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Analysis framework of international competitiveness of the agriculture by combining comparative advantage and competitive advantage

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ABSTRACT

Under the international market with imperfect competitiveness, the comparative advantage of Chinese agricultural products is being weakened. Therefore, it is necessary to focus on improving the international competitiveness of the agriculture. So far, there are little theories combining comparative advantage and competitive advantage to deepen exploration for international competitiveness of the agriculture. Based on it, this paper establishes the analysis framework of international competitiveness of the agriculture to integrate the comparative advantage theory and the competitive advantage theory for studies on the origin of the international competitiveness of the agriculture. It demonstrates that the direct origin of the international competitiveness of the agriculture is the comparative advantage of agricultural products, the decisive factor of the international competitiveness of the agriculture is innovation of agricultural technology and adjustment of agricultural structure, and the influence factors of the international competitiveness of the agriculture include government support for the agriculture, agricultural labour's quality, natural resources, opportunities, etc. At last, this paper proposes feasibility measures for improving the international competitiveness of Chinese agriculture, such as strengthen advantageous products and enhance government support to the agriculture.

KEYWORDS

Comparative advantage; Competitive advantage; International competitiveness of the agriculture; Intra-industry trade.



INTRODUCTION

As a pillar of the traditional international trade theory, the comparative advantage theory has undergone the development from the classical trade model to the neoclassical trade model, and formed a relatively perfect system. The representative of the competitive advantage theory is Michael Porter (1990)^[1], who invented the famous “diamond model” and argued that the theoretical base of international competitiveness is competitive advantage. Relatively speaking, the comparative advantage theory is more commonly used for analyzing agricultural products, such as Kang Xiaoguang (1993)^[2], Chen Wu (1997)^[3], Cheng Guoqiang (1999)^[4], Liu Li & Meng Hui (2001)^[5], Li Baoyu et al (2013)^[6], Wang Jing (2014)^[7]. They all empirically analyzed the current comparative advantage of Chinese agricultural products and put forward correspondent measures.

Fortunately, some scholars have realized that under the international market of imperfect competition, it is more difficult for agricultural products to gain benefit completely from comparative advantages. Therefore, it is necessary to focus on improving the international competitiveness of Chinese agricultural products trading. For example, Sun Dongsheng (2001)^[8] and Zhuang Lijuan (2004)^[9] pointed out that Chinese agricultural products participate in international competition simply relying on resource endowment, and gradually fall into the “comparative advantage trap”; Pan Wenqing (2000)^[10] argued that the strategic selection of Chinese agricultural products trading shall be combined comparative advantage and competitive advantage; Song Yuhua and Liu Chunxiang (2004)^[11] applied the intra-industry trade index to analyze the competitive advantage of key trade agricultural products of China and concluded that Chinese agricultural products are still involved in international labour division with comparative advantage and their competitiveness and quality have to be further improved.

Despite that, the comparative advantage and the competitive advantage are still separated under studies on the international competitiveness of the agriculture. Based on it, this paper combines the comparative advantage and the competitive advantage, establishes the analysis framework of the international competitiveness of the agriculture, and proposes the feasibility measures to improve the international competitiveness of the Chinese agriculture.

COMBINED COMPARATIVE ADVANTAGE AND COMPETITIVE ADVANTAGE: ANALYSIS FRAMEWORK OF THE INTERNATIONAL COMPETITIVENESS OF THE AGRICULTURE

It is generally recognized that the comparative advantage theories based on perfect competition and unchanged returns to scale can explain inter-industry labour division, while the competitive advantage theories based on imperfect competition and economies of scale can explain the intra-industry labour division. Domestic theorists debate on the comparative advantage and the competitive advantage. Lin Yifu et al pointed out that the misunderstanding of the relationships between the comparative advantage and the competitive advantage is potentially detrimental to the selection of the national (or regional) economic development path. Even in the analysis of the international competitiveness of the agriculture, some scholars isolate the comparative advantage and the competitive advantage, or even replace the comparative advantage with the competitive advantage. Therefore, it is necessary to study the theoretical analysis framework of the international competitiveness of the agriculture to explore the practical path of realizing the international competitiveness of the agriculture.

The competitive advantage of nation's theory proposed by Michael Porter argues that the power of competitiveness is dependent on how to proactively cultivate and create the competitive advantage. Thus, it is urgent to study the international competitiveness of the agriculture under the background of economic globalization by combining theory and practice. In fact, four elements of the “diamond model” of the competitive advantage of nation's theory have organically integrated the comparative advantage of different nations/different industries and the competitive advantage of different nations/same industry. It is consistent with the viewpoint of comparative advantage generated by natural endowment, and also reveals the possibility and practicability of comparative advantage generated by non-natural endowment, which further expands the comparative advantage theory. Due to development of science/technology, specialized and scaled operation of the agriculture, and especially interference of government behaviours, it causes the international agricultural products market to deviate from perfect competition in practice. Therefore, the competitive advantage theory is still tied with the theoretical framework of comparative advantage in nature. It may be biased to interpret the international competitiveness only with the comparative advantage or only with the competitive advantage, and cause incorrect theoretical guidance for practice.

Therefore, this paper suggests to combine the comparative advantage and the competitive advantage and to establish an extended analysis framework of the international competitiveness of the agriculture (see fig. 1) by considering the particularity of the agriculture, such as highlighting the influence of government and other factors. This framework can be simply expressed that: under imperfect competition and economies of scale, the price competition advantage is decisive for the comparative advantage of Chinese agricultural products, and the non-price competition advantage is decisive for the international competitiveness of the agriculture. As driven by government and other factors, the organic combination of the competitive advantage and the comparative advantage is decisive for the international competitiveness of the agriculture.

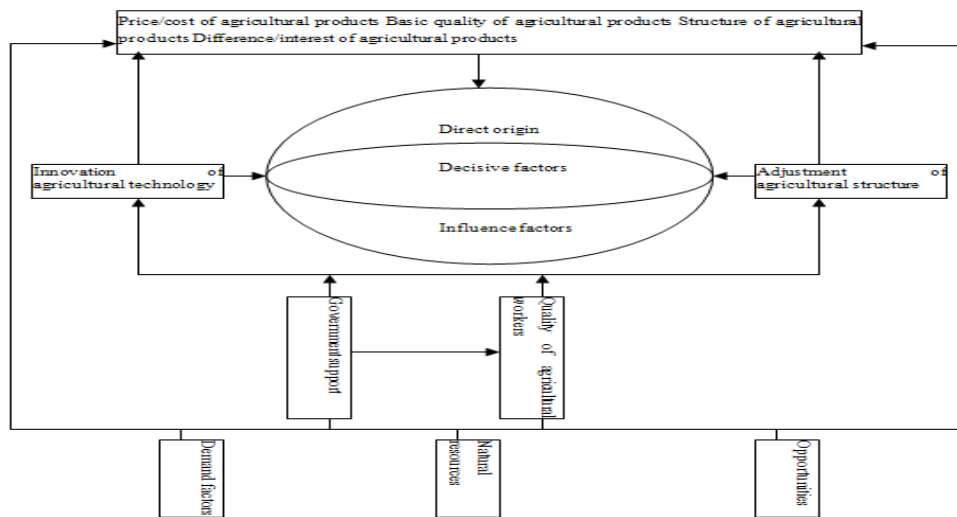


Figure 1 : Analysis framework of the international competitiveness of the agriculture

FACTOR ANALYSIS OF THE INTERNATIONAL COMPETITIVENESS ORIGIN OF THE AGRICULTURE

(I) Direct origin of the international competitiveness of the agriculture

As shown in the fig. 1, the direct origin of the international competitiveness of the agriculture is the comparative advantage of agricultural products, reflected by:

1. Price and cost of agricultural products: like that of industrial products, the first determinant for the comparative advantage of agricultural products, which means that like products at the same market are more competitive at lower prices. However, as determinant for product prices, their cost is decisive for whether products have price competition advantages and profitability. Only when technological progress and technological innovation can reduce the product cost and thereby lower the sales price in the market does the product competitiveness is actually reflected.

2. Basic quality of agricultural products: the basic qualities of agricultural products are reflected by quality, freshness, nutrition and appearance of agricultural products.

3. Structure of agricultural products: the structure of agricultural products refers to both the variety structure and the quality structure of agricultural products. The excellent agricultural products structure meets the demands of the international market and therefore can directly improve the comparative advantage of agricultural products.

4. Difference and interest of agricultural products: although agricultural products are traditionally regarded as undifferentiated products, agricultural products and related products tend to be differentiated as people have more individualized consumption. Furthermore, the comparative advantage and the international competitiveness of agricultural products can be actually reflected only by meeting users with different demand levels, producing products with correspondent function levels and having better cost performance. For example, out-of-season vegetables, fruits of various colours and shapes, and food with novel taste or package are normally more expensive and hot-selling than ordinary products, since these products are able to satisfy consumers' demands on diversification and interest.

(II) Decisive factors of the international competitiveness of the agriculture

1. Technological innovation of the agriculture: the technological innovation of the agriculture is a whole process of conceiving and inventing new agricultural products, new techniques and new agricultural equipment as well as conducting researches on, developing or experimenting new agricultural technology; it is a process of importing, digesting, absorbing, imitating, modifying and spreading new agricultural technology as well as re-combining original agricultural skills; it is also a process of transforming the new agricultural concepts, new technology and original production factors (inputs) to long-term growth of new agricultural and new agricultural products in the market by means of advanced material equipment and effectively and reasonably allocated tools for the purpose of improving the social economy and ecological effect of agricultural production.

2. Adjustment of agricultural structure: the current adjustment of agricultural structure of China involves a complicated and systematic program with broad scope, covering links before, during and after agricultural production, and including agricultural input structure, agricultural organization structure, agricultural industry structure and agricultural market structure.

(III) Influence factors of the international competitiveness of the agriculture

1. Government support for the agriculture: government support for the agriculture means that the government, as the subject, shall adopt a series of economic, legal and administrative agricultural support measures so as to promote the development of the agriculture, improve the level of agricultural production, consolidate the fundamental status of the

agriculture, and realize the sustainable, stable and healthy development of the agriculture. It is not discriminatory or exclusive of external competition, but conducive to sustainable development of the agriculture based on improving agricultural production conditions.

2. Factor of agricultural workers' quality: the agricultural workers' quality is an integrated concept, mainly covering physique and knowledge/skills of agricultural workers. High-quality operation operation-oriented farmers are representative of advanced productivity in villages and also the most vigorous market subject in the market economy.

3. Natural resources: the reasonable development and utilization of natural resources improve the international competitiveness of agricultural products and the agriculture. By adjusting the structure of agricultural production, it is able to arrange agricultural products to be produced in the most suitable natural ecological areas, fully utilize the natural resource endowment in different regions, maximize strengths and minimize weakness in order to improve the output and quality of agricultural products, reduce the production cost, and form the specialized production and regional layout of agricultural products. With scientific transformation of inferior resources and idle resources, it improves the utilization rate and output efficiency, enriches the resource abundance, and provides more space for agricultural production. The allocation of resources (such as matched land and water resources) enables natural potentials of resources to be fully explored, and makes huge effects on enhancing production efficiency and quality of agricultural products as well as reducing the cost of agricultural products.

4. Demand factor: it mainly refers to domestic demands. Based on Linder's Theory of Demand Preference Similarity, the condition of domestic demands is an important influence factor for whether an industry or its products are internationally competitive. When domestic demands are leading, domestic companies and products providing services are correspondingly leading other companies in the world. When domestic demands are picky and there are a number of picky buyers, it will force local production companies to meet consumers' high standard demands in respect of quality and service of agricultural products. Agricultural production companies growing under such demand environment necessarily go through hardships to gain better competitiveness. The domestic market is saturated early, which causes prices of agricultural products to be reduced, forces local companies to make innovation and upgrading, leads to actively explore the international market and continuously improve the competitiveness.

5. Opportunity: for the agriculture, an opportunity indicates excellent climate (better weather suitable for growth of agricultural products than previous years; dependent on the particularity of agricultural production, since agricultural production and processing results are mostly subject to good climate), or invention activities, significant technological invention and changes of world situation.

DETAILED MEASURES OF IMPROVING OF IMPROVING THE INTERNATIONAL COMPETITIVENESS OF THE AGRICULTURE

Among factors influencing the international competitiveness of the agriculture, agricultural historical conditions, natural resources and opportunities belong to natural endowment which we can utilize but can not invent; however, government support, agricultural structural adjustment and agricultural technological innovation can be changed with our efforts. Therefore, we shall make full use of these factors to strengthen the international competitiveness of the agriculture.

(I) Strengthen competitive products to effectively improve their international competitiveness

The quality of agricultural products is the most important among the direct origins of the international competitiveness of the agriculture. Thus, China shall further strengthen competitive products to effectively improve their international competitiveness. Specifically speaking, firstly, it shall promote the regional layout of competitive agricultural products and form a group of competitive agricultural products clusters. Secondly, it shall enhance monitoring of production process and production environment of agricultural products, especially epidemic prevention and quarantine of livestock as well as control of fertilizer, pesticide, feed stuff and other harmful residues of agricultural inputs, and improve the quality safety standard system and the inspection/quarantine system of Chinese agricultural products; it shall upgrade grading, packaging, storage, fresh-keeping and processing, and increase the added value of products. Thirdly, it shall enhance the capability of domestic agricultural companies competing with transnational agricultural products processing and marketing companies. It shall encourage development of different ownership types of agricultural products processing and marketing companies for scale expansion and improve the driving ability. Moreover, it shall encourage combination of agricultural products production, processing, circulation companies and foreign trade companies to constitute large-scale groups. It shall formulate related policies to support development of leading companies in terms of investment, taxes and credit.

(II) Establish the national agricultural support and protection system to consolidate governments' support for agriculture

Firstly, it shall enhance support for "Green Box Policies" and increase investment in the agriculture by governments. WTO includes 12 domestic support measures of exemption or reduction of agricultural agreements. By comparison and analysis, we have found 6 gaps in China and limited support for other aspects. In the future, it shall further increase spending in general services for farmers, add investments in the construction of agricultural infrastructure, research education, technological promotion and prevention of diseases and insect pests as well as in inspection and quarantine of agricultural products free of charge and establishment of the agricultural products information service system. By studies on detailed measures for directly subsidies for farmers, it shall provide farmers with subsidies used for adjusting the structure and protecting ecological environment. In addition, it shall advance the reform of rural taxes and fees to organically combine

administrative fees changed to taxes and legal administration of taxes as well as to reduce farmers' burden. Secondly, it shall timely adjust and strengthen support for "Yellow Box Policies". At present, our subsidies are less than 2% of the gross output of agricultural products. As estimated according to current output and subsidies of agricultural products, the potential subsidies amount to nearly RMB 150 billion and original subsidies may be changed from key circulation links to production links and farmers by adjusting the structure. Thirdly, it shall set up and perfect the farmer income support system. Based on reforming original agricultural development banks and other financial institutions with single price support function, it shall establish the agricultural insurance system soon, give certain policy support and subsidies, lower natural risks and market risks of agricultural production, and improve the perfect rural social security system.

(III) Speed up technological innovation of the agriculture

To improve the technological content of the agriculture and strengthen the capability of technological development are important for improving the international competitiveness of the agriculture. Therefore, it shall focus on requirements of international competitiveness and national competitiveness of the agriculture, and thoroughly reform the current agricultural technology system and the operation system. Moreover, based on improving the industrial economic benefit, independent innovation capability and international competitiveness of the agriculture, it shall highlight the construction of the national agricultural technological innovation system concerning industrial development. It shall greatly develop the high-tech agricultural industry, speed up realization of the technological industrialization, achieve integrated education, technology, promotion, production and processing, and improve the conversion rate of technological results; it shall emphasize training for farmers and raise workers' level of technology.

(IV) Speed up the market demand oriented structural adjustment of the agriculture

By resources comparison, the resource inferiority of China is reflected by small per capita land ownership and land-intensive grains without competitive advantage in the international market. Our resource superiority is represented by a large quantity of labour. Compared with USA, Canada, Australia and other countries (regions), China is absolutely advantageous in respect of labour intensive agricultural products which mainly include oil, sugar, livestock, aquatic products, fruits and flowers. They are not only characterized by high amount of labour and value per unit and also high added value, but also reflected by strong ability of absorption of labour power and weak restriction by cultivated land resources. These agricultural products are highly competitive in the international market. Therefore, China is able to further develop production of labour intensive agricultural products, improve types and quality of these agricultural products, and enhance their specificity and suitability. Among Chinese agricultural products, livestock, fruits, vegetables and aquatic products belong to labour intensive and highly competitive products. For structural adjustment, we shall guide farmers to expand production of these products, enrich types of these products, and improve their quality and grade. Only supply of high-quality, special and novel products can strengthen products' competitiveness and obtain high profits at high prices.

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