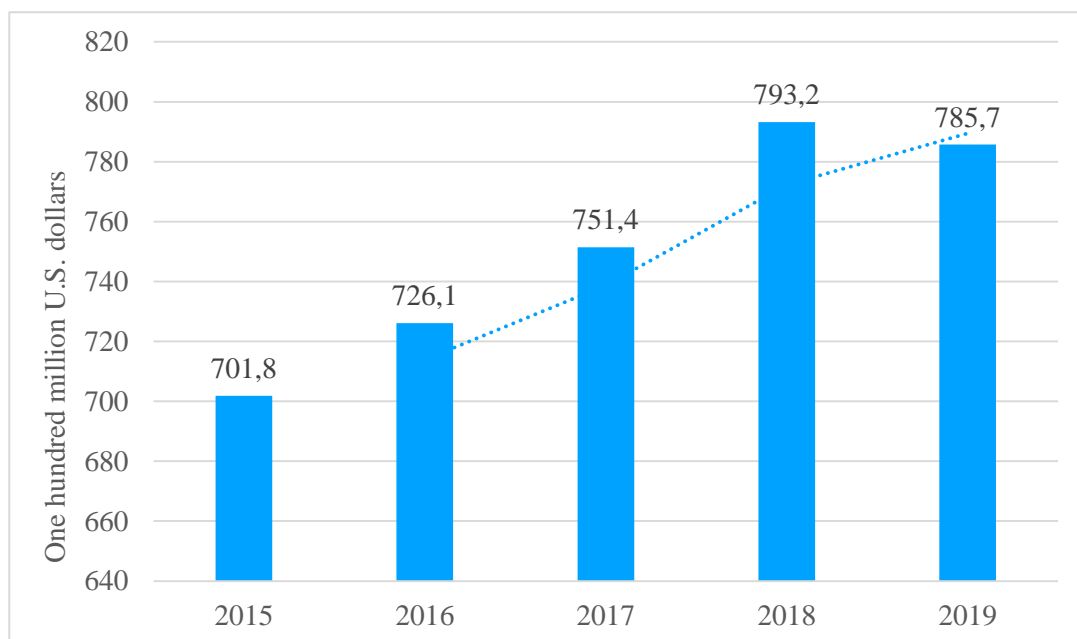


Chart 2. Statistics on China's agricultural exports from 2015 to 2019

Source: Summarized by author based on [China Chamber of Commerce for Foodstuffs]

According to the information in Chart 2, Chinese agricultural products have basically maintained a steady growth trend of about 2,5% a year with

subsequent slowdown in 2019 as a result of locally imposed restrictions and domestic market support.

To sum up, China's agricultural prospects are still optimistic. While there are perspectives to China's agricultural growth, the potential for technological progress still remains, with farmers, the government, consumers and international trading partners all responding to price signals. Number of population is still growing while the amount of natural resources is declining creating new challenges for the agricultural sector. This explains higher demand for imported resources. Nevertheless, the future of Chinese agriculture should be optimistic.

In the empirical analysis, foreign scholars including Bella Belassa and Dilek Seymen constructed a series of indicators to measure the comparative advantage of a country's exportation. Those can be divided into the following categories: relative productivity of products, products of the relative costs, revealed comparative advantage (Revealed Comparative Advantage, RCA). Quantitative analysis of the comparative advantage of Chinese agricultural products by means of demonstrative comparative advantage analysis is a method, which reflects product competitiveness by analyzing the results of comparative advantage. The advantage of this method is that the analysis is intuitive and easy to understand, and with the continuous improvement of product import and export statistics, the comparative advantage of products is much easier to observe than to investigate the cause of such success.

If the RCA of a sector in a country is equal to 1, that sector's share of the country's exports is the same as the OECD average; if RCA is greater than 1, the country is considered to have a comparative advantage in the sector; if RCA is less than 1, the country is considered to illustrate a comparative disadvantage in that sector.

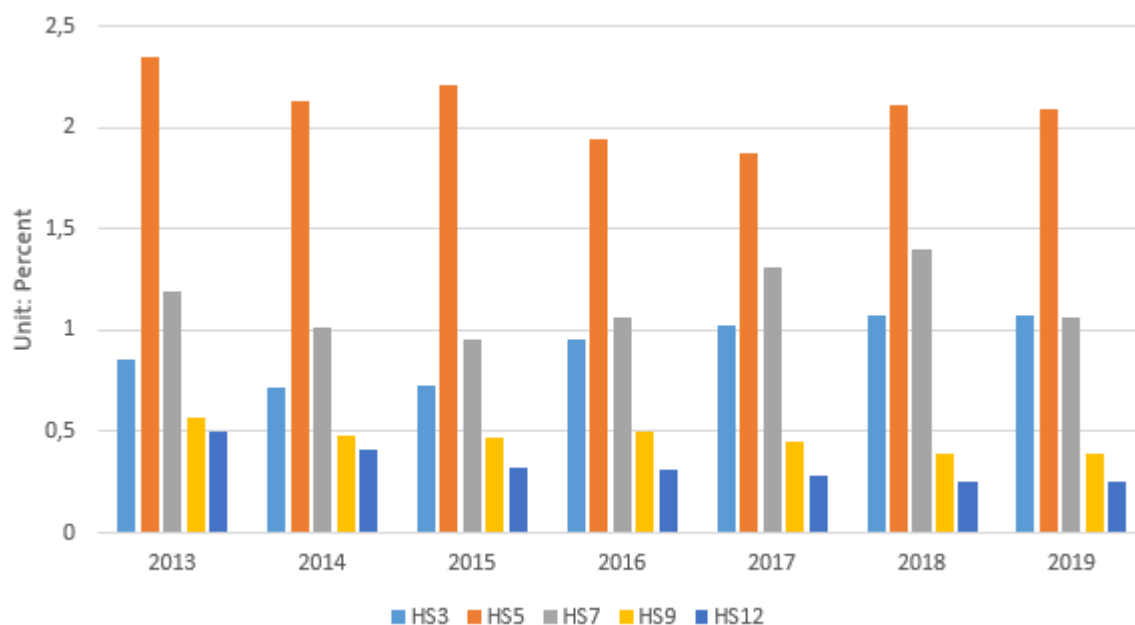


Chart 3. The RCA index of China's main export agricultural products from 2013 to 2019

Source: author's own research based on [UN Comtrade, trade data]

As presented in chart 3, major agricultural export product groups can be divided into 5 categories: (HS3) miscellaneous food. RCA of 8 agricultural products including oilseed kernel, fruit and textile fiber are on the decline. Among them, meat and its products, coffee, tea, cocoa and spices, feed, miscellaneous foods, textile fiber 5 agricultural products from have comparative advantage to lose comparative advantage. (HS5) The RCA of beverage, natural and synthetic rubber, animal oil and fixed vegetable oil did not change much, and had no comparative advantage over the years. (HS7) The RCA of sugar and honey fluctuated greatly, and the years with comparative disadvantages were slightly more than those with comparative advantages. (HS9) The RCA of grain and its products fluctuates greatly, and the comparative advantage and comparative disadvantage change each other roughly every 3 or 4 years. (HS12) The RCA of dairy products and eggs decreased year by year, and there was no comparative advantage over the years. Their RCA changes have an important impact on the overall RCA changes of Chinese agricultural products.

However, from the analysis of export share, we can see that: after ranking the shares of various agricultural products over the years, the order is generally stable; Agricultural products with a share of more than 10% generally include fruits and vegetables, grains and their products; Some years also include meat and other products or coffee, tea, cocoa and spices. Other important agricultural products include dairy products, eggs, beverages and textile fibers.

It can be seen that, except for HS3 agricultural products, the apparent comparative index of several other agricultural products are showing a downward trend, indicating that the competitiveness of China's agricultural products is gradually declining; the apparent comparative advantage index of HS3 agricultural products is slowly rising, and competitiveness is strengthening; HS5 The RCA index of these types of agricultural products fluctuates around 2.0, indicating that this type of product is extremely competitive and is in a favorable position in world trade; the RCA index of HS3 and HS7 is between 0.8-1.25, indicating a medium The comparative advantage, its competitiveness is at a medium level, while the RCA index of HS7 shows a downward trend, indicating that its competitiveness is gradually decreasing.

The comparative advantage of agricultural products is gradually possessed by a few products. Further analysis reveals the general characteristics of the change in the comparative advantage of China's agricultural products: grain products, including grain and its products, have basically lost their comparative advantage. Grain products are land-intensive products, and the per capita occupancy rate of land resources in China is relatively low. At present, the only agricultural products where China has a comparative advantage is rice, ungraded corn and wheat-like mixed powders and substances. Meat and its products have always had a comparative advantage together with live animals. At present, China's pork and other animal products are mostly free-range farming, labor resources are the comparative advantage; the processed products of related products also have certain comparative advantages due to the influence of

domestic consumption preference. Among them, solid fixed vegetable oil and oilseed kernel and fruit changed from comparative advantage to comparative disadvantage. Horticultural agricultural products still have comparative advantages. Horticultural agricultural products mainly include all kinds of fruits, decorative trees and vegetables, mostly labor-intensive agricultural products. China has a labour-rich comparative advantage in such products: all dried and fresh fruit and nuts have lost their comparative advantage. Textile fiber has also lost its comparative advantage. Cotton and silk were originally China's agricultural products with essential comparative advantages, but due to the surge in domestic demand and the continuous increase in production costs since the 1990s, they lost their comparative advantages by around 1995.

The impact of WTO entry on China's agricultural trade is twofold. On the one hand, China's export of agricultural products will get a lot of opportunities for development. On the other hand, China's entry into WTO will further increase its import of agricultural products, especially wheat, corn and other grains. This also includes higher price for wheat price: 28% higher than the international market price, corn price is 71.1% higher and rice price is 17.8% higher. US export subsidies for cereals have further reduced the competitiveness of Chinese grain products, and the lifting of China's ban on wheat imports from the US northwest has led to a sharp increase in imports from the US. The import quota has increased considerably compared with the actual import volume in the past. By 2005, quotas for wheat, corn and rice will reach 9.3 million tons, 7.2 million tons and 5.3 million tons respectively, compared with the actual average imports of wheat, corn and rice of 6.818 million tons, 853,000 tons and 534,000 tons in 1992-1998. After WTO accession, part of the annual import quota had to be allocated to the private sector. Under such conditions, as long as the international market price was lower than the domestic market price, the government could no longer control the import quantity below the quota quantity by the traditional way through the monopoly position of the state-

owned foreign trade department. After China joined WTO in 2001, the average agricultural tariff rate was reduced from 22% to 17.5% (except grain, cotton and oil exemption, China's general agricultural tariff rate is 50%-70%, and the high rate was more than 100%), which made a big reduction. As a result, imports of previously more protected products would grow more. After more than 20 years of continuous development, China's foreign trade volume had reached \$472.3 billion by 2000, of which us \$249.2 billion was exported, an increase of 69% and 67% over 1995, respectively, making China the ninth largest trading country in the world. It tends to import land-intensive commodities (soybeans, cotton, barley, rubber, and oils made from soybeans and palm kernels), exporting nowadays commodities with higher relative usage of labour (fish, fruits, vegetables, and processed agricultural goods. According to Customs statistics, China's foreign trade volume in 2019 reached \$4.73 trillion. China is one of the main exporters of agri-food products. In 2019 China was the fifth largest exporter of agri-food commodities after US, the Netherlands, Germany and France. Its share in the global exports of agri-food commodities was equal to 4.1%.

Insights from this study and perspectives for further research in this direction. With the large scale of China's foreign trade, export expansion becomes more difficult. Because of the large foreign trade base, maintaining the current rate of trade would mean adding a trade volume of one middle-size country every year, which is obviously not easy to achieve. With the expansion of trade scale, trade tensions with the partners appear constantly. China's export products have been repeatedly under the anti-dumping investigation, technical barriers to trade is a typical example. As a result of carrying out the strategy of comparative advantage, each place pays more attention to the development of labor-intensive industry. In terms of utilization of foreign capital, a large number of foreign capitals are invested in labor-intensive industries, and a large number of foreign-funded enterprises export labor-intensive products, which occupies

China's quota and reduces the export of domestic enterprises. In addition, foreign - funded enterprises also compete with domestic enterprises for the domestic market. China wants to use foreign capital to promote the original intention of industrial structure. It strengthens the low-level industrial structure of China, which is not conducive to the upgrading and replacement of industry, and may fall into the trap of comparative advantage. There is a certain degree of comparative advantage trap in both primary products and manufactured products in China. However, from the perspective of the generation mechanism of the comparative advantage trap, it is still of great significance for China to export labor-intensive products by taking advantage of the comparative advantage. Therefore, on the one hand, China should continue to strengthen the existing comparative advantage; on the other hand, there is a necessity to speed up the introduction of new comparative advantage, so as to relocate the country's potential quickly from comparative advantage to competitive advantage.

With the implementation of the free trade zone strategy, China's agricultural exports will obtain good opportunities for development, but the pressure of opening the domestic agricultural product market will continue to increase. Under this circumstance, it has become particularly important to maximize the strengths and avoid weaknesses, enhance the export competitiveness of China's agricultural products, and maximize the benefits from agricultural trade. Proper analysis and calculations were carried out in this article, which analyzes China's agricultural product export status from the perspective of agricultural product trade balance, agricultural product exportation regions, and export entities, and on this basis, uses the Revealed Comparative Advantage Index (RCA) as an indicator to competitiveness of Chinese agricultural products exports. The results show that the overall export competitiveness of China's agricultural products is relatively weak and needs to be further improved. China should adopt measures such as adjusting the structure of the agricultural industry, increasing the added value of agricultural

products, enhancing brand effects, and actively developing emerging markets to further enhance the export competitiveness of China's agricultural products.

References

1. Bian J.Y. An empirical analysis of the impact of Japanese green trade barriers on China's agricultural exports. 2014.
2. Daniel C.Esty, Damien Geradin. Environmental Protection and International Competitiveness: A Conceptual Framework. 1998.
3. Hansen, J., Marchant, M. A., Tuan, F., & Somwaru, A. US agricultural exports to China increased rapidly making China the number one market // *Choices*. 2017. 32(2).
4. Hejazi M., & Marchant M. A. China's evolving agricultural support policies // *Choices*. 2017. 32(2). PP. 1-7.
5. Laursen K. Revealed comparative advantage and the alternatives as measures of international specialization // *Eurasian Business Review*, 2015. 5(1), 99-115.
6. Leromain E., Orefice G. New revealed comparative advantage index: dataset and empirical distribution // *International Economics*. 2014. (139). PP. 48-70.
7. Lin Y.J. The impact of green trade barriers on China's agricultural exports and countermeasures, 2012.
8. Michael J. Ferrantino. International Trade, Environmental Quality and Public Policy // *World Economy*. 2002. 1.
9. Utkulu and Seymen, Revealed Comparative Advantage and Competitiveness: Evidence for Turkey vis-à-vis the EU/15. 2004.
10. Vollrath, T. L. A theoretical evaluation of alternative trade intensity measures of revealed comparative advantage // *Weltwirtschaftliches Archiv*. 1991. 127(2). PP. 265-280.

11. Wang Zhong-hui. Trade Associations of China's Agricultural Products and Their Roles in Dealing with TBT [A] // Proceedings of 2009 International Conference on Public Administration. 2009. №5. V2.
12. Wang J.Y. Green Trade Barriers and China's Agricultural Products Export Trade. 2010 .