

How Does International Food Trade Contribute to National Food Security in the Russia-Ukraine Conflict

Zhu Xinru, Pan Quanfu*

College of Economics and Management, Heilongjiang Bayi Agricultural University, Daqing, China

**Corresponding author: Pan Quanfu: 66142484@qq.com*

Keywords: National food security; International food trade; Russia-Ukraine conflict

Abstract: As a country with a large population, China has always attached great importance to the development of the primary industry. However, the outbreak of the Russia-Ukraine conflict has further increased the impact on the global food market. The international food trade is experiencing unprecedented changes in a century, and China's food security situation is extremely grim. Food security is an important basis for national security. Problems in food supply will inevitably affect other aspects of society and have a negative impact on the economic situation and global development. The purpose of this paper is to analyze the current situation of China's international grain trade, combine with open data, analyze the challenges faced by international grain trade, and make contributions to China's national food security.

1. Introduction

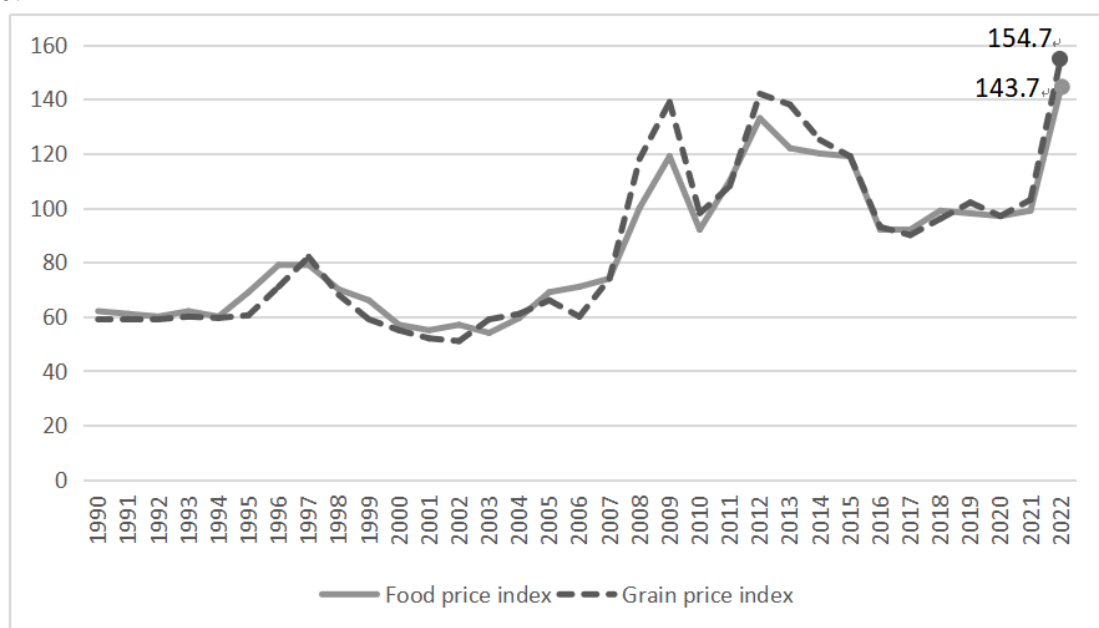
As a country with a large population in the world, China has always regarded food security as an important basis for national security. In the Fourteenth Five-Year Plan for the National Economic and Social Development of the People's Republic of China and the Outline of the Long-term Goals for 2035, China has listed it at the top of the three security strategies of "food, energy resources and financial security"[1]. At present, China's food security situation is at the best time in history. In 2022, the per capita share of grain will reach 483 kg, 2.3 times that of 209 kg when the People's Republic of China was founded in 1949, far exceeding the international food security standard line of 400 kg per capita[2]. The high level of food security capability not only comes from the increasing domestic output of agricultural products such as grain, but also benefits from the increasing utilization of the world food market. During the period from 2001 to 2020, China's grain imports increased from 17.476 million tons to 14.3 billion tons, with an average annual growth rate of 11.7%, accounting for 21.3% of China's total grain output from 3.9%, and its share in the total world grain trade also increased from 4.5% to 28.4%[3]. Russia and Ukraine, known as the "granary of the world", play an important role in the world agricultural materials and food market. In 2020, the exports of wheat, barley, corn and sunflower seed oil of the two countries accounted for 27.9%, 26.4%, 15.7% and 64.5% of the total global exports, respectively, of which more than 30% of the wheat imports of about 50 countries and regions in the world came from these two countries[4]. The 2020 "Central No. 1" document stressed that ensuring food security has always been the top priority of governance. In fact, the re-emphasis on food security in the "No. 1 Document" is not only the historical continuation of the

policy, but also the practical needs of the year when poverty alleviation and a well-off society in an all-round way end [5].

2. Current situation of international grain trade

2.1 Global food prices fluctuate violently

The COVID-19 has led to high international food prices in the past two years, and the war between Russia and Ukraine has exacerbated the continuous rise of food prices. Since the outbreak of the COVID-19, global food supply has declined, labor shortages have occurred, and world food prices have risen [1]. Since June 2020, the fluctuation of global food prices has been increasing. By 2022, the FAO food price index was 143.7 points, reaching the highest point since the index was established in 1990.



Data source: China Grain Network

Figure 1: FAO Food Price Index

In addition, COVID-19 variants and supply chain side issues are also very difficult. In particular, due to its large population base, China has been a major importer of grain for many years. Inflation and the instability of transportation caused by the epidemic have led to a large fluctuation in the national grain price in the past two years, and the national food security has been damaged.

2.2 Global food supply is impacted

According to the survey of the International Food Policy Research Institute (IFPRI), after the Russian-Uzbekistan crisis, the proportion of global food restricted trade (in calories) has increased significantly. Now, this proportion has reached 17%, comparable to the proportion of the food and energy crisis in 2007-2008.

Table 1 shows that since the outbreak of the Russia-Ukraine conflict in February 2022, by the 16th week of 2022, the number of countries imposing export restrictions on food has increased from 3 to 23. Due to the escalation of the war, Ukraine is facing the possibility of increasing demand and decreasing supply. It has imposed export license restrictions on basic products, such as wheat, corn, sunflower seeds and other grains, and buckwheat, rye, millet, salt, beef, etc., which has brought a

heavy blow to many Middle East and African countries that rely on Ukrainian food, such as Yemen, Afghanistan, Syria, Ethiopia, etc. As shown in Figure 2, due to supply concerns, wheat led the rise for four consecutive months, with the CBOT wheat price rising to 1363.5 cents/bushel, a record high, and corn and soybean futures prices reaching 824.5 cents/bushel and 1784 cents/bushel respectively. See Table 1 for details.

Table 1: Rising and falling trend of international agricultural products in 2022

Breed	February 24,2022	February 23,2023	Rise and fall		Period peak	
CBOT wheat	932.75	751.25	-19%	March 8th	1363.5	Set a record
CBOT corn	686.25	660.0	-4%	April 29th	824.5	10-year high
CBOT rice	15.445	17.0	10%	December 27th	18.53	2-year high
CBOT soybean	1652.75	1527.5	-7%	June 9th	1784	10-year high

2.3 The poor information of the people on food trade has an impact on social stability

At present, the international trade of grain is becoming more frequent, the proportion of primary industry is decreasing, and the agricultural population is decreasing. China's food trade security cannot be ignored. But many Chinese believe that there will be no shortage of food in the 21st century, which gives rise to doubts about the importance of food security. More and more people begin to ignore agriculture and agriculture. This has led to people's subjective neglect of food production and holdings, while food production is relatively open and transparent due to its proximity and multiple access channels; However, ordinary people do not know about the information about international food trade, and even the idea that imports are not available will appear, which is even more serious after the COVID-19. The superposition of the two will inevitably lead to people's skepticism about the import volume of international food trade, and the frequent rush buying events in various places after the emergency are also related to this, which has caused a significant impact on national food security and social production stability.

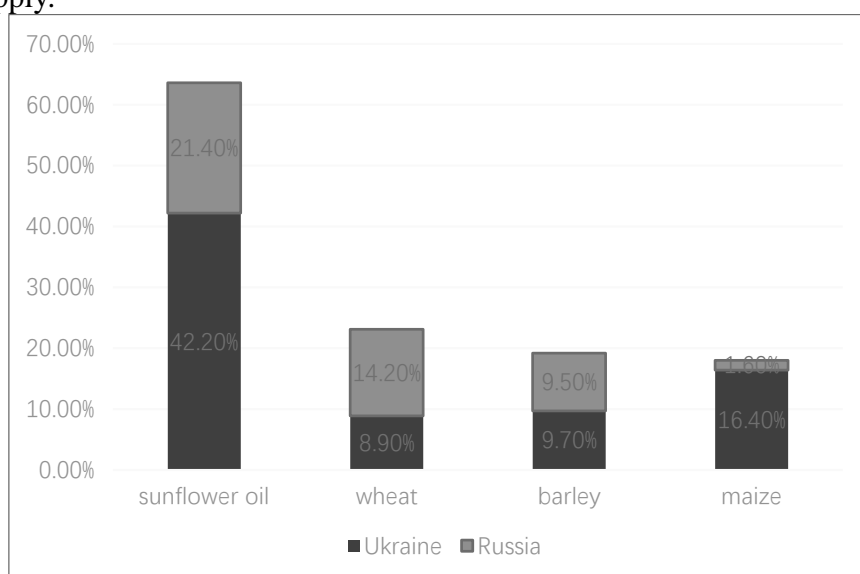
3. Challenges faced by international food trade

3.1 The COVID-19 has led to large fluctuations in food prices

There are many reasons for this phenomenon. First, with the development of the epidemic and the continuous changes of the epidemic prevention and control policies in various countries and regions, the world is faced with problems such as stagnant population flow, labor shortage, delayed food supply, etc., and the seasonal and cyclical changes of agricultural products are destroyed, and global food security is facing challenges. Secondly, the traffic congestion, food procurement panic, employment difficulties caused by the epidemic prevention measures of various countries and the reduction of consumer purchasing power caused by unemployment may damage the food supply chain, leading to the shortage of food and the rise of international food prices. Third, after the outbreak of the epidemic, all countries in a position to do so have increased the detection of food imported from the epidemic area, which has greatly affected the overall allocation of food and thus increased the transaction costs of international trade. Fourth, the rise of trade protectionism policy. During the epidemic, at least 27 countries implemented food export bans, which made the global food supply and demand more tense and the food price increased. Fifth, the information of the food industry is not open and transparent enough, especially the sensitive data such as the quantity of imported grain, which is basically unavailable to the general public, which has led to four food rumors, resulting in a scramble for food events, and laying a deeper shadow on the extreme panic caused by the epidemic.

3.2 The Russia-Ukraine conflict caused the food supply to be blocked

Ukraine and Russia are the world's top five exporters of wheat and corn. The two countries occupy a very high position in the international food market, especially Ukraine, which is rich in the name of "European granary", has three quarters of the world's fertile black land resources, and is a good food production base and export processing base. As shown in Figure 1, the wheat output of Ukraine and Russia accounted for 30% of the world's wheat output from 21 to 2022, and the export volume of sunflower seed oil from the two countries accounted for about 80% of the world's export volume., As for corn, Ukraine expects to export 33 million tons of corn to the world during 2022-2023, which will account for 16.4% of the total world corn trade, while Russia provides 4.5 million tons of corn to the world, making Ukraine and Russia share 20% of the world food market. In addition, Russia, Ukraine and other countries are also the two largest countries in the world, providing more than 1/3 of the world's total supply.



Data source: FAO /Our World in Data

Figure 2: Promotion of Russia and Ukraine in global grain exports

Since the Russia-Ukraine conflict lasted for more than a year, although the market's impact on the Russia-Ukraine conflict has gradually digested and the fluctuation of food prices has gradually slowed down, the risks in the international food market still exist.

3.3 The rise of food trade protectionism has led to import and export restrictions

The contraction of agricultural products will infect each other and cause a transmission effect, which will make the panic of the whole agricultural market more serious, thus triggering trade protectionism of food and making food unable to export. Middle - and low-income regions such as Africa, the Middle East and Southeast Asia have been dependent on wheat supplied by Russia and Ukraine, and have been hit hardest. Some regions have also experienced food shortages. The conflict between the two sides will make the wheat importing countries more vulnerable and rely on the relatively cheap wheat and barley imported from Ukraine and Russia for a long time to meet the needs of their own countries. Countries have begun to restrict exports, strive to protect themselves, and do everything possible to store their own food to cope with the fact that the global food supply chain is being cut off, but it will trigger the rise of food trade protectionism, which is bound to create a vicious circle. Under the current situation, there is a great threat to developing countries, especially in the

context of soaring food prices, especially for the poorest families who live hard, suffer from hunger and spend most of their income on food.

3.4 The instability of the international exchange rate causes great pressure on international food trade

Since the outbreak of the COVID-19, the international market has experienced huge fluctuations, the most obvious one being the exchange rate. As the epidemic has led to fluctuations in the economies of various countries, the inflation rate has increased significantly, and the inflation rates of various countries are obviously different. The depreciation rate of Brazil's currency is close to 15%, and that of Türkiye is close to 30%. Since the outbreak of the epidemic, the exchange rate of the US dollar against the RMB has appreciated as a whole (see Figure 2). However, during this period, the appreciation and depreciation have alternated, and the two-way fluctuation characteristics are increasingly obvious. This has led to many unstable factors in the original international grain trade. In addition to the floating and uncertain factors in the supply chain, the international grain trade pressure at this stage is huge, and many practitioners are also jumpy. A little carelessness may lead to industrial disputes. Therefore, it is necessary to take good and conservative measures for international trade in grain during the normalization of epidemic prevention and control, so as to cope with it freely.

4. China's Countermeasures to Safeguard National Food Security

4.1 Stabilize domestic grain production and make public grain information

For China, a country with a large population, it is very necessary to maintain a high self-sufficiency rate. To this end, we need to firmly grasp the Chinese people's own rations and firmly hold the "Chinese rice bowl". First of all, China has always adhered to the main strategy of grain security, strengthened farmers' enthusiasm for grain production, improved farmers' awareness of production and grain sales, and ensured farmers' grain sales safety; Secondly, increase the grain yield per mu, improve the scientific and technological level and production efficiency of agricultural machinery, enhance the degree of mechanization, and improve the maturity of crops; Third, to optimize the structure of grain production, especially the crops that continue to be sold in the market, we should reasonably plan and arrange production. So that we can truly guard and manage the "granary of the world". Secondly, it will play a positive role in maintaining social stability to a great extent if the public can accurately understand the quantity of national food imports during the epidemic prevention and control period, and still have confidence in national food security under the special circumstances of crop failure and unstable epidemic situation.

4.2 Maintain good international food trade and take the initiative in the market

For agricultural and sideline products with huge rigid demand, such as vegetables, melons and fruits, we should import them as soon as possible when the international market price is still relatively low and the exchange rate is relatively stable. For bulk agricultural products such as oil, meat and grain, which have a gap between supply and demand in China in recent years, we should increase the procurement efforts. At the same time, it is necessary to study and judge the changes in the demand for major agricultural products in China and the foreign supply in a timely, scientific and accurate manner, and firmly grasp the initiative and leading power of the market. International trade in grain is an important part that cannot be ignored for a large country with a large population. As a major food importer in the world, maintaining a stable import target and volume is an important prerequisite for ensuring social stability and security. For this reason, only we can raise the awareness of national

food security, stabilize the import channel and volume, strengthen the gap of grain exchange rate, and actively play a strong auxiliary role in the import of grain, Promote the export of surplus agricultural and sideline products in China, form a good import and export trade model, firmly grasp the market initiative, and contribute to the consolidation of national food security.

4.3 Actively respond to trade restrictions and promote trade development and market stability

First of all, negotiations and consultations should be carried out as soon as possible through international institutions and diplomatic channels on the issue of trade restrictions imposed by relevant countries or regions; Secondly, we should scientifically analyze the new technical barriers to trade of agricultural products caused by the epidemic and strengthen the import capacity. China should adopt the main strategy of active export of surplus agricultural and sideline products, mainly lack of active import of crops, improve the reasonable trade ratio between import and export, and increase the stability of grain trade. Finally, we should prepare for the international agricultural futures market as soon as possible, and take the initiative to deal with the risk of possible price rises and price shocks.

4.4 Understand the logic of exchange rate and accurately enter the market

Although there are many unstable factors in the international exchange rate in the short term, its development trend is still traceable. Especially, some major grain exporting countries have always held a supportive attitude towards the international trade of grain because their domestic economy is too dependent on exports. The governments of such countries have also taken measures to actively respond to the changes in exchange rates [4]. Relatively speaking, during the period of strong government intervention, its domestic exchange rate will have a period of stability, and relevant practitioners should seize this opportunity to implement precise policies and procurement, improve the accuracy of international trade entry, and solve the unstable factors brought by the exchange rate to international food trade to the greatest extent [5].

5. Conclusion

Food security is the foundation of national stability. At present, China's food security system has been basically formed. While realizing the basic policy of "19 consecutive harvests", domestic food production also provides new impetus for properly adjusting the structural supply and demand gap, optimizing the distribution of agricultural products trade, supporting enterprises to integrate into the global agricultural supply chain, and establishing a stable and reliable international food security system with appropriate imports. However, with the frequent occurrence of external disturbances such as current trade frictions, climate deterioration and local wars, especially the situation in Russia and Ukraine, which has touched the sensitive nerves of the global food market, the probability of food supply chain interruption and market disorder in the world has further increased. Therefore, it is of great practical significance and strategic value to clarify the possible "breakpoints", potential "impact points" and internal "pressure points" in the food supply, study the resilience of the global food supply chain under local conflicts, build a stable and reliable food supply system, and realize the full use of the two resources of the two markets to ensure China's food security.

References

- [1] United Nations: *The world is on the verge of the worst food crisis in at least 50 years* [EB/OL], <https://aijahoo.baidu.com/s?id=1673985430326044684&wfr-spider&for=pc>.
- [2] Yang Jing. *Overview of China's grain market in 2020* [N]. *Grain and oil market report*, 2021-02-20

- [3] Bin is stable in law China Rural Development Report 2020 released [EB/OL]. China Social Science Network, http://www.cssn.cn/xnc/202008/t20200819_5171677.shtml.
- [4] Chen Zhigang, Zhan Yue, Zhang Yumei, Fan Shenggen. Impact of the COVID-19 on global food security and countermeasures [J]. *China Rural Economy*, 2020 (05): 2-12
- [5] Fan Shenggen, Gao Haixiu. Rethinking the global agricultural food system under the COVID-19 [J]. *Journal of Huazhong Agricultural University (Social Science Edition)*, 2020 (05): 1-8+168. DOI: 10.13300/j.cnki.hnwkxb.2020.05.001