

Analysis of Factors That Influence Agricultural Trade between China and Mongolia



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ABSTRACT: Mongolia-China trade turnover has increased 250 times in 28 years. The two countries formally established diplomatic relations on October 16, 1949, which has now expanded to the level of a comprehensive strategic partnership. This paper seeks to study and analyse the factors that influence agricultural product trade between China and Mongolia and give recommendations which can create new possibilities for the expansion of bilateral agricultural trade that were established in 2014. We use Comparative analysis and apply factor regression analysis methods of econometrics and Revealed Comparative Advantage Index (RCA index) of the factors affecting the trade of agricultural products between China and Mongolia were analyzed. Our results show that the development of China-Mongolia agricultural trade is faster than the overall development of China's agricultural product trade, the average annual growth rate from 2001 to 2018 of China-Mongolia agricultural trade is 17.1%, which is 4.3% higher than the average annual growth rate of China's total agricultural trade, average annual growth rate of agricultural 26 import from Mongolia is 5.7% higher than the overall increase of China's agricultural imports, average annual increase of agricultural exports to Mongolia is 2.2% higher than the overall increase of China's agricultural exports, agricultural product trade is highly complementary, RCA index shows that China's livestock products industry used have a 28 very strong comparative advantage in live animals, China's live animals competitive comparative advantage has continued to decrease and the index result has fallen below 1 and Chinese pay more attention to the quality and safety of agricultural products. We make policy recommendations for promoting the development of agricultural trade between China and Mongolia and provide reference for the study of agricultural trade between China and Mongolia.

KEYWORDS: Agricultural trade; bilateral cooperation; agricultural products; China; Mongolia.

1. INTRODUCTION

China and Mongolia are neighboring countries that formally established diplomatic relations on October 16, 1949. Till now the relations have grown and become a strategic partnership that is key to political, economic, and cultural exchanges between the two countries. Suffice to mention that the Mongolia is endowed with vast natural resources and pastures. In comparison with China, Mongolia has sparse population and more abundant agricultural land resources. The total land area is 1.564 million square kilometers of which 72.8% is suitable for agriculture and animal husbandry, 8.1% forests, 1% is covered by water bodies and 18.1% for other uses. Traditionally, Mongolia is well known for livestock production which account for a larger portion of exports whereas other agricultural products are mostly imported. Livestock products accounts for more than 80% of all exports from the country. The past 17 years has seen a rapid growth in imports of agricultural products, while exports have been relatively slow. They have always been in a trade deficit position, and the trade deficit has been expanding. In recent years, import growth has slowed down, exports have achieved rapid growth, and the trade deficit has decreased.

The unique geographical location and resource endowments between China and Mongolia has broadened prospects of agricultural cooperation. This has been enhanced by the "Belt and Road" initiative which has brought about bilateral agricultural trade and development. This has promoted strategic partnership while greatly boosting Mongolia's economic growth. The major exports products from Mongolia are livestock products, nuts, and oil seeds. Between the year 2000 and 2016, the sum of these three types of products accounted for 92% of the total agricultural exports. Agricultural imports mainly include grains, beverages, sugar, grain products, livestock products, fruits, vegetables and vegetable oils. These products accounted for almost 70% of all imports in the country between 2000 and 2016.

In recent years, the Mongolian and Chinese governments have expanded the development of China-Mongolia economic and trade cooperation. China is Mongolia's largest trading partner, with revenue of US\$6.7 billion in 2017, accounting for 63.8% of total

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revenue. Mongolia exports minerals and agricultural raw materials to China, while China imports more goods such as trucks, electricity, mobile phones and electrical appliances. The fifteenth meeting of the Mongolian government and the government of the People's Republic of China on economic, trade, and technological cooperation was successfully held in Beijing on September 17, 2018. At the regular government meeting, views were exchanged on expanding Mongolia-China economic and trade cooperation. Both sides expressed satisfaction with the successful development of Mongolia-China strategic partnership and cooperation in various fields, and expressed satisfaction with multiple high-level exchange visits, which further strengthened bilateral relations and cooperation.

In order to achieve the goal of bilateral trade reaching 10 billion U.S. dollars by 2020, Mongolia has proposed to upgrade the trade structure, develop value-added production, increase port capacity, and expand agricultural trade. The two sides actively support the expansion of their cooperation in the agricultural field and agree to cooperate on the export of meat and meat products from Mongolia to China. In short, Mongolia's exports show that the economy is highly dependent on commodity prices on the world market and China's economy. Most of the main raw materials exported by Mongolia such as wool, cashmere and animal products have not yet been processed in the international market. Mongolia will continue to expand the diversity of export products to meet international products demands by introducing advanced technology to develop Mongolia's value-addition and industrial growth.

This paper seeks to study and analyse the factors that influence agricultural product trade between China and Mongolia and give recommendations which can create new possibilities for the expansion of bilateral agricultural trade.

2. LITERATURE REVIEW

2.1 China's agricultural product trade

Jiang Xiaoyu researched on China's Agricultural FDI in Developing Countries and shows the progress and prospects of China's agricultural foreign investment. He reviews the existing research progress in terms of the characteristics, models, opportunities, challenges and countermeasures of agricultural foreign investment[1]. Studies have shown that China's agricultural outbound investment has been expanding fields, diversified models, and coexisting opportunities and challenges. At the theoretical level, it is necessary to deeply explore the difference and uniqueness of foreign investment in the agricultural field, and then enrich and expand the theory of foreign direct investment. At the practical level, it is still necessary to select appropriate research perspectives and standardized research methods, strengthen research on hot areas and controversial issues, and support optimization of agricultural foreign investment decisions.

The belt and road initiative has improved trade and political relation between China and Central Eastern European Countries (CEECs)[2] which has boosted the trade expansion between China and CEECs bringing into play cooperation among member countries. This has seen enormous growth between the European countries. Several other scholars have explored this subject matter[3][4][5]. Other researchers conducted studies on BRICS countries with the main purpose of analyzing the current situation of China's agricultural product export trade with the BRICS countries, estimate the competitiveness of China's agricultural product export trade with the BRICS countries, and judge the potential of China's agricultural product export trade with the BRICS countries. Then, based on the research results, it provides policy recommendations for enhancing China's competitiveness in agricultural exports to the BRICS countries and expanding the potential of China's agricultural exports to the BRICS countries. Based on comparative advantage theory, competitive advantage theory and factor endowment theory, choose the trade competitiveness index (TC) and the revealed comparative advantage index (RCA) to measure the competitiveness of China's agricultural exports to the BRICS countries, and analyze its level and changing trends. The potential of China's export trade with the BRICS countries is gradually increasing. There are greater business opportunities in China's agricultural export trade, but the difficulty of export is also increasing. Finally, according to the research results, it puts forward countermeasures and suggestions to improve the competitiveness and trade potential of China's agricultural exports to the BRICS countries[6][7][8][9].

Qu Yi (2017), analyzed "Agricultural Trade Cost Research[10]. This article analyzes the current situation of agricultural products and food security in the world and China, and especially points out the problems and risks in trade and circulation. Based on literature research and reality observation, this article builds an analysis framework for agricultural trade costs. The possible innovations of this article are: linking the new trade theory with the trade cost model, explaining the formation of product-level trade cost differences from the perspective of consumer preferences and productivity differences, and using sub-product-level data in the empirical analysis Provides empirical evidence; uses a structured gravitational model embedded with specific products instead of elasticity, and uses instrumental variables and grids[10]. Agriculture is an important area of cooperation among countries in the China-ASEAN Free Trade Area[11], and there is even less research on trade facilitation in this area. With the development of the China-ASEAN Free Trade Area, most of the products in the Free Trade Area have achieved "zero tariff", and there are more mature conditions for studying the economic benefits of trade facilitation[12].

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Gao Xue, Li Gucheng analyzed the "Research on the Factor Content of China's Agricultural Trade[13]. This article uses the research method of trade factor content to calculate the factor content of China's main agricultural products trade from 1992 to 2013, integrates land, labor, and capital into a unified analysis framework, and investigates relative factor endowments based on Leamer's improvement. The calculation results show that the degree of net exports of labor factors in my country tends to decline; the trade content of land factors shows a net import trend; the net imports of capital factors continue to expand.

2.2 Mongolian agricultural product trade

Liu Guobin studied the Potential of Agricultural Cooperation of Jilin Province into the China-Russia-Mongolia Economic Corridor[14]. With the deepening of the agricultural opening pattern of Jilin Province, the agricultural cooperation and exchanges between Jilin Province and Russia and Mongolia are becoming more frequent. This has brought about the construction of the China-Russia-Mongolia Economic Corridor which has boosted the transformation and upgrade of the agricultural industry in Jilin Province and accelerated the "going out" of the agricultural industry in Jilin Province. Furthermore, economic revitalization of the Northeast has been said to play an important role. The agricultural industry cooperation with Russia and Mongolia will accelerate the construction of the opening up of Jilin Province to the north, reshaping the division of labor system of the agricultural industry value chain in Northeast Asia, and boosting the agricultural economy of Jilin Province to a higher level.

A benchmark study by JICA (2017) about sustainable agricultural development and agricultural value-added networks was an analysis of previous survey results aimed to provide the Japan International Cooperation Agency (JICA) with recommendations on measures to support and promote the sustainable development of the agricultural sector and the development of the value chain in the future. Mongolia's agricultural industry agglomeration[15] and regional distribution differences uses macroeconomic data of Mongolian agricultural regional development and differences, spatial layout and existing problems. It involves agricultural output value, product output, livestock growth rate, herd structure and the agricultural product structure and distribution of Mongolia's five agricultural zones[16]. In the case of China's "One Belt, One Road" strategy, based on the results of principal components and cluster analysis, specific policies are put forward on issues such as cross-country cooperation areas, regions, methods, and upgrades in agricultural and livestock products, forage, and infrastructure between China and Mongolia[17]. The marketing environment of agricultural products in Mongolia improves the adaptability to the environment[18]. International trade and international economic cooperation[13] deeply points out its existing problems. Finally, the author puts forward reasonable and practical countermeasures for the economic and trade development of Mongolia's border areas in the future.

There are several studies on the trade of agricultural products between China and Mongolia. Most of them are concentrated in bilateral relations and product trade. The Sino-Mongolian Agricultural Cooperative [19] is a smooth development of economic and trade relations, the friendly political exchanges between China and Mongolia which promotes international and regional cooperation. China-Mongolia agricultural cooperation is mainly in trade and technology with China investing in Mongolian agriculture[19]. The China-Mongolia bilateral trade has facilitated import and export[20]. The two countries' trade relations are in mining trade, agricultural trade, border trade, and issues concerning Sino-Mongolian joint ventures[21]. This agricultural trade relations are complementary between the two countries[20] offering several advantages in policy, science and technology and agricultural product quality. China's key agricultural imports are livestock products while exports are relatively diverse[13]. The overall bilateral agricultural trade is mutual and beneficial for both countries.

3. RESEARCH METHODS

For analytical assessment of China-Mongolia agricultural trade, we used Comparative analysis. Through comparative analysis, the agricultural bilateral import and export products are compared, the main products were selected, and suggestions for improving the Sino-Mongolian agricultural bilateral trade were put forward.

Literary research. By consulting the literature, we can understand the current situation, characteristics and possible problems of Sino-Mongolian agricultural trade.

Information research methods. Information methods are based on the principles of information theory, system theory, and cybernetics, through the collection, transmission, processing and sorting of information, to obtain knowledge and apply it to practice, in order to achieve new goals in the Sino-Mongolian agricultural product trade.

Empirical Research. We used many factor regression analysis methods of econometrics and RCA index. Through the regression analysis of many factors in econometrics, the factors affecting the trade of agricultural products between China and Mongolia were analyzed.

$$Y = f(X_1, X_2, \dots, X_n)$$

Among them:

Y-Sino-Mongolian agricultural products trade

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F-function

X- Factors affecting trade

n- Number of Variables

What agricultural products do Mongolia and China have in the world market, and how they can improve their competitiveness. For this, we use the international RCA index.

$$RCA_{is} = (EX_{is}/EX_{ts}) / (EX_{ir}/EX_{tr})$$

Among them:

EX_{is} represents the export value of country S commodity i;

EX_{ts} represents the total export value of the country S;

EX_{ir} represents the total export value of commodity i in region R;

EX_{tr} represents the total export value in the region;

If RCA_{is} is greater than 1, it means that a certain product I of country S has a comparative advantage in region R, and the larger the regional comparative advantage index, the more significant the comparative advantage of product i. If RCA_{is} is less than 1, it indicates that the i product of country S has a comparative disadvantage in region R, and the smaller the regional comparative advantage index, the less significant the comparative advantage and the more significant the comparative disadvantage.

4. RESULTS AND DISCUSSION

4.1 Analysis of the production status of the main varieties of China's agricultural products trade

Today, China's grain production accounts for 18% of the world's total, meat accounts for 29%, and vegetables account for 50%. This success has made China the one of the world's largest agricultural economy and producer of pork, wheat, rice, tea, cotton and fish.

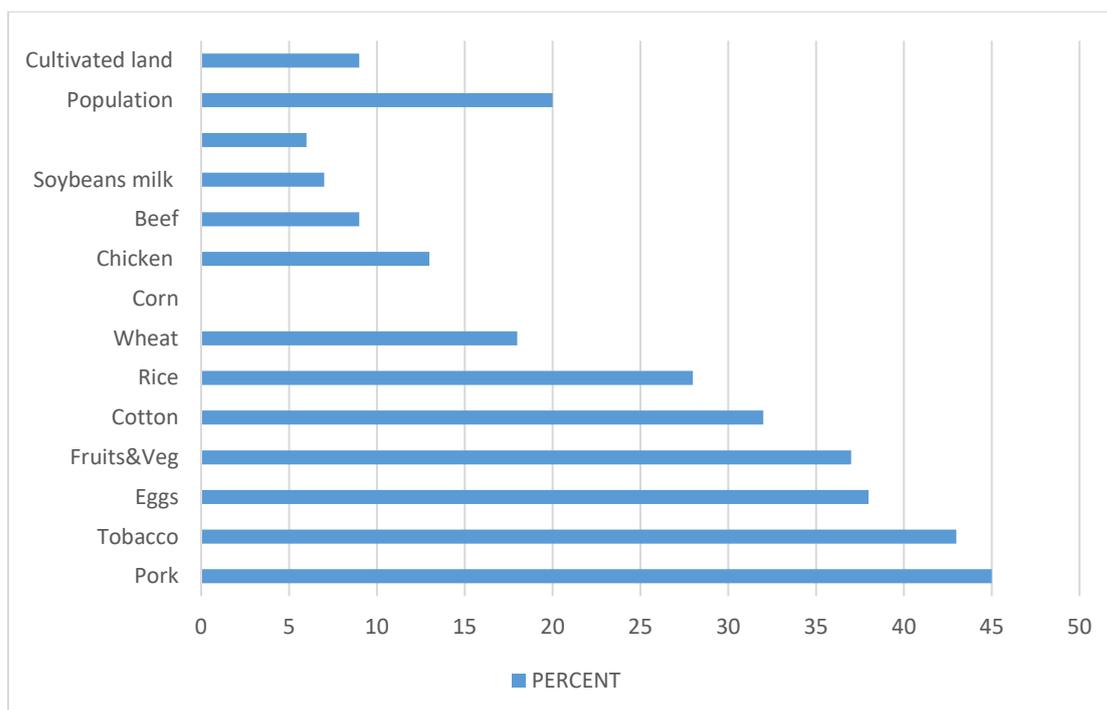


Figure 1. China's share of world food production across various commodities.

Since joining the WTO in 2001, China has played a greater role in world agricultural trade. China has greatly increased its trade dependence on agriculture and is currently the world's fifth largest exporter of agricultural products and the fourth largest importer. The substantial increase in China's fruit and vegetable production is a major factor in the growth of its agricultural exports[22][23][24].

With a relatively fixed base of agricultural land and shrinking water sources, China's agricultural population today has exceeded 1.3 billion, compared with 500 million in 1950.

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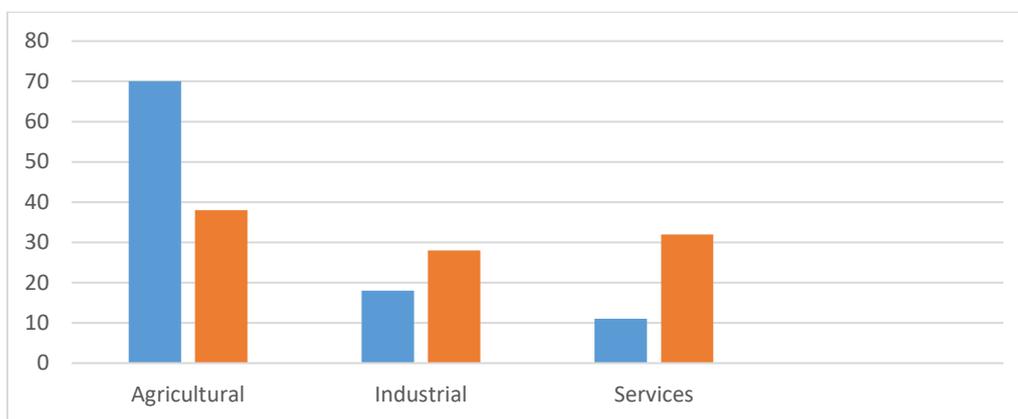


Figure 2-2. Change in China's Employment Structure /Percent

"Production and Market of Major Agricultural Products in China" is divided into 8 topics, which respectively introduce the production status, price trends, and international trade of 8 types of agricultural products, including food crops, livestock and poultry products, cotton, oilseeds, sugar, vegetables, fruits, and aquatic products. Among them are agricultural products exported to Mongolia:

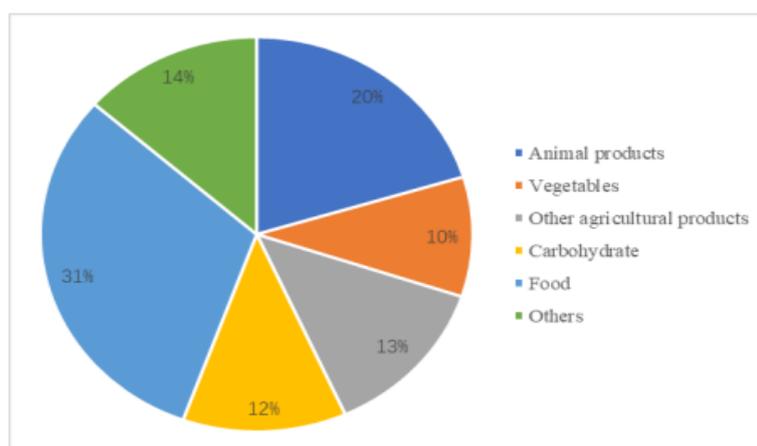


Figure 3. China's export structure of agricultural products to Mongolia

Analysis of the production status of these key products: In the past few decades, China's animal products industry has made great progress in general[22]. According to FAO records, since 1961, the production of animal husbandry products in China has shown a continuous growth trend. Especially after joining the WTO, the growth of domestic demand and low international feed prices have promoted the rapid development of China's animal husbandry. China has become the world's largest producer of pork, as well as a major producer of beef, poultry and mutton[25][26].

Table 1. The production change of China's Livestock products in recent decades.

Livestock Products	Inventory (10,000 heads)	Growth	Slaughter (10,000 heads)	Growth	Production (10,000 tons)	Growth	Production Percentage
Pig	12187.9		5143.5		4450.40		444.42%
Sheep	11917.7		2725.3		462.32		842.12%
Cattle	1904.1		4043.5		611.60		2659.13%
Egg and its products					2815.40		1002.28%
Milk and dairy					3018.40		2318.28%
Donkey	-696.1		-17.1				
Mule	-71.3		-30.5				
Camel	9.1		4.5				
Horse	-140.2		10				

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From the perspective of reproductive capacity, the production capacity of bulk livestock products such as pigs, cattle, and sheep has been greatly improved. However, in addition to a small increase in camels, the stocks of donkeys, mules and horses have all declined[25]. In particular, the stock of donkeys fell by 6.96 million heads. The differences in output and types of provinces are constantly changing. In Shandong, Henan, Sichuan, Hunan and Hebei provinces, meat production accounts for a large share. Inner Mongolia is the main producing area of mutton. The main meat product of these five provinces is pork, and the other main products are beef and mutton.

In terms of milk, cashmere and cashmere production, Inner Mongolia ranks first in China[27]. Its milk production accounts for 18.0% of the country's total milk production, and its sheep wool production accounts for 33.1% of the country's sheep wool production. Cashmere output accounts for 42.8% of the national cashmere output

The main meat consumed in China is pork. From 2013 to 2018, per capita pork consumption increased by 3 kg, ranking first in the growth of consumption of various meat products. However, per capita pork consumption in 2018 was only 15.2% higher than in 2013, which is consistent with the overall increase in per capita meat consumption. As the consumption of livestock products by Chinese consumers tends to be balanced, the consumption of livestock products such as beef, mutton and milk has begun to increase significantly. In 2018, per capita beef consumption increased by 0.5 kg, an increase of 33.3% over 2013. Per capita mutton consumption increased by 0.4 kg in 2018, an increase of 44.4% over 2013. In 2018, per capita poultry increased by 1.8 kg, an increase of 25% over 2013. According to the analysis of product consumption, the diversification potential of China's livestock product consumption is still great.

Table 2. The livestock products consumption change of China from 2013-2018

Livestock products	Increased volume of consumption per capita	Increased volume growth of consumption per capita
Meat in total	3.9	15.23%
Pork	3	15.15%
Beef	0.5	33.33%
Mutton	0.4	44.44%
Poultry	1.8	25.00%
Egg	1.5	18.29%
Dairy	0.5	4.27%

Unit: kg

Southern China has a strong consumer demand for poultry products, while the consumption of egg products is mainly in northern China. The consumption of dairy products in large developed cities is very high. For example, the consumption of dairy products in Beijing, Shanghai and Tianjin, as well as Xinjiang and Inner Mongolia is affected by regional traditions and preferences.

Although China's agricultural output is the largest in the world, it can only cultivate 10% of its total land area. China's arable land accounts for 10% of the world's total arable land, providing support for more than 20% of the world's population. Of the 1.4 million square kilometers of arable land, only about 1.2% (116,580 square kilometers) is used for permanent crops and 525,800 square kilometers have been irrigated.

Throughout history, China's limited farming space has been a problem, leading to chronic food shortages and famines. Although the productivity of farmland has increased over time, efforts to expand to the west and north have had little effect because these lands are generally colder and drier than traditional farmland in the east. Since the 1950s, the growing demand for land in industry and cities has also put pressure on farm space.

Approximately 75% of China's arable land used for food crops. Rice is the most important crop in China, accounting for about 25% of the arable land. Most of the rice is grown south of the Huai River, the Pearl River Delta, and provinces such as Yunnan, Guizhou, and Sichuan. Wheat is the second most common cereal crop and grows in most parts of China, especially in the North China Plain, the Weihe and F river basins of the Loess Plateau, and the provinces of Jiangsu, Hubei and Sichuan. Corn and millet grow in the northeast and northeast of China, and oats are very important in Inner Mongolia and Tibet.

Oilseeds are very important in Chinese agriculture. They provide edible oil and industrial oil, and they account for a large share of agricultural exports. In northern and northeastern China, Chinese soybeans are grown for tofu and cooking oil. China is also a major producer of peanuts, which are grown in Shandong and Hebei provinces. Other oil crops are sesame, sunflower seeds, rape seed and tung tree seeds. Citrus is the main economic crop in southern China, and its production is scattered in the Yangtze River

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Basin and its southern part. Mandarin is the most popular citrus in China, and the production of oranges is about twice that of oranges.

The demand for food means that agriculture is still the largest employer, with 315 million laborers working on 200 million farms. Although the average farm size is small, 0.65 hectares, the total yield is still the highest in any country in the world, and its annual value to the Chinese economy is about 775 billion euros.

In this total output, Chinese farmers can claim to be the world's largest producer of multiple crops, including: Rice-207 million tons, Wheat-126 million tons, Potatoes-95 million tons, Apple-45 million tons, Pear-19 million tons and Cotton-7 million tons. The total output of vegetables is nearly 500 million tons, accounting for a staggering 50% of the world's total output. Moreover, in the fruit field, China's agricultural output exceeds 220 million tons, accounting for 30% of global output. Including 45 million tons of apples, this figure is about eight times that of the United States, the world's second largest apple producer.

In the case of wheat, when the 2017 harvest is fully assessed, forecasts indicate that production will increase by about 3 million tons to nearly 130 million tons. The continued increase in wheat production reflects changes in consumer demand, as China has moved from a traditional rice-based diet to a more "Western" diet of bread, noodles and pasta. It is also driven by government policy, which is seeking to solve the chronic undernourishment problem of hundreds of millions of Chinese people.

4.2 Analysis of the production status of the main varieties of agricultural products trade in Mongolia

The agricultural sector is one of the most important sectors in Mongolia's economic development. The activities of the agricultural sector rely more on nature and weather than other factors, and the products produced mainly provide the population with food and raw materials for processing industries. In the first quarter of 2020, the structure of the GDP sector is 47.5% in services, 22.7% in mining and quarrying, 14.8% in industry and construction, and 4.1% in agriculture.

Mongolia's agricultural sector is one of the main industries after mining, accounting for 4.1% of GDP (as of the first quarter of 2020). In terms of output, as of the first quarter of 2020, manufacturing industries such as meat, dairy products, beverages, and textiles such as wool and cashmere accounted for 52% of total sales revenue. The agricultural sector in Mongolia can be divided into two main categories animal husbandry and agriculture.

4.2.1 Animal husbandry; According to the Mongolian Constitution, "livestock is a national treasure and is under the protection of the state", and a national livestock census is conducted every year. Animal husbandry is the main source of livelihood in Mongolia, so registration and statistics have a long history of development. In the 13th century, Mongolia recorded a census of people and animals. As of the end of 2019, the number of livestock reached 71 million, an increase of 4.509 million over the previous year, an increase of 6.8%. Divided by type, there are 4.2 million horses, 4.8 million cattle, 472,400 camels, 32.3 million sheep, and 29.3 million goats. According to the 2019 Livestock Census, there are 285,500 herders. In 2019, there were 233,300 households with livestock, of which 171,600 were herder families. As of 2019, herder households that mainly live on livestock have 89.4% or 63.4 million livestock, and each herder family has 370 animals on average[28].

Meat and dairy products continue to be processed locally, mainly by hand. However, only a small portion of raw hides, furs, wool and cashmere are processed in domestic factories, and most are exported to foreign markets in the form of value-added, unprocessed, washed and combed forms. Therefore, the goal is to establish primary processing of livestock raw materials, semi-finished products and finished products in necessary local centers. According to preliminary results in 2019, at current prices, the gross production value of animal husbandry reached 5.2 trillion dinars, and at constant 2010 prices, it reached 3.0 trillion dinars, which is an increase in current prices compared to last year. 18.1%, an increase of 8.7% at a constant price.

In 2019, the animal husbandry produced 545,000 tons of meat, 107.40 million liters of milk, 33,700 tons of cashmere, 10,900 tons of cashmere, 22,000 tons of camel hair, 17.6 million pieces of animal hides and skins. The slaughtered weight increased by 29,800 tons. Lamb meat increased by 15,700 tons, horse meat increased by 13,600 tons, goat meat increased by 60,000 tons, and camel meat increased by 28,000 tons. Beef production decreased by 11,900 tons.

4.2.2 The role of animal husbandry in the economy

Animal husbandry is one of the most important sectors in our economy. As of 2019, 10.9% of Mongolia's gross domestic product (GDP) and 8.2% of export revenue are agricultural exports, and the sector employs 25.3% of the total labor force.

In terms of sector structure, until 1999, the primary industry, including animal husbandry, accounted for about 30% to 40% of GDP in the agricultural sector, but since 2000, due to natural disasters in the agricultural sector, mining Growth in industries and services. The share of the household sector in GDP has been declining, while the share of the mining, manufacturing, and service sectors has been increasing. The agricultural sector, including the livestock sector, provides raw materials such as food, textiles and leather for the processing industry to ensure the growth of manufacturing and service industries, while the agricultural sector

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provides security for the population. It is the main condition for providing guaranteed food. There are 3869 companies in agriculture, forestry, fishery and hunting, accounting for 4.1% of the registered companies in the statistical business register. According to preliminary results in 2019, the gross production value of animal husbandry reached 5.2 trillion dinars at current prices and 3.0 trillion dinars at constant prices in 2010, an increase of 18.1 compared with last year at current prices. %, an increase of 8.7% at a constant price. In 2019, the animal husbandry produced 545,000 tons of meat, 1.0742 million liters of milk, 33,700 tons of cashmere, 10,900 tons of cashmere, 22,000 tons of camel hair and 17.6 million animal skins.

4.2.3 Agriculture

Mongolia's agricultural history can be traced back to the beginning of grassland ownership and has gone through several historical stages. Mongolia's extensive land tenure began in the late 1950s. The Mongolian government owned and developed grassland land to improve the population's food supply, ensure the sustainable growth of livestock, introduce modern technologies and technologies, and improve economic development, thereby accelerating development. , Issued a decree to launch three Atar campaigns.

According to the "Agricultural Law", "the arable land is determined by the administrative unit", the Serenge government should also improve the ownership and use of arable land, increase productivity, protect soil fertility, further improve livestock varieties, increase livestock productivity and protect livestock. In terms of environment, there are 113 bags/hour in 60 countries/regions in 7 target regions including Tuv, Darkhan-Uul, Bulgan, Khentii, Uvurkhangai and Arkhangai. Atar IV Campaign On December 25, 2019, the Mongolian government issued Resolution No. 476, announcing and implementing the "ATAR-4 Sustainable Farming Development Campaign" nationwide from January 1, 2020. The campaign aims to reduce soil erosion, degradation and fertility degradation, restore livelihoods, develop agriculture that adapts to climate change, improve risk resilience, ensure the sustainability of agricultural ecosystems and fully meet food needs and security.

In the past 16 years, from 2003 to 2019, the area of hay and pasture decreased by 1.1 million hectares to 113.1-112.0 million hectares. According to preliminary results in 2019, the total output value of the agricultural sector is 833.3 billion tugriks at current prices and 445.3 billion tugriks at constant 2010 prices, compared to 7.1 billion tugriks in 2018. The price may be 0.9% at current prices, and at constant prices, the price of 21.2 billion totems has increased by 5.0%.

The number of households engaged in agriculture increased from 15,900 in 2018 to 14,700 in 2019, an increase of 1.1000 or 7.1%, and the number of business entities and organizations increased from 1.4 thousand in 2018 to 1.4 thousand in 2019, compared to the previous year An increase of 21 times. It is down by 1.5%.

Nationwide, in 2019, 70.2% of the sown area of cereals, 16.4% of the sown area of plants, 8.3% of feed, 2.8% of potatoes, 1.6% of vegetables, 0.6% of fruits, 0.1% of medicine and food, and other plants . Compared with 2018, the proportion of cereals in the total sown area decreased by 1.4 points, feed crops decreased by 0.7 points, fruits, medicinal and other plants decreased by 0.2 points, vegetables decreased by 0.1 points, and technical crops decreased by 2.3 points , The potato dropped by 0.3 points. .

In 2019, Mongolia harvested 433,300 tons of grains, 192,200 tons of potatoes, 99,500 tons of vegetables, 121,100 tons of feed, 34,000 tons of technical plants, and 18,000 tons of fruits and vegetables, or 20,500 tons, an increase of 4.5 times over 2018. Crops and feed were reduced by 2.7 thousand tons or 2.2%, vegetables by 1.2 thousand tons or 1.1%, potatoes by 23.3 tons or 13.8%, and technical factories by 101,000 tons or 42.4%. , The fruit increased by 0.1 thousand tons or 5.0%.

In 2019, the harvest of greenhouse vegetables was 4485.4 tons, an increase of 14,000 tons over the previous year, an increase of 44.3%.

In the first quarter of 2020, the value added of the agricultural sector (calculated at constant 2010 prices) increased by 14.0% compared to the same period last year. GDP fell by 10.7% and increased by 0.5%.

4.3 Analysis of the status quo of the Chinese Mongolian agricultural products trade

The importance of animal product trade in the agricultural trade between China and Mongolia has become obvious. China's imports of Mongolian livestock products account for about 90% of Mongolia's total agricultural imports. Historically, Mongolia was known for producing livestock products. The analysis in this section will focus on the trade status of livestock products in the agricultural trade between China and Mongolia.

In order to increase the employment rate and increase the added value of livestock products, the Mongolian government encourages local companies to export processed livestock products to China. Regarding export trade procedures to China, Mongolia has no other procedures other than quarantine requirements. However, starting from October 2019, Mongolian companies must obtain export qualifications approved by the Mongolian government and apply for export quotas. Since there is no bilateral free trade treaty between China and Mongolia, there are no preferential policies for trade in livestock products between China and Mongolia, only general policies. Mongolian livestock products are mainly imported to China from Erenhot Port,

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Baotou Customs, Seck Port, Zhunadabqi Port, Alihasat Port and Taksiken Port. China's import of Mongolian livestock products follows conventional procedures and has some special requirements for meat products. The six main specific requirements are as follows: 1. only allow qualified ports to be imported; 2. the import of ungulate animals and their products is prohibited; 3. Allow the import of heat-treated cooked food; 4. the import of horses and horse meat is allowed. Live horses need to be quarantined in the quarantine area of Erenhot Port. Live horses can be imported as long as the inspection and quarantine meets the standards; 5. Imported lamb must comply with the designated ports, these ports are Erenhot Port, Seck Port, and Mandurah Port; 6. Imported livestock products must meet Chinese standards. GACC has developed a list of animals and their products prohibited in countries/regions where animal diseases are endemic (version on March 10, 2020).

Table 3. List of animals and their products prohibited from importing (March 10th 2020 version)

Country of area	Disease	Prohibited import goods name
Mongolia	Foot-and-mouth disease	Cloven hoofed animals and related products (except for some areas of Zamenwud City, East Gobi province)
	African swine fever	Pigs, wild boar and their products
	Avian influenza	Poultry and its products
	Swine fever	Pigs, wild boar and their products
	Small rumnant epidemic	Cattle and sheep and related products (outside some areas of Zamenwud City, East Gobi province)

The trade of agricultural products between China and Mongolia is complementary to each other, reflecting the endowment of both sides' agricultural production resources. However, Sino-Mongolian agricultural trade depends on several product categories. The value of livestock products absolutely occupies the leading position in China's imports of Mongolian livestock products. Mongolian livestock products account for about 1% of China's livestock product import market. Except for horse, donkey and mule horse products, Mongolian livestock products have a low market position in China. This is mainly due to the limitations of Mongolia's own animal husbandry. The following chapter summarizes the main reasons from the perspective of the Chinese market.

3.1.2 Analysis of the status quo of bilateral exports

China-Mongolia trade has strong development potential. Since 1998, China has become Mongolia's largest trading partner. The trade between China and Mongolia is showing a trend of rapid development, especially the increase in imports from Mongolia. From 1992 to 2018, the total trade volume between China and Mongolia increased from US\$180 million to US\$7.99 billion. The export value increased from 140 million U.S. dollars to 1.65 billion U.S. dollars; the import value increased from 40 million U.S. dollars to 6.34 billion U.S. dollars. In addition, since 1994, China's trade with Mongolia has been in a deficit, and the trade deficit has been expanding.

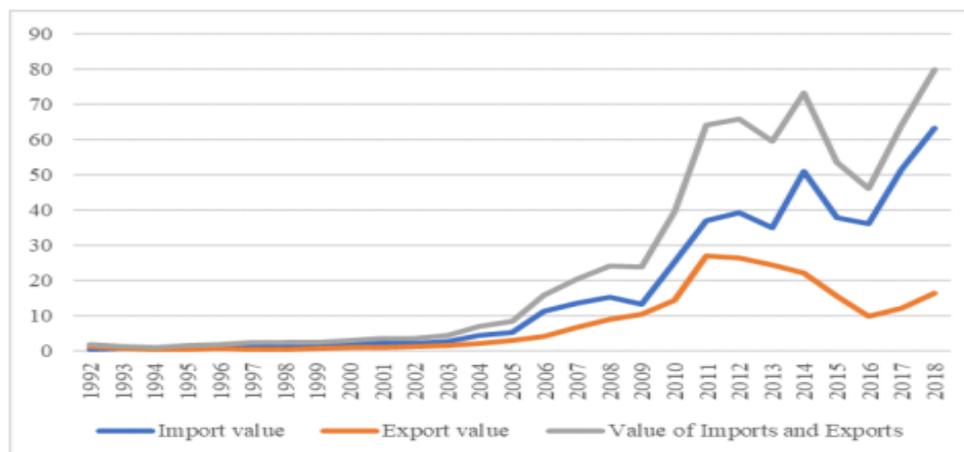


Figure 4. China-Mongolia agricultural trade value (Unit 100 million US dollars)

Analysis of Factors That Influence Agricultural Trade between China and Mongolia

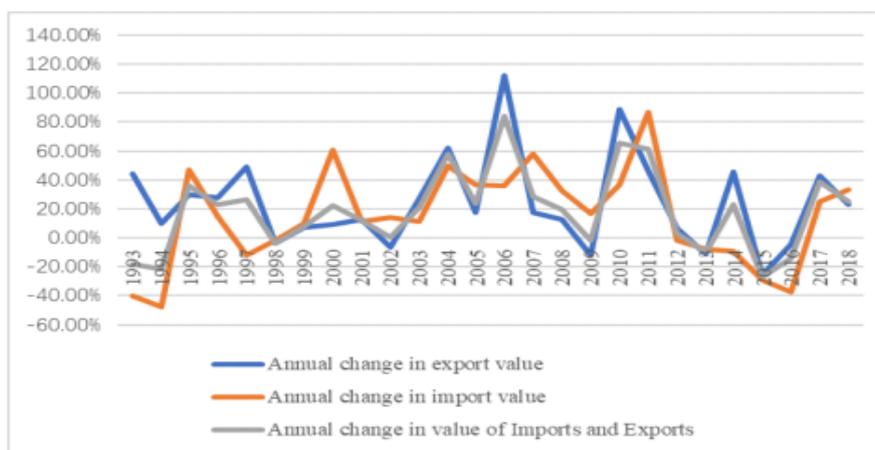


Figure 5. Annual changes in China-Mongolia trade value

Regardless of imports, exports or total imports and exports, Sino-Mongolian trade shows great volatility. The total trade volume between China and Mongolia fell by 21.3% in 1993, the largest drop in 26 years. The total trade volume between China and Mongolia in 2005 increased by 83.85%, the highest increase in 26 years. In 2014, the value of imports from Mongolia fell by 25.89%, the largest drop in 26 years. In 2005, the value of imports from Mongolia increased by 112.09%, the highest increase in 26 years. In 1993, the total value of exports to Mongolia fell by 47.63%, the largest drop in 26 years. In 2006, the total value of exports to Mongolia increased by 57.7%, the highest increase in 26 years. Therefore, the fluctuation range of China-Mongolia's exports to Mongolia is relatively small, but the fluctuation range of imports from Mongolia and the total trade volume between China and Mongolia are extremely large. This shows that it is difficult for Mongolia to maintain a stable quantity and quality of exports to China for a long time. Mongolia's unstable supply is a variable that affects Sino-Mongolian trade.

The trade of agricultural products between China and Mongolia is growing rapidly. From 2001 to 2018, the total agricultural trade between China and Mongolia increased from USD 33 million in 2001 to USD 477 million in 2018. Imports increased from 13 million U.S. dollars in 2001 to 338 million U.S. dollars in 2018. The export value increased from 20 million U.S. dollars in 2001 to 138 million U.S. dollars in 2018. The trade of agricultural products between China and Mongolia is growing rapidly and the prospects for development are broad. First of all, agricultural trade accounts for a relatively small proportion of the total trade between China and Mongolia, and has shown a downward trend in recent years. The proportion of Sino-Mongolian agricultural products trade in Sino-Mongolian trade is gradually declining. The total trade of agricultural products accounted for 5.45% of the total trade between China and Mongolia in 2001. By 2018, this number had dropped to 1.73%. The proportion of agricultural imports from Mongolia remained basically stable. In 2001, the import of Mongolian agricultural products accounted for 5.36% of the import of Mongolian products. By 2018, this figure remained at 5.34%. Agricultural products exported to Mongolia are an important category of products exported to Mongolia. As shown in Figure 3-4, the proportion of total exports in 2001 was about 16%. Although it has been declining since then, agricultural exports to Mongolia still account for a relatively important position in overall exports to Mongolia. In 2018, exports of agricultural products to Mongolia accounted for 8.38%.

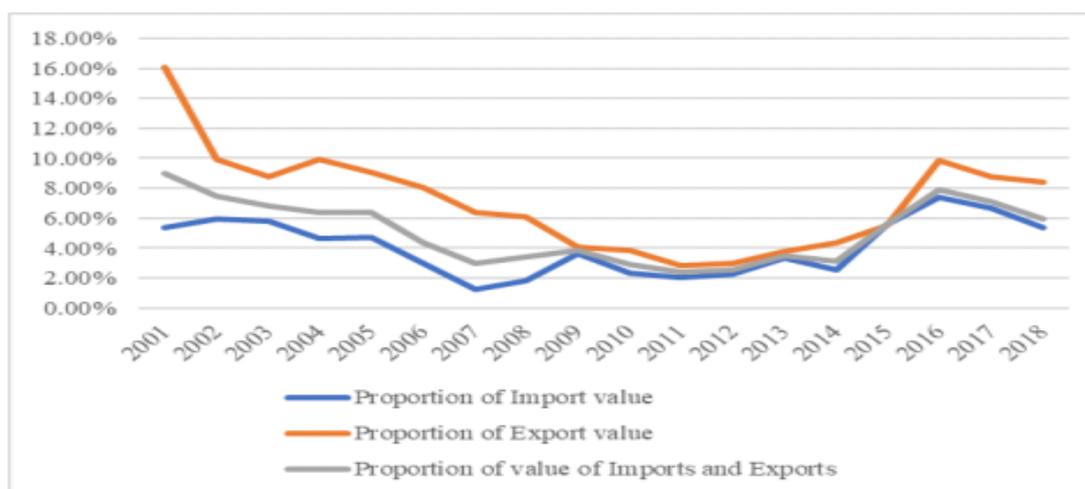


Figure 6. Proportion of China-Mongolian agricultural trade value

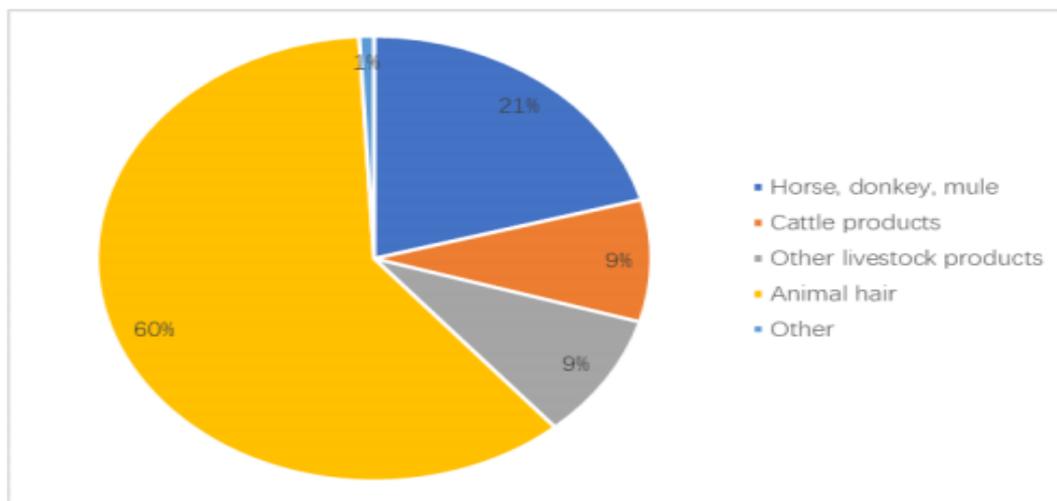


Figure 7. China's agricultural products import structure from Mongolia

Second, China-Mongolia agricultural trade has fluctuated greatly. Like Sino-Mongolian trade, agricultural trade between China and Mongolia is also highly volatile. The total trade volume of agricultural products between China and Mongolia fell by 16.6% in 2002, the largest drop in 18 years. In 2004, the total trade volume of agricultural products between China and Mongolia increased by 47.9%, the highest increase in 18 years. In 2007, Mongolia's agricultural imports fell by 50.3%, the largest drop in 18 years. In 2009, the total value of Mongolia's agricultural imports increased by 75.7%, the highest increase in 18 years. Agricultural exports to Mongolia fell by 29.7% in 2002, the largest decline in 18 years. In 2004, agricultural exports to Mongolia increased by 69.5%, the highest increase in 18 years. The total trade volume of agricultural products has not changed much, but the volume of import and export trade has changed significantly. Mongolia's unstable agricultural production has a greater impact on Sino-Mongolian agricultural product trade, which is consistent with the overall situation of Sino-Mongolian trade.

Third, China-Mongolia agricultural trade seems to be quite complementary. In terms of trade structure, China mainly exports food, poultry products, sugar, vegetables and other processed agricultural products to Mongolia. According to statistics (Figure 3-6), the number of cereal products is the largest in China's agricultural exports, accounting for about 30%. Poultry products are China's second largest export product to Mongolia, accounting for about 20%. The processed agricultural products or raw materials of the food industry are China's third largest export product to Mongolia, accounting for about 10%. The agricultural products China imports from Mongolia are mainly livestock products, especially animal hair. As shown in Figure 3-7, they together account for 60% of the total agricultural imports from Mongolia. Horses, donkeys and m-products account for about 21% of the total agricultural imports from Mongolia.

First of all, the quality and price of Mongolian livestock products restrict the export of Mongolian livestock products. Mongolian livestock products are mainly exported at low prices, relying on low prices to enter the market and compete with other products in the market. Although falling prices can increase export competitiveness in the short term, it will not be conducive to the long-term development of the livestock industry and companies that produce animal products. With the increase in raw material prices and labor costs in Mongolia, the low price advantage of livestock products has gradually disappeared. Almost all Mongolian machinery and equipment are imported from other countries. Imported machinery and equipment are very expensive, but the Mongolian government has not yet strictly supervised and supervised the use of modern machinery and equipment. As a result, most factories do not have advanced equipment and use old production methods. This has led to inefficiencies in Mongolian livestock production and processing. Compared with livestock product processing plants in developed countries, the gap is large and it is difficult to guarantee the quality. At the same time, Mongolia's export safety standard is relatively low at 24, which makes it difficult for a large number of livestock processing plants to ensure the health and safety of their products. It restricts the export of Mongolian livestock products.

Secondly, the relevant government policies fluctuate greatly. Mongolia's political and economic policies are unstable and the trading environment changes frequently. Inconsistent trade policies have also fundamentally damaged Mongolia's export of livestock products. The findings of this study show that Chinese importers have found that one of the obstacles to importing Mongolian livestock products is the negative impact of temporary restrictions. Third, the degree of industrialization of livestock products in Mongolia is relatively low. The main producers are Mongolian free-range herders. Decentralized breeding methods make it difficult for herders to resist natural disasters. Will cause great losses. Because most herders have low literacy and business knowledge, it is difficult for them to understand the market situation of animal husbandry quality regulations. Some herders sell

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their products through cooperatives, but most shepherds usually look for acquaintances to help sell their products in the market. This decentralized form of circulation makes Mongolia's livestock product industry more decentralized. Decentralization has increased the cost of integrating the industrial chain and restricted Mongolia's export of livestock products to China. The downturn in industrial development has also led to a small number of Mongolian livestock products that can be supplied to the market. The lack of professional market circulation leads to frequent credibility problems. According to the survey results, the low variety and quantity of Mongolian livestock products and low credibility are the main problems faced by Chinese importers. Fourth, the progress of the China-Mongolia trade agreement is still lagging behind. Currently, there is no bilateral free trade agreement between China and Mongolia. The bilateral trade between China and Mongolia is carried out within the framework of the WTO. According to statistics, the overall level of trade, including livestock products, between China and Mongolia is currently not high. However, our survey results show that there is informal trade between China and Mongolia, which is inconsistent with the low level of statistics. Due to the lack of more convenient trade arrangements, a large amount of official trade was forced to turn into informal trade. However, it is difficult to guarantee the quality and safety of products through informal trade. On the one hand, it is difficult to monitor the sales of Mongolian animal products in China, and consumer feedback on Mongolian animal products is also difficult to be recognized. On the other hand, some low-quality Mongolian livestock products are exported to China, which has brought loss of profits to China and Mongolia, and also made Mongolian products lose their credibility.

4.4 Analysis of influencing factors of Chinese-Mongolian agricultural products trade

The share of Mongolian agricultural especially livestock products in China's livestock product import market is very low. The reasons can be shown with analyzing the suppliers.

First, China-Mongolia livestock products trading enterprises are mainly small and medium-sized enterprises and their ability to resist risks is very low. Most enterprises have limited financial strength and foreign commitments as well as low credibility, operating capabilities, management concepts, or standards. The agriculture and animal husbandry industry usually have large investment risks and long return periods. The industry is greatly affected by factors such as natural conditions and diseases. Therefore, lack of big trading companies in Mongolia has restricted the deepening and promotion of economic and trade cooperation.

Second, there is a certain gap between the level of animal disease control in Mongolia and China's inspection and quarantine requirements. In recent years, for developing the country's economy, Mongolia has increased exports of beef and mutton products. However, it happened many times that the meat product can't meet the inspection and quarantine standard of China. The import was temporarily suspended, or the permissions of individual Mongolian meat produce companies were even cancelled. Mongolia's animal husbandry industry's epidemic prevention technology level is relatively low, resulting in low standards of meat products. Hence, it hinders Mongolian livestock product export to China.

Third, China-Mongolia cross-border logistics need to be improved. Because of strict time limits and easy quality loss, agricultural products have higher requirements for logistics. As the cross-border trade of livestock products takes a relatively long time due to long distances and many value chain links, it needs strong logistic technologies, facilities and equipment. China's logistics infrastructure is well developed, and the development of cold chain logistics is relatively good. However, the construction of China-Mongolia border port and 31 Mongolia's domestic logistics infrastructure is lagging. The storage and loading facilities at the border port are inadequate, and the cold chain transportation vehicles are severely outdated. The current infrastructure system cannot meet the growing agricultural product logistics need between China and Mongolia.

Fourth, the development level of China-Mongolia agricultural product trade mainly depends on Mongolia. Due to natural disasters, Mongolian policy changes, and other factors, Mongolia's supply capacity has always been highly volatile. This fluctuation has made a negative impact on China-Mongolia agricultural products trade. It can be concluded that the bargaining power of Mongolian agricultural products in the Chinese market is not strong.

China is one of the biggest importer and customer of livestock products in the world. It is not only reflected in the growth in quantity, but also in quality. This can be manifested in three aspects:

First, the consumption structure of livestock products will be further adjusted. The traditional consumption preference of urban and rural residents determines that pork plays a leading role in the consumption of livestock products in China. However, the proportion of pork consumption continually declines. Poultry, milk and dairy products consumption has increased significantly. With the improvement of the living standard of residents and the further improvement of the consumption level of livestock products, the consumption of residents will continue to diversify. The proportion of beef, mutton, poultry, milk and dairy products consumption will increase. In addition, China has become an aging society. Aging will bring further changes to structure and quantity of food consumption. There are usually great differences in the demand for livestock products among elderly, middle-aged and young people. For example, the elderly often reduce the consumption of meat, especially red meat. Although the impact of aging is not too obvious at present, the impact of aging in the future needs more attention.

Second, Chinese pay more attention to the quality and safety of agricultural products. With the improvement of people's living standards and the enhancement of quality and safety awareness, the demand for agricultural products by Chinese residents is

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changing from quantity to quality. The traditional "price priority" consumption concept of urban and rural residents is changing to "price and quality". Concerning quality and safety incidents that occurred in recent years, people pay more attention to the quality of agricultural products, especially the hygiene and safety of agricultural products.

Third, residents' demand for processed livestock products and pure natural agricultural products has increased significantly. The processed livestock products need to adhere to local taste, being rich on nutrition and convenient made available for consumers. With the increase of investment in science and technology, the upgrading of equipment, the combination of traditional skills and modern technologies in recent years, processed livestock products have developed rapidly. The variety of processed livestock products has continued to increase, and consumers' demand shows a rapid growth trend. In the future, as the income level of urban and rural resident might increase further the proportion of consumption of processed livestock products will continue to rise.

4.5 China-Mongolia agricultural product trade revealed comparative advantage index (RCA Index)

In general, when the RCA value is bigger than 1, it indicates that the proportion of this type of product in the country's export is bigger than that in the global overall export. The country's product has an explicit comparative advantage the in global market. When the RCA value is less than 1, it indicates that the product's competitiveness in the global market is relatively weak. When the RCA value is close to 1, it indicates a neutral comparative advantage. The country's products have no comparative advantage or disadvantage in the international market. In this report, the RCA index of China is calculated by using the export data.

$$RCA_{is} = (EX_{is}/EX_{ts}) / (EX_{ir}/EX_{tr})$$

RCA index, according to China's relatively weak primary product competitiveness, and downward trend year by year, including SITC0 (Food and live animal products), SITC1 (Beverages and tobacco), SITC4 (Animal fats), the reason is that China is the world's most populous country, population densities, nature resources consumption is big, so there is no comparison between the advantage of resources intensive products.

The Standard International Trade Classification (SITC) is a standardized way of classifying goods that is used in statistics on imports and exports. The codes are listed here for each commodity group:

- SITC0- Food and Live Animals
- SITC1- Meat and Meat Preparations
- SITC2- Dairy Products and Birds' Eggs
- SITC3- Fish Crustaceans, Molluscs; Prep. Thereof
- SITC4- Cereals and Cereal Preparations
- SITC5- Vegetables and Fruit
- SITC6- Sugars, Sugar Preparations and Honey
- SITC7- Coffee and Coffee Substitutes
- SITC8- Feeding Stuff for Animals, Excl. Unmil. Cer
- SITC9- Miscellaneous Edible Products and Prep.

Mongolia as an exporter of dominant comparative advantage index, the primary products (SITC0- 4) : In addition to (SITC2) Non-food raw materials, SITC0, SITC1, SITC3, SITC4 products the RCA index of less than 1, and SITC2 products of RCA index greater than 7, the Mongolia in food and live animals products, drink and smoke, fossil fuel and lubricating oil and raw materials and animal oils and fats products exports have disadvantages, such as non-edible strong comparative advantage on the lead product export. The RCA index of SITC9 unclassified products is all greater than 1, especially, some years are more than 2.5, so it can be calculated that Mongolia has a strong comparative advantage in the export of unclassified products.

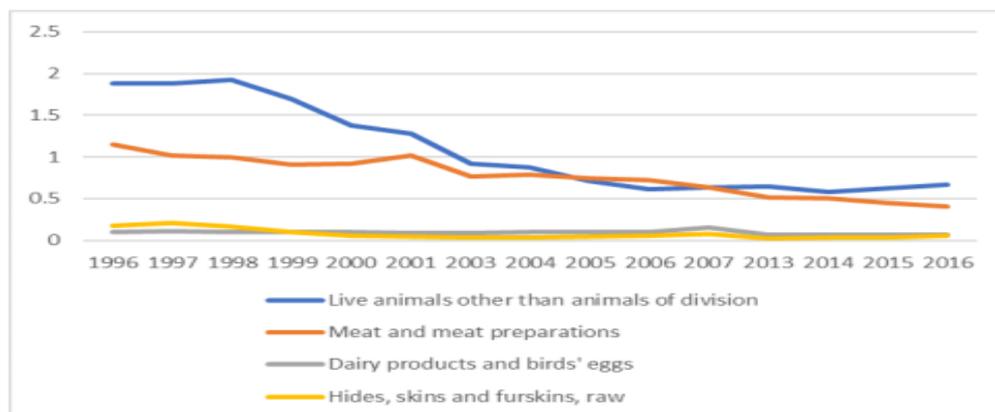


Figure 8. Changes in the RCA index of Livestock products in China

Analysis of Factors That Influence Agricultural Trade between China and Mongolia

The RCA index shows that China's livestock products industry used to have a 28 very strong comparative advantage in live animals, meat products, and dairy products. Nevertheless, with the further development of the Chinese economy, China's live animals, meat products, and dairy products' competitive comparative advantage has continued to decrease and the index result has fallen below 1. It indicates that China's comparative advantage in live animals, meat products, and dairy products is gone. As China's consumer demand for live animals, meat products, and dairy products continues to grow, China will increase imports of these products. The calculation results also show that China has no comparative advantage in animal hair, leather and leather products. With the further development of the Chinese economy and the increased demand for leather products, the imports of leather products will rise accordingly.

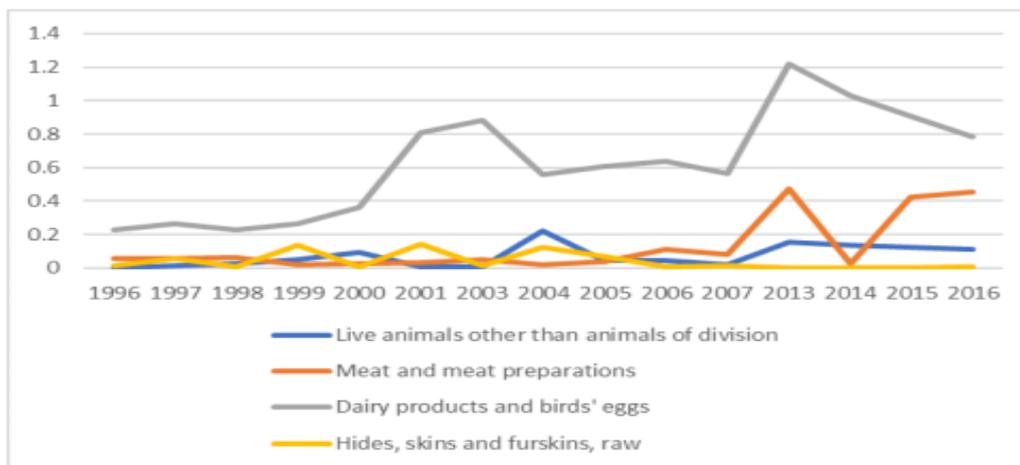


Figure 9. Changes in RCA index of Mongolian livestock products

The change of the RCA index of Mongolian livestock products shows that Mongolia is continuously losing its competitive advantage in dairy products, especially in recent years. The dominant disadvantage index has risen to around 1, which means Mongolia lacks a competitive advantage in dairy products. However, live animals, meat products, animal hair, skins, and leather products, especially in animal hair, leather, and leather products have strong competitive advantages. Mongolia can further expand exports of live animals, meat products, animal hair, hides, and leather products.

5. CONCLUSIONS AND RECOMMENDATIONS

Based on the continuous development of trade relations between China and Mongolia, agricultural trade between China and Mongolia has begun to develop rapidly. First, the development of China-Mongolia agricultural trade is faster than the overall development of China's agricultural product trade. After entering into the WTO, the agricultural trade between China and Mongolia has shown a rapid growth. From 2001 to 2018, the average annual growth rate of China-Mongolia agricultural trade is 17.1%, which is 4.3% higher than the average annual growth rate of China's total agricultural trade. The average annual growth rate of agricultural 26 import from Mongolia is 5.7% higher than the overall increase of China's agricultural imports. The average annual increase of agricultural exports to Mongolia is 2.2% higher than the overall increase of China's agricultural exports. The analysis of overall trade, export or import shows the development of China-Mongolia agricultural trade is faster than the overall development of China's agricultural trade.

Second, China-Mongolia agricultural product trade is highly complementary. The main products China exports to Mongolia are grain, sugar, poultry products and other agricultural products. While cashmere, donkey, horse, and mule products have comparative advantages to export from Mongolia to China. Bilateral cooperation in this field will continue to develop like a naturally.

Third, the RCA index shows that China's livestock products industry used to have a 28 very strong comparative advantage in live animals, meat products, and dairy products. Nevertheless, with the further development of the Chinese economy, China's live animals, meat products, and dairy products' competitive comparative advantage has continued to decrease and the index result has fallen below 1. It indicates that China's comparative advantage in live animals, meat products, and dairy products is gone. As China's consumer demand for live animals, meat products, and dairy products continues to grow, China will increase imports of these products.

The calculation results also show that China has no comparative advantage in animal hair, leather and leather products. With the further development of the Chinese economy and the increased demand for leather products, the imports of leather products will rise accordingly. The livestock trade is the most potential part for further development of China-Mongolian agricultural product

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trade. China–Mongolian livestock trade has a great development prospect. Mongolian livestock products have not played a particularly important role in the Chinese livestock product market. It is mainly limited by the low level of development of the Mongolian livestock industry. However, with the Chinese consumers' more demand for customized consumption of livestock products and the development of the livestock industry in Mongolia, it is expected that China and Mongolia will have greater cooperation in livestock products trade.

Fourth, Chinese pay more attention to the quality and safety of agricultural products. With the improvement of people's living standards and the enhancement of quality and safety awareness, the demand for agricultural products by Chinese residents is changing from quantity to quality. So if Mongolia wants to increase the export of agricultural products trade with China, need to consider quality of it.

The following market competition strategies are proposed for Mongolian enterprises:

Focus on the production of Mongolian specialty livestock products.

Promote the export of high-quality Mongolian livestock products to China by improving Mongolian livestock production and developing Mongolian livestock public and corporate product brands.

The second reason is that some Mongolian livestock products have limited potential to expand the export volume to China. For example, more than 50% of Mongolian cashmere is already being exported to China.

Mongolian enterprises should develop new marketing strategies.

To achieve an accurate placement of Mongolian agricultural products in the Chinese market, e-commerce channels can be adopted and Chinese e-commerce companies can be contacted for marketing the products. At present, Mongolian agricultural products are mainly exported in small batches with outdated vehicles and relatively high trade costs. Cross-border e-commerce could effectively help reduce trade costs (Luo et al, 2018; Chang et al, 2019; Mei et al, 2020).

A strong Mongolian SME network should be established, to enhance information communication and business collaboration through organizations such as industry associations and chambers of commerce.

The following policy recommendations are proposed for Mongolian government ministries and agencies:

Accelerate the progress of economic and trade negotiations with China, and commit to reach a trade arrangement with more liberalized trade and more convenient investment under the WTO framework.

Mongolia and China are mainly conducting trade under the WTO framework. In the context of the rapid development of regional trade agreements, both sides should strive for a bilateral economic partnership or multilateral regional trade arrangement under the WTO framework. This trade arrangement should aim to progress market access, inspection and quarantine, export subsidies, domestic support, bilateral exchange rates, and product standards. A bilateral or multilateral arrangement in Northeast Asia could help Mongolia's agricultural products to strengthen exports to China and realize its export potential to China.

Strengthen cooperation with China to improve logistics cross-border infrastructure of China and Mongolia within the Asian Infrastructure Investment Bank (AIIB) framework and other multinational cooperation frameworks.

Agricultural products, especially bovine products, are fresh and perishable. The transportation of livestock products between China and Mongolia is based on land routes. At present, China mainly adopts mechanical quick-frozen carriages instead of automatic refrigerated carriages. The cost of refrigerated storage at the trade ports between China and Mongolia is high and the facilities are insufficient. This leads to the whole transportation volume of refrigerated agricultural products only being 1% of the total transportation volume. High logistics cost and less cold chain transportation volume lead to an increase of agricultural product prices, which hinders the development of cross-border trade of agricultural products. At present, the refrigerated transportation rate of agricultural products in China is about 10%, which results in a large number of fresh agricultural products rotting in the transportation process.

Improve the enforcement of domestic livestock product hygiene standards and ensure the safety of Mongolian livestock products.

Mongolia should step up inspection work on factories that produce livestock products and pass a strong legislation on food and production safety. The Mongolian government's safety supervision department should also improve its implementation ability and strictly inspect the hygiene and safety of livestock products in accordance with relevant laws and regulations. Mongolia should implement relevant preferential policies or support policies for factories that produce livestock products, so that factories that produce livestock products can increase investment in safety and health aspects. Through the implementation of relevant preferential policies for livestock product processing plants or increased investment in livestock product processing plants, Mongolia's livestock product processing capacity and product quality could be improved. Mongolia should strengthen cooperation with China on product quality supervision to meet Chinese relevant product hygiene level and product quality standards. Currently, China has reached preliminary agreements on the inspection and quarantine mechanism for a lot of products from the ASEAN region, which plays a big role in promoting the trade of related agricultural products between China and the ASEAN (He, 2018). The experiences can be used as examples for Mongolia.

Increase cross-border law enforcement cooperation on food safety. Especially for cross-border trade, it is more difficult to trace back where product quality and safety issues occurred. Therefore, it is necessary to strengthen cross-border law enforcement cooperation on product and food safety between China and Mongolia. It will increase consumer confidence and can increase Mongolian livestock product exports to China.

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