Development Status, Challenges and Strategic Reflection of China's Grain Industry

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Abstract. Under the background of global economic and social integration, the expansion and contraction of world grain supply and demand, the evolution of the world grain trade structure, and fluctuations in international grain prices have a significant impact on the development of China's grain industry. Although the foundation for the development of China's grain industry is solid, there are still disadvantages such as grain security concerns, weak grain industry market forces, and insufficient competitiveness. In order to build a high level grain security system, China should base on the situation of domestic factor resources and grain production and marketing, find out the strategic positioning of the grain industry development, and propose relevant suggestions for the circulation market subject cultivation, scientific and technological innovation, and industrial integration.

1. Introduction
People are the foundation of the state, and the grain is of primary importance to the people. The grain issue is not only a major economic issue, but also a political issue related to the national economy, people's livelihood, and social stability. Grain security is especially important. At present, China is at the key of rapid development and scientific leapfrogging. During this period, the structural reform of the grain supply side advocated by the "Thirteenth Five-Year Plan" and the new pattern of cooperation in the grain industry established by the "Belt and Road" strategy provide new strategic guidance for the future development of China's grain industry. Under the complicated economic situation at home and abroad, the grain industry in China should be rationally positioned, take advantage of the situation, and accelerate development. From an open perspective, the position of grain industry development in national grain security should be reviewed, and China should strive to modernize the level of grain circulation capacity, continue to achieve sound economic development in the grain industry, and build a high-level grain security system.

2. Development Environment of China's Grain Industry
2.1. Development trend of grain industry around the world
Since the 1970s, the grain supply and demand around the world has been deeply affected by cyclical changes in the world economy and natural factors such as the climate and environment factors, and it has experienced several rounds of expansion and contraction. In recent years, the world economy has continued to slump. Affected by European and American political and economic conditions, the "anti-globalization" trend of thought has risen, trade protectionism has escalated, and the risk of economic uncertainty has greatly increased. The fluctuation trend of world grain supply and demand seems to be even more elusive under the trend of "anti-globalization". What is more, with the change of supply and demand, the fluctuation range of world grain price is becoming more and more intense. From 1998 to 2001, the actual prices of corn and wheat increased by 5.84% and 19.93%, respectively, but the price of rice decreased by 22.34%; however, after entering 2002, the price of rice began to rise and continued until 2009, increasing by nearly 2.4 times compared to 2001. During the period, the price of corn and wheat has been fluctuating,
showing an upward trend compared to 2001. The price of corn continued to rise from 2010 to 2013, and the price of rice and wheat fell briefly before recovering. According to FAO data statistics, the three major cereal price indexes in 2015 fell by 15.4% compared with 2014, the cereal price continued to decline in 2016, and the international grain price gradually fell to a historical low place.

As an important way to maintain a country's grain supply and demand balance and ensure grain security, the development trend of world grain trade is generally stable when the international grain price trend is unknown. During the period of rapid development of the world economy, grain production participates in the international division of labor, and agricultural policies have also been adjusted accordingly, creating favorable conditions for the rapid development of grain trade. After entering the 21st century, the world's grain trade volume has been rising steadily. Although the drought in 2012 caused serious reductions in grain production, as a result, the world grain trade volume fell, the rest of the year basically showed an upward trend; in 2013, the world's grain exports reached 402.88 Mt, increasing 25.78% compared with 2001. At present, the world's grain trading countries have significant imbalances in import and export, and world grain exports are concentrated in very few countries. For example, wheat, corn, and soybeans are concentrated in a few developed countries such as Europe and the United States. The United States is the largest exporter of corn, accounting for 40% of its annual exports, therefore, grain importing countries, mainly developing countries, are at a disadvantage in the international grain market and have no right to speak in terms of price, bringing higher grain security risks to countries with higher grain dependence. Affected by the demand for biofuel, feed and industrial grains, the corn trade around the world has developed rapidly. However, with the development of agricultural science and technology with bioscience and technology as the core, the grain trade pattern is increasingly biased toward developed regions in Europe and the United States that have natural, technical and capital factors, so that their grain export advantages can be further highlighted, and regional differences in world grain trade will be even more significant.

2.2. Development status of domestic grain industry

Since 2000, with the further improvement of China's urbanization and people's living standards, the grain consumption structure of residents is facing transformation and upgrading, and the types of grain are no longer single. Residents have increasing consumption demand for higher nutritional value of grains such as meat, eggs and milk, as well as recreational grain such as alcohol, which has led to a continuous increase in demand for feed grain and industrial grain. From August 2007 to 2016, consumption of grain, feed and industrial grain increased by 8.9%, 0.5% and 24.3% respectively. At present, the ratio of the consumption structure of grain, feed and industrial grain in China is about 5.6:2.5:1.6. Population growth, increasing urbanization levels and changes in consumption structure have driven the growth of grain demand, and the era of cheap grain has long since passed.

When the total demand for grain has risen sharply, adequate and reasonable grain supply has become the first problem that must be faced in the development of the grain industry. In December 2015, the Central Rural Working Conference proposed new ideas for structural reforms on the supply side of agriculture, that is to focus on strengthening supply-side structural reform in agriculture, accelerate modern agricultural construction, actively adjust the agricultural structure, develop various forms of moderate-scale operations, and improve the quality and efficiency of the agricultural supply system. The advancement of the supply-side structural reform in the grain industry has created a favorable policy environment for optimizing the supply structure of grain products, promoting the modernization of grain circulation capacity and strengthening the national grain security capacity. By improving the grain collection and storage system and mechanism, accelerating the "destocking" of grain, promoting the deep integration of information technology and the development of the grain industry, and encouraging grain business enterprises to innovate marketing methods and other ways to vigorously develop the grain industry economy, the positive
transformation of the grain industry to a modern development model can be promoted, a higher level of dynamic balance between grain supply and demand can be achieved, and China's grain industry will embrace new development opportunities.

China is a major country in grain production and processing in the world, and its rice processing capacity and output are ranked first in the world. From 2015 to 2016, China's total rice output reached 145.7 million tons and total flour output was more than 100 million tons, hitting a new high. However, compared with developed countries, China still has a certain gap of grain processing technology and industry, and problems such as the short grain processing industry chain and extensive production and management. In order to make China's grain processing technology and industry develop towards a powerful country, the grain industry in the future will gradually form a modern grain processing industry system that is safe and nutritious, efficient, green ecological, reasonable layout and optimized structure.

The grain storage and logistics industry is a basic supporting industry for the development of the grain industry, which is of great significance to improve the efficiency of grain circulation, promote the development of the grain industry, and maintain national grain security. By the end of 2015, the total grain logistics in China had increased to 365 million tons, of which the annual grain outflow in the northeast passage is about 50 million tons, the annual outflow in the middle and lower passage of the Yangtze River is about 24 million tons, and the annual inflow of the coastal areas in East China and South China is about 49 million tons. At the same time, the promotion and application of grain logistics technologies such as container-united and belt conveyors can effectively improve the technological level of the highway, railway and waterway transport, which strongly supports the modern development of grain circulation. The future development of China's grain storage logistics will further promote the construction of grain storage facilities and the maintenance and renovation of warehouses, further highlighting the grain logistics situation of "shipment between south and north grain" and the expansion of the coverage of grain logistics nodes. Therefore, the application of efficient grain storage logistics equipment technology can be further promoted, and a perfect, convenient, efficient and safe grain storage logistics system can be built.

3. Opportunities and Challenges for the Development of China's Grain Industry

3.1. Opportunities for the development of China's grain industry

3.1.1 National grain security strategy leads a new chapter

In 2013, the central government explicitly proposed the implementation of the national grain security strategy, that is to give priority to China, base on the domestic market, ensure production capacity, import moderately, and support science and technology. In addition, it also emphasized that it is important to ensure national grain security as the first task of China's agricultural modernization, so as to ensure "basic self-sufficiency in cereals and absolute grain security" as the new national grain security goal. The emergence of a new grain security strategy means that the original concept of focusing on grain self-sufficiency is changing, and the concepts of diversified grain demand and high requirements for grain products are gradually being adopted. Therefore, in the face of relatively abundant grain supply conditions, enterprises can organize grain production more flexibly according to diversified market demands, and no longer pursue the production of single products with weak competitiveness, which has created great opportunities for the development of grain enterprises, and at the same time improves the consumption quality of residents.

3.1.2 New guidelines for the development trend of the grain industry

The deepening and promotion of grain supply-side structural reform requires transformation of the grain circulation field, structural adjustment, destocking, cost reduction, strong industries, and shortcomings; the transformation of residents' consumption structure requires the development of the grain industry to focus on the rational layout of various grain production, so as to meet the increasingly sophisticated, diversified, and nutritious grain consumption needs of customers, both
of which can effectively promote the quality and efficiency of the grain industry. At the same time, modern biotechnology, information technology and equipment technology are widely used in the grain industry. The continuous emergence of new business models and new circulation entities have effectively broadened the development area of the existing grain industry, and all have brought rare opportunities for the upgrading of the grain industry.

3.2. Challenges for the development of China's grain industry

3.2.1 Grain security concerns

At present, domestic grain supply is relatively abundant, and the domestic grain self-sufficiency rate is high, which is at a safe level of grain self-sufficiency; however, as the cost of grain production continues to rise, the price in the grain market continues to slump, and the relative benefits of farmers' grain production decline. It is more difficult for farmers to continue to increase their income, which will directly affect the enthusiasm of farmers to grow grain. The tendency of ensuring grain rather than increasing production is becoming increasingly serious, and the threat of grain quantity security still exists. Certainly, the increase in urbanization and income levels will also bring about rigid growth of grain demand, and the state of tight grain balance will still exist for a long time. In addition, the over-exploitation and pollution of land and water resources in China will lead to frequent occurrence of grain diseases, making it difficult to ensure grain quality and safety in the long term.

3.2.2 The grain collection and storage system is hard to change

The state started to implement a series of grain production protection policies in 2004 such as the market acquisition, which aims to protect the interests of farmers and the enthusiasm for planting grains. Although it has effectively prevented "hurting farmers by the low grain price" to a certain extent, this solid grain collection and storage system has distorted the original market economic system, which is unable to achieve effective allocation of resources and completely disconnects the supply and demand sides of grain. As a result, the phenomenon of price inversion in the international and domestic markets emerges, which undoubtedly raises the processing costs of the grain industry in the middle and lower reaches and makes the development of grain industry hindered. Although the new mechanism of "separation of price and compensation, and market-based acquisition" implemented by soybeans and corn has achieved initial success in the past two years, reforms of the wheat and rice collection and storage system are still being explored, and it is imperative to accelerate market-oriented reform.

3.2.3 The market power of the grain industry is weak

Although the total domestic grain balance is more than enough, the rapidly growing demand for industrial grains such as soybeans and corn still needs to be imported from abroad; however, the dependence on "foreign" grains will weaken the control of the price of raw grains to a certain extent and make it in a passive position. Especially with the continuous improvement of residents' income and living standards, residents have increasing demand for high-quality grain and oil products, while the low-end "bulk commodities" of domestic grain products are more in domestic market, while the high-quality products, such as the special powder used in high-grade bread and cakes and some intensive processed products still need to be imported, which is difficult to meet the needs of the upgraded consumption demand of the market. Therefore, grain products that have no advantage in the cost of raw grains are also weak in the domestic and international markets. In addition, the continuous trend of "double high superposition" of grain production and storage leads to the anti-dumping investigation on China's grain trade led by the United States.

3.2.4 Insufficient competitiveness in the field of grain distribution

At present, China is in the new normal state of the economy, and it will maintain a low-medium-speed growth for a long period of time, which will adversely affect the development of grain enterprises. In particular, the state of "small and scattered" state-owned grain enterprises still exists, and the dilemma brought by the dual functions of state-owned grain enterprises makes
the grain enterprises lack of vitality. State-owned grain enterprises need to protect the interests of farmers while pursuing economic benefits, so they cannot concentrate the advantages of key resources to extend the industrial chain, innovate based on the operating mechanism, or effectively strengthen the endogenous driving force for the development of enterprises. The entry barrier of grain circulation industry is low, and the influx of large numbers of private enterprises will cause low levels of excessive competition. There will also be large differences in the development level between enterprises, and limited capital, technology, and high-quality labor cannot be concentrated input, which will affect the effective improvement of grain processing technology, the improvement of storage and logistics infrastructure, and the integration and extension of the industrial chain. As a result, the overall operating efficiency of the grain distribution industry is low and the competitiveness of the distribution field is insufficient.

4. Strategic Thoughts and Policy Choices for the Development of China's Grain Industry

4.1. Innovation-driven strategy

The development of the grain industry should get rid of the resource advantages of the low-cost labor and other factors that it originally relied on, and turn the competitive advantage of the development of the grain industry into the innovation advantage, providing a strong impetus for the sustainable development of the grain industry. It is necessary to accelerate the establishment of institutions and mechanisms conducive to giving full play to the main role of grain enterprises in innovation, improve the mechanism of steady increase in innovation capital input, create a good atmosphere for innovation, and continuously improve the ability of grain enterprises in integrated innovation. At the same time, it is necessary to establish an effective competition incentive mechanism and assessment system to mobilize the enthusiasm of all parties to participate in innovation construction, establish a platform for the exchange and display of innovation results, accelerate the transformation of innovation results into real productivity, and thereby improve the economic efficiency of the grain industry.

4.2. Prospering grain strategy with science and technology

For the guarantee of the basic self-sufficiency of grains and the absolute security of grain, the greatest potential and the fundamental way out lie in science and technology. Science and technology is the first driving force for the development of modern agriculture. Science and technology innovation is the endogenous driving force for the development of the grain industry and is an effective way to ensure grain security. This is the fundamental way to realize the scientific development of grain circulation, and it must be placed at the core place. It is also necessary to quickly open channels for the integration of grain science and technology with the grain industry economy, and accelerate the promotion of technological breakthroughs, such as the improvement of grain warehouse facilities and storage technologies, so as to shift the focus from grain quantity security to grain quantity security, quality security and ecological security.

4.3. Cultivate the main players in the circulation market and improve policy support

A single grain market entity and functional restrictions on state-owned grain enterprises will hinder the improvement of the operation efficiency of the grain industry and hinder the guarantee of grain security. Therefore, it is important to vigorously cultivate and develop multiple grain market entities to promote the economic development of the grain industry. For example, the development of mixed ownership should be encouraged and a new market body formed by different capital forms should be cultivated, so as to become an important part of the grain market body; at the same time, it is necessary to lead grain and oil companies with market power, competitiveness and leading driving ability to drive the common development of the interest community in the grain industry chain. The healthy development of the grain industry requires government policy guidance and supervision. Therefore, it is necessary to strengthen the collaboration between the grain sector and...
the relevant departments of finance, land, financial institutions and taxation, and provide policy support in various ways in fiscal funds and tax incentives. In addition, the policies in the core production areas should be tilted to increase investment in grain storage and logistics facilities, agricultural machinery purchase subsidies, and social drying capacity building projects, so as to ensure grain security from the origin.

4.4. Strengthen talent construction and accelerate technological innovation

The construction of the talent team in the grain field should not be underestimated. It is necessary to focus on leaders at all levels in the grain industry, implement cadre training programs at all levels, and strive to improve the quality of party and government personnel. For instance, a group of people who can lead the industry's development direction, develop markets, and have management talents should be cultivated to promote the construction of "grain think-tank". The cooperation between enterprises and scientific research institutions and universities should be strengthened, and high-level scientific research talents in the grain industry should be encouraged to participate in international and domestic scientific research plans and academic exchanges, so as to comprehensively improve the skills level of employees, and cultivate a team of professional and technical talents that meet the needs of the development of the grain industry. It is also important to rely on talent construction, increase research on key core technologies such as grain reduction, processing and transformation, vigorously promote the application of Internet information, biotechnology, and new materials in the field of grain, establish a large database of the grain industry, and discover the grain trading spot and future markets, so as to change the traditional grain marketing model.

References