

Analysis of China's Soybean Import: Based on the Perspective of Welfare Economics

LI Dongmei^{[a],[b]}; LIANG Song^[c]; ZHU Qiang^[a]; LIN Siyuan^[a]; ZHANG Jun^[d]

^[a]Institute of Food Economics, Nanjing University of Finance and Economics, Nanjing, China.

^[b]Changzhou Vocational Institute of Engineering, Changzhou, China.

^[c]School of Economics and Management, Anhui Agricultural University, Hefei, China.

^[d]Faculty of Business, Kunming Metallurgy College, Kunming, China.

*Corresponding author.

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Abstract

China's soybean import meets the growing nutritional demand of Chinese residents, but the continuous increase in soybean import quantity has also caused disputes about over import. The continuous importation of soybean in China gradually forms a path dependence on some major exporting countries. On the analytic basis of soybean supply and demand in China, this paper employs CR index and HHI index to measure the import concentration of soybean, and analyzes the monopoly pricing mechanism of international soybean by adopting welfare economics method. The results show that the imported soybean has gained strengthened monopoly in China's market, thus increasing the risk of consumers' welfare in loss. From the demand perspective, the loss of consumer welfare can be reduced by lessening soybean demand and increasing demand elasticity. From the perspective of supply, the same objective can be also achieved by increasing market competition in diversification and reducing monopoly transaction costs. As a result, some policy suggestions can be thus put forward: firstly, it's suggested to control the importation of soybean and augment the imported alternative products. Secondly, it's recommended to reduce the transaction cost of the major exporters to China, and to promote an imported strategy in diversification by strengthening the cooperation with countries that join in the "belt and road initiative".

Key words: Import structure; Welfare effect; Market concentration

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Under the economic globalization, countries all over the world actively participate in the global division of agricultural industry in order to obtain comparative advantages. Agricultural internationalization optimizes the global allocation of agricultural production factors, improves the use efficiency of agricultural resources and the increase of international food supply, and also promotes the growth of China's import of food in the international market. Soybean is one of the earliest agricultural products that enjoy the benefit of opening market in China. Under the background that the world sees an increasing planting area of soybean in, domestic soybean production seems lacking in advantage compared with other cereal crops. The fact is that domestic soybean is far from meeting demand as the soybean planting area in China is maintained between 6 million and 9 million hectares per year, and additionally the soybean yield per unit area are unfavorable, which relies on imports to fill the huge demand vacuum (Guo, Wang, & Hao, 2013). Since 1996, China has turned from an exporter to an importer of soybeans, marking 1.11 million tons of soybeans imported in the same year. By 2018, it has imported 82 million tons of soybeans, accounting for 54% of the world trade volume. In the meantime, the surging demand of imported soybean of China and other emerging economies such as Vietnam and India has put domestic soybean production and consumption are into uncertainty, which increases the import risks (Si & Zhang, 2013).

The structure of soybean importation coincides with the rapid growth of imported soybean (Xia & Sun, 2016). Possessing huge comparative advantages in soybean planting, the American countries account for major soybean producing and exporting countries in the world,

among which the United States, Brazil and Argentina are rich in arable land resources and so they play major roles in soybean export market. China also imports most soybean imports from these three countries. However, the import share that was dominated by has slid out to Brazil, Argentina and the United States. Moreover, there exist obvious seasonal complementarity in soybean planting and export between America and countries like Brazil and Argentina (Lin, Zhu & Wu, 2014).

The structural concentration of soybean export has conducted to the oligopoly in the soybean international trade market, while the complementation in export time realized by the main soybean exporting countries makes the oligopoly even stronger. Consequently, the concentration force of soybean exporting countries make the soybean price an unspoken agreement, which leads to welfare losses of soybean imports in China (Xu, 2013). But China, the largest buyer in international soybean market, is really unable to pose bargain influence because the country is in rigid demand of soybean under the constraint of resource endowment (Ma & Wang, 2012). As grain is not only a general commodity, but also a specific commodity with strategic and risky nature (Zhou & Li, 2010), China's food import may face greater risks under current situation of tight balance of world food supply and demand, as well as economic and political problems such as food embargo or substantial reduction of food production in major exporting countries (Fu, Zhong, & Xu, 2001).

Under the anti-globalization economy, trade protection hinders trade liberalization, and also urges China to pay attention to the security of grain import supply while facing trade frictions. While considering the stability of food supply, we should also consider the risk of excessive concentration of food supply. Under the background of oligopoly of soybean suppliers, it is required to conduct analysis on the aspects of soybean supply, demand and import structure to reduce the welfare loss of imported soybean and improve its safety. Consequently, this

paper begins with the analysis of current situation of the soybean supply and demand and import structure in China before diving into a discussion, in combination with the analysis of soybean market pricing mechanism, on how to reduce the welfare loss of domestic soybean import from the perspective of demand and supply, and to improve the safety of soybean import.

1. UNBALANCED SOYBEAN PRODUCTION & DEMAND AND CONCENTRATED IMPORT STRUCTURE IN CHINA

1.1 Sluggish Growth of Soybean Production in China

The total yield of soybean is determined by the planting area and yield per unit area. In China, the output of other economic crops and staple food is relatively superior. The unit price of soybean is relatively higher than that of other food crops. However, due to the low yield per unit area and the seasonal characteristics of planting, soybean is only popularized and planted in Jilin, Hei Long Jiang, Inner Mongolia and Liao Ning provinces in China.

It is indicated in Table 1 that the sown area of soybean in China has been diminishing since 1997 before it enjoyed a rise due to the supply side reform in 2016. The soybean planting area continues to decline domestically for that corn planting continues to compress soybean planting space as corn has obvious comparative advantage of high yield per unit area compared with soybean planting even though they are both grain substitutes. When the reform of corn purchase and storage policy that includes market-oriented purchase and subsidy was launched in 2016, the continuous expansion trend of corn planting was restrained, and the soybean planting area began to rise. However, the total domestic soybean output only sees a slow growth as the soybean yield per unit area is only marked with unpleasing growth in recent years due to not much technical breakthrough in soybean production.

Table 1
Domestic soybean planting situation

Year	1997	2010	2011	2012	2013	2014	2015	2016	2017	2018
Sown area proportion of corn	15.4%	20.2%	20.7%	21.4%	22.1%	22.4%	22.9%	26.5%	25.5%	25.4%
Sown area proportion of soybean	5.4%	5.3%	4.9%	4.4%	4.1%	4.1%	3.9%	4.6%	5%	5.1%
Soybean yield per unit area (kg / HA)	1765	1771	1836	1820	1760	1787	1811	1789	1854	1898
Soybean yield per unit area (kg / HA)	4387.3	5453.7	5747.5	5869.7	6015.9	5808.9	5892.9	5967.1	6110.3	6104.3
Soybean output (10000 tons)	1473	1541	1488	1344	1241	1269	1237	1359.5	1528.2	1597

Source: China agriculture, rural areas and farmers database (1997-2018).

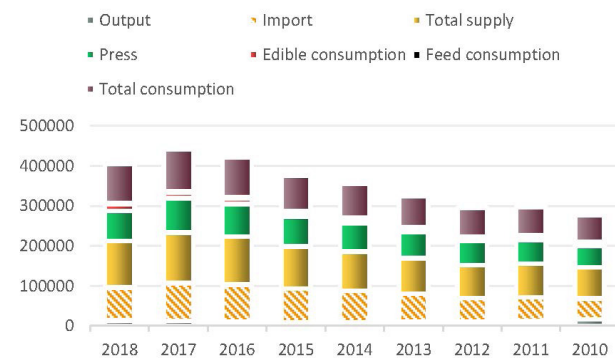
In the future, China's soybean production mainly depends on the improvement of domestic soybean yield technology. With the continuous growth of corn market demand, soybean planting and promotion is still difficult to get the favor of farmers. Therefore, the comparative advantage of South American Soybean with high yield per unit area and the seasonal difference of soybean production with China are the main reasons for China to continue to choose South American soybean as demand substitution.

1.2 Continuous Growth of Soybean Consumption Demand in China

The dietary structure of Chinese residents showed an increasing preference for meat protein, accompanied by the change of feeding mode using soybean as feed. Figure 2 shows a significant increasing trend in China's soybean consumption, and most of the consumption is occupied by soybean pressing industry, food consumption and feeding industry. As the residential income of Chinese has rapid

increased in recent years, the consumption of edible oil and meat protein has also augmented. Moreover, there exists a huge demand for soybean meal, the intermediate product of soybean press, in feeding industry, which leads to a quick increase of soybean demand for press industry. Additionally, the soybean for pressing is mainly imported genetically modified soybean. The soybean products account for a major consumption of soybean as food, and its growth has relatively slowed down in recent years.

Due to the restriction of cultivated land, the output of domestic soybean is difficult to meet the consumption demand in the short term; therefore the desire for imported soybean will maintain a stable growth.



Source: Statistical database of "Chinabric".
Unit: thousand tons

Figure 2
Soybean Consumption Situations from 2010 to 2018

Under China's two child policy, China's population will continue to grow, and the demand for animal protein food will grow at the same time. Under the strategy of absolute security of soybean planting area, China's grain growing area is growing slowly. China's soybean yield per unit area is relatively low. Therefore, China's soybean revitalization plan did not lead to a substantial increase in production. In view of the current consumption trend, the future import demand for soybean is still stable.

1.3 A stronger Concentration of Soybean Import Market Structure in China

The huge difference between domestic soybean consumption and output makes domestic market more profoundly dependent on imported soybeans. It's noticeable in Figure 2 that the importation of soybean shows a surging increase, from 90,000 tons in 1991 to 94.13 million tons in 2017. In 2018, the soybean import presented a slight decrease because of the African swine plague, while the livestock and poultry meat showed an increase in importation. Based on the current yield capacity per unit area of domestic soybean, it requires nearly 800 million mu of domestic land to yield an equivalent amount of soybeans that are imported. In China, as the land priority is given to the production of staple food, it is therefore unrealistic to occupy so much land in soybean production with limited land and resources. Consequently, domestic soybean imports will show further growth along with the domestic consumption upgrading process.

1.3.1 The Internal Restructuring of Soybean Export Countries Makes Brazil the Largest Trading Partner

Table 3 indicates that China imports soybean from the countries in very limited numbers, mainly from Brazil, the United States, Argentina and other countries with rich cultivated land resources. In 2018, imports from Brazil and the United States took up for more than 93% of the total soybean imports, and Brazil reached a share of 75%. The market share of major soybean source countries fluctuated along with different years, since the soybean production is impacted by natural climate; in fact, the total soybean imported from Brazil to China has been generally growing rapidly. However, the amount of soybean exported by Argentina shows a significant downward trend. From 2007 to 2012, China mainly imported soybean from the United States, and since 2013, the China begun to purchase more soybeans from Brazil, reaching more than 50% import share. Nevertheless, Argentina endured a continuous decline of soybean exports to China since 2001, while countries like Canada, Uruguay and Russia enjoyed a slight increase in soybean export.

Table 3
Top 5 Soybean Exporting Countries to China and Their Share from 1999 to 2018

Year	First		Second		Third		Fourth		Fifth	
	Country	Share	Country	Share	Country	Share	Country	Share	Country	Share
2018	Brazil	75.07%	U.S.	18.90%	Canada	2.04%	Argentina	1.66%	Uruguay	1.36%
2017	Brazil	53.31%	U.S.	34.39%	Argentina	6.89%	Uruguay	2.69%	Canada	2.14%
2013	Brazil	50.19%	U.S.	35.09%	Argentina	9.66%	Uruguay	3.63%	Canada	1.32%
2012	U.S.	44.48%	Brazil	40.92%	Argentina	10.10%	Uruguay	3.26%	Canada	1.08%
2011	U.S.	42.37%	Brazil	39.32%	Argentina	14.84%	Uruguay	2.73%	Canada	0.74%
2007	U.S.	37.54%	Brazil	34.34%	Argentina	26.86%	Uruguay	1.20%	Canada	0.06%
2006	Brazil	41.15%	U.S.	35.00%	Argentina	22.02%	Uruguay	1.78%	Canada	0.05%
2005	U.S.	41.55%	Brazil	29.90%	Argentina	27.82%	Uruguay	0.68%	Canada	0.05%
2001	U.S.	41.08%	Argentina	36.02%	Brazil	22.67%	Canada	0.12%	Russia	0.11%
2000	U.S.	51.96%	Argentina	26.72%	Brazil	20.34%	Canada	0.55%	Russia	0.42%
1999	U.S.	56.61%	Argentina	22.32%	Brazil	19.92%	Canada	0.95%	Russia	0.19%

Source: ad.yopease.net, edited by the author, omitting some annual data of the same trend.

1.3.2 Increased Market Concentration of Imported Soybean

Herfindahl-hirschman index (HHI) is used to measure the market concentration of imported soybean situation. The calculation formula is as follows,

$$HHI = \sum_{i=1}^N \left(\frac{X_i}{X} \right)^2 = \sum_{i=1}^N S_i^2$$

In which: X_i represents the scale of imported soybean from the country that ranks i among all source countries; X is the total scale of soybean import market; S_i is the market share of the country that ranks i among all source countries; N is the total number of soybean import source countries.

The measurement of market concentration ratio is used to indicate the market occupation degree of any major source country that exports soybeans to China. The market concentration ratio is represented by CR_n . The higher CR_n value means higher degree of soybean monopoly of major trading partners in China's market. Its calculation formula is as follows,

$$CR_n = \frac{\sum_{i=1}^n X_i}{\sum_{i=1}^N X_i}$$

In which: X_i represents the quantity of imported soybean from the country that ranks i among all source countries. n represents the total number of source countries that rank at i and before i in terms of import scale. N is the total number of soybean import source countries.

Table 4
HHI and CR Index of Soybean Import

Year	CR1	CR2	CR3	CR4	CR5	HHI
2018	0.75	0.94	0.96	0.9933	0.9933	0.60
2017	0.53	0.88	0.95	0.9942	0.9942	0.41
2016	0.46	0.86	0.96	0.98	1.00	0.38
2015	0.49	0.84	0.95	0.98	1.00	0.38
2014	0.45	0.87	0.95	0.99	1.00	0.39
2013	0.50	0.85	0.95	0.99	1.00	0.39
2012	0.44	0.85	0.96	0.99	1.00	0.38
2011	0.42	0.82	0.97	0.99	1.00	0.36
2010	0.43	0.77	0.97	1.00	1.00	0.34
2009	0.51	0.89	0.98	0.99	1.00	0.41
2008	0.41	0.72	0.99	1.00	1.00	0.34
2007	0.38	0.72	0.99	1.00	1.00	0.33
2006	0.41	0.76	0.98	1.00	1.00	0.34

The value range of HHI index is between 0 and 1, and a smaller index value shows that China's soybean import market is shared by more exporting countries and the market concentration is low and vice versa. When HHI equals 1, the market is completely monopolized.

As it is noticeable in Table 4 that the HHI index of soybean import shows a significant growing trend from 0.34 in 2006 to 0.6 in 2018, which indicates an increasing trend of soybean import concentration in Chinese market. For the CR coefficient, the CR_1 value is between 0.4 and 0.8, the CR_2 value increases from 0.76 in 2006 to 0.94 in 2018, the CR_3 value is basically above 0.95, the CR_4 value remains around 0.99, the CR_5 value is close to 1, which is close to CR_4 . The relatively high values of HHI index and CR index indicate that soybean imports in China are highly dependent on the major exporting countries that rank in leading positions. In addition, the relatively stable CR values and HHI values indicate that China has continuously increased its soybean import with a high pace from 2006 to 2018, and meanwhile a huge change is observed in the structure of soybean source countries. The market monopoly power of CR1 that is imposed by Brazil is strengthened, and the remaining market share is both competitive and dispersed. However, the competition forces that are nourished by that diversification have not yet formed an effective counterbalance against the monopoly market.

2. AN ECONOMIC ANALYSIS OF SOYBEAN MARKET PRICING AND WELFARE CHANGES

According the previous analysis, it can be observed that soybean import market is occupied by three oligopoly suppliers and multiple competitive suppliers. This paper clarifies the market structure of soybean supply in the international market before carrying out an economic analysis on the price fluctuation and welfare change of soybean market, so as to provide some suggestions in alleviating the dependence of domestic soybean on the international market and ruling out the existing risks. Suppose TD is the total demand curve of soybean. SC is the total supply curve of soybean of the countries that exclude the United States, Brazil and Argentina. D1 is the total demand that excludes the demand of competitive supplier countries, and then literally D1 is the demand curve of the United States, Brazil and Argentina in total. MR is the marginal income curve of those three countries. They are very competitive in soybean output, grade and price on the international market so that they form an oligopoly position due to abundant land resources. The marginal cost curve of the United States, Brazil and Argentina is MC, which is lower than that of competitive supplier countries.

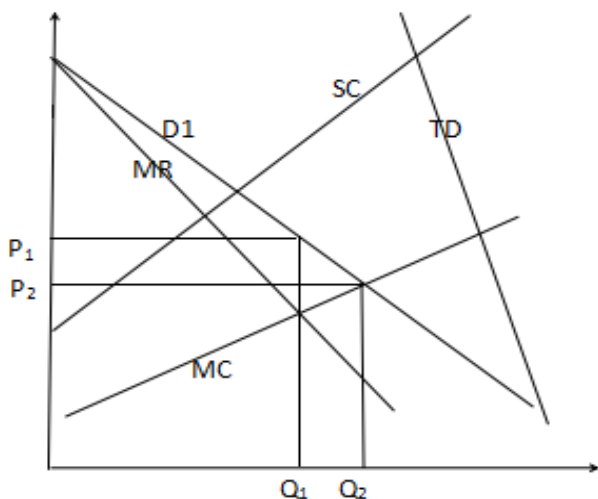


Figure 5
Pricing Model of International Soybean Market

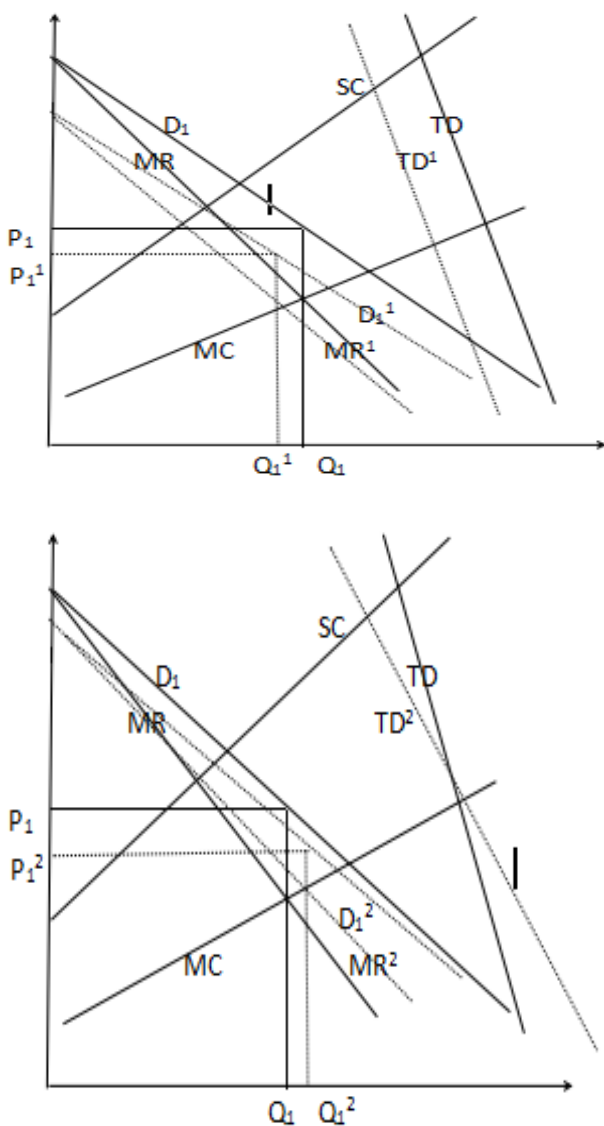


Figure 6
Demand side adjustment and welfare change

Countries such as the United States, Brazil and Argentina have obtained oligopoly in the soybean export market. In order to obtain monopoly benefits, they can use their oligopoly to reach a tacit agreement on soybean price. As a result, the pricing will be optimized at the intersection of the marginal revenue MR and the marginal cost MC, and its corresponding price and export volume are P_1 and Q_1 respectively. In pace with the augmentation of demand, the demand elasticity of the residual demand curve D_1 will become weaker. When the monopoly countries raise the price, their sales volume only decreases slightly. However, their welfare will enjoy an increase. The more motivation they possess to raise the price, more market power they can wield. If the three countries do not form oligopoly in the soybean export market, the whole international soybean market is thus fairly competitive. Under this circumstance, the soybean price and the export volume of the three oligopoly countries are P_2 and Q_2 respectively, and the supply curve of the whole international soybean market is a straight line inclined to the upper right.

As the analysis of Figure 5 suggests, because the international soybean import and export market is an oligopoly market and it improves welfare through its oligopoly, which results in a great welfare loss in the China-based consumer market. How to reduce the welfare loss of consumers in the oligopoly market? It can be started from two aspects: the demand side and the supply side.

From the demand side, the first solution is to reduce the domestic demand for soybeans in the international market. As shown on the left chart of Figure 6, when the original demand curve moves from TD to TD^1 , the oligopoly demand curve changes from D_1 to D_1^1 . The increase of demand elasticity reduces the market forces of the oligopoly side. When the supplier with oligopoly power sets the price and export volumes at the intersection of MR^1 and MC, the market price falls from P_1 to P_1^1 , the export decreases from Q_1 to Q_1^1 , and the price of soybean import and export markets and export volume will decrease. However, due to the increase of the elasticity of the demand curve of oligopoly, its market forces decrease, and consumer market welfare is improved. The second solution is to improve the demand elasticity of soybean in the international market. As shown on the right chart of figure 5, the original demand curve TD elasticity is small. If TD elasticity is increased, its demand curve becomes TD^2 . Under the condition that the soybean supply of other countries remains unchanged, the elasticity of the remaining demand curve D_1^2 of the monopoly side will also increase. As a result, the market price decreases from P_1 to P_1^2 , and the export volume increases from Q_1 to Q_1^2 . The market forces of oligopoly are significantly reduced, consumers can buy more soybeans in the international market at lower prices, and their consumer welfare is increased.

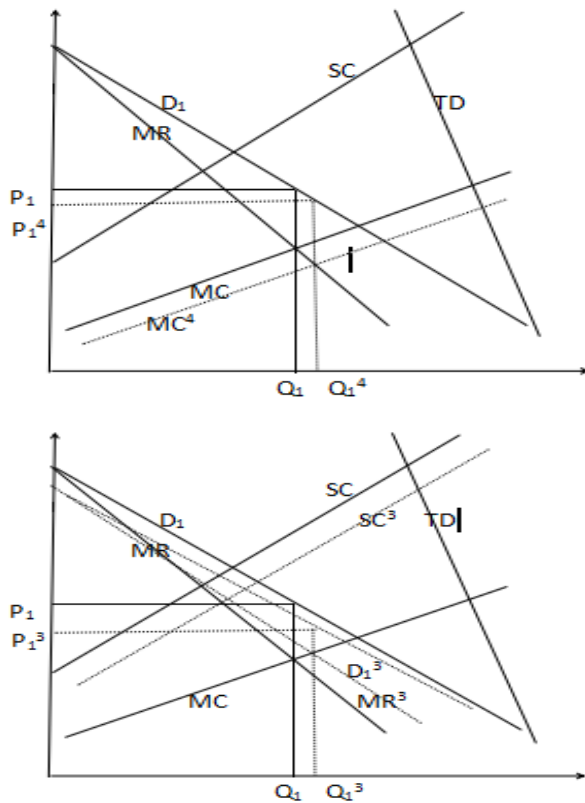


Figure 7
Supply-side adjustment and welfare changes

Given the supply side, the first method is to improve the soybean supply capacity of competitive countries. As shown on the left chart of Figure 7, SC moves to the right to SC³. When the total demand is constant, the demand of the oligopoly supplier decreases, the demand curve changes from D₁ to D₁³, and the elasticity of demand curve increases. At this time, the market forces of the oligopoly supplier decrease, the market price drops from P₁ to P₁³, and the export volume increases from Q₁ to Q₁³. Consumers can buy more soybeans in the international market at lower prices, and their consumer welfare is increased. The second method is to reduce the marginal cost curve of the oligopoly. As shown on the right chart of Figure 6, when the total demand and the supply of competitive countries are constant, the prices established by the intersection of marginal cost MC⁴ and marginal income curve MR are P₁⁴ and Q₁⁴. Although the demand curve remains unchanged, the intersection of MR and MC⁴ is in the area where the demand curve is more elastic and the market forces of the oligopoly decrease significantly. Consumers can buy more soybeans in the international market at lower prices, and consumer welfare is increased.

3. SUGGESTIONS ON REDUCING THE WELFARE LOSS OF SOYBEAN IMPORT

The above analysis and conclusions are of great significance for China to ensure the safety of soybean

imports and improve the welfare of consumers. To ensure the security of soybean demand and improve import welfare, China can start by reducing the demand of the international market, improving the elasticity of demand, and increasing the supply of the international market.

3.1 Increase the Supply Capacity of Domestic Soybeans and Reduce the Dependence on the International Market

The strategic goal of China's food security is "basic self-sufficiency of grain and absolute safety of rations". China's grain consumption is dominated by grain, and the grain varieties mainly supported by China's grain policy are also the three staple grains of cereal, namely, rice, wheat, and corn. Due to the current grain security policy in China, the safety of the domestic grain supply is guaranteed, but excessive intervention in the grain market leads to grain oversupply and high grain inventory. The excessive supply of grain also reduces the supply capacity of non-cereals with soybean as the main variety, and widens the gap between supply and demand in the domestic market, and increases the dependence on the international market. Therefore, more imports are needed to meet the demand for non-cereals such as soybeans in the domestic market, which results in over-dependence of varieties such as soybeans on the international market. At present, in the domestic planting structure, there is a competitive relationship among corn, soybean, and paddy. Under the background of supply-side reform, the temporary storage policy of corn is coming to an end, and in the implementation of the subsequent price-fixing separation policy, the price comparison between corn and soybean has been reduced. However, in terms of the current corn and soybean subsidy amount, as well as the price support policy of rice, the benefit of corn and rice planting is still much higher than that of soybean planting, and the scale of soybean planting to replace corn is limited, which means the growth of domestic soybean supply capacity is limited. Therefore, when ensuring the supply of soybean, for the implementation of grain support policy, the links between the prices of different grain varieties should be taken into consideration, and the focus should be put on balancing planting benefits. The subsidy is determined according to the price comparison of soybean, rice, and corn, to ensure the stability of farmers' planting income and reduce the potential risk of benefit, to ensure the supply of soybean to a certain extent.

3.2 Reduce the Demand for Soybeans and the Dependence on the International Market

The huge demand for soybeans in our country is mainly due to the increase in domestic demand for meat, and soybean meal is the most important protein raw material in domestic fodder. High-protein fodder is the main feed for pigs, broilers, and laying hens in China, which increases the huge demand for soybeans. Under the current situation

of the international oligopoly supply of soybean, domestic research on low-protein fodder technology should be strengthened. First, the amount of soybean meal per feed grain can be reduced, and second, other miscellaneous meals with lower protein content can be increased, thus greatly reducing the rigid demand for fodder for soybean meal and alleviating the impact of tight supply and the high price of soybean.

3.3 Improve the Reserve Capacity of Soybeans

China's domestic soybean supply is insufficient, and its dependence on foreign countries is increasing. In this case, the strategic reserve of soybeans should be increased for a rainy day. Under the condition that domestic dependence on soybean is so high, soybean reserves are seriously insufficient compared with rice, wheat, corn, and other varieties. On the one hand, this will lead to the increased predictability of China's soybean purchase, providing a way for foreign speculators to guess the purchasing opportunity by understanding the domestic inventory situation, and then raise the price in advance; on the other hand, this will make our country lose the initiative to choose the purchase time, and we have to make a large number of purchases when the price is high. Domestic price support policies for major grain varieties: rice, wheat, and corn make their supply far exceed the demand and their storage capacity is huge. Under the current background of corn de-stocking, the stock of corn will drop significantly, and the subsequent implementation of the policy of rice and wheat de-stocking will release a large amount of stock capacity. The released inventory capacity can be partially used for storing soybeans, thus reducing the rigid demand for imported soybeans in the domestic market, making soybean demand more flexible, and improving the bargaining power of domestic soybean imports.

3.4 Actively Arrange Soybean Imports in "The Belt and Road Initiative" Countries

Under "the belt and road initiative", the trade relations among Europe, Asia, and Africa will be further strengthened. Moreover, "the belt and road initiative" countries have great agricultural development potential and are an important choice for China to import soybeans, especially in the Black Sea and other regions, where the soybean production potential has been suppressed. However, every country is born with the endowment of land resources. At present, the three countries with oligopoly status in the world are very competitive in the world market in terms of soybean yield, grade, and price. Other countries' soybean production costs, including transportation costs, are hard to compete with them, and simply increasing import diversification will not necessarily improve a country's

welfare. Therefore, in the layout of "the belt and road initiative" importing countries, we should encourage domestic agricultural enterprises to go abroad, strengthen investment in agriculture in these countries and reduce the marginal cost and transportation cost of soybean supply, so as to establish comparative competitiveness with major exporting countries and realize the economy of import in these countries. By strengthening soybean imports in these regions, new market opportunities will be given to these potential soybean producing areas, increasing the diversification of global soybean supply sources, reducing the structural concentration of China's soybean imports, reducing the dependence on major source countries for soybean imports, and improving the safety of China's soybean imports.

3.5 Strengthen the Cooperation With Major Supplying Countries

Under the current situation of global soybean production layout, the long-term trend of China's soybean relying on global supply, especially the main source countries, is irreversible in the short term. Therefore, we should further strengthen the cooperation with major soybean-producing countries such as Brazil and the United States; besides, the major soybean exporting countries in South America, such as Brazil, Argentina, Uruguay, and other countries, have a strong capacity to increase soybean production, but the imperfect infrastructure such as transportation hinders their soybean production and export. As a result, measures such as direct investment can be taken to promote other countries in the Americas with soybean production potential to strengthen soybean production capacity, such as Argentina, Uruguay, Chile, and so on. Through this approach, the marginal cost of soybean supply can be reduced; and we can train more soybean importing countries to form a competitive relationship with the main source countries, which is conducive to the diversification of China's soybean imports and reduce import risks.

4. CONCLUSION

Under the changes of climate, transportation and international relations, China's soybean import should not only consider the risk of trade uncertainty, but also pay attention to the stability of market supply capacity of exporting countries. Therefore, while expanding diversified market supply, China also needs to maintain stable supply cooperation with the South American market. If we want to fundamentally change the import dependence, we need to change the consumption behavior and feeding mode of residents, which are difficult to change in a short time.

REFERENCES

- Fu, L. B., Zhong, F. N., & Xu, Z. G. (2001). China's grain import dependence and its impact on food security. *Management World*, (03), 135-140.
- Guo, T. B., Wang, Y. F., & Hao, Q. S. (2013). Empirical analysis on influencing factors of soybean import in China. *Journal of Agrotechnical Economy*, (11), 103-111.
- Lin, D. Y., Zhu, J., & Wu, G. S. (2014). Whether seasonal factors affect soybean import market pattern in China: Theoretical analysis and empirical test based on extended H-O model. *International Trade Issues*, (03), 44-51.
- Ma, S. Z., & Wang, J. (2012). China's grain import trade has a "big power effect": Based on the analysis of soybean import market power. *Journal of Agricultural Economics*, 33(09), 24-32+110.
- Si, W., & Zhang, M. (2013). China's soybean import market: competitive structure and market force. *Chinese Rural Economy*, (08), 29-39.
- Xia, P., & Sun, J. M. (2016). Study on the impact of import price fluctuation risk on China's soybean import source distribution. *International Trade Issues*, (02), 50-62.
- Xu, X. G. (2013). Soybean import record and China's food security. *Modern Economic Research*, (10), 58-62.
- Zhou, H. Q., & Li, Z. X. (2010). *Food economics*. Science Press.