

Study on the influence of host country political risk on China's agricultural OFDI location choice

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Abstract: The ICRG index was used to measure the political risk of 140 major countries and regions in the world. On this basis, the influence of political risk of host country on the location choice of China's agricultural OFDI was analyzed theoretically and empirically.

1. Introduction

In the context of the increasingly sharp contradiction between the supply of grain and other important agricultural products and the carrying capacity of resources and the environment, agriculture "going out" is imperative. This article will conduct an in-depth study on the location selection of China's agricultural OFDI based on the perspective of the host country's political risks. Revealing the evolution of China's agricultural OFDI location layout rule and mechanism at the same time, further speeding up the implementation of the strategy of "going out" of agriculture and ensuring the steady supply of food is enough to provide scientific reference basis and decision support.

2. Quantitative measurement and analysis of political risks in major countries and regions

2.1 Measurement method

Referring to [1], the International Country Risk Guide (ICRG) released by the Political Risk Service Group of the United States was used to calculate the political risk of major countries and regions in the world. The scores of the 12 indicators of political risk were summed as follows:

$$HCPR_j = \sum X_{ij} \text{ (Among them, } i=1,2,\dots,12; j=1,2,\dots,140) \text{ (1)}$$

In formula (1), $HCPR_j$ represents the political risk in country J . The higher the $HCPR$, the lower the political risk it represents.

2.2 Calculation results and analysis

Table 1 Distribution and mean value of political risk of OFDI location choice in China's agriculture

The level of political risk	Location distribution	Average political risk index
very high	11.76%	48.05
high	30.39%	55.25
medium	21.57%	64.32
low	18.63%	74.41
very low	10.78%	84.91

Analysis of China's investment in the above-mentioned risk-level countries or regions, the analysis results are shown in Table 3. Among the 54 countries or regions with "very high" or "high" political risks, China has invested in 43 countries, accounting for 42.2% of the regional distribution of China's agricultural OFDI. Of the 35 countries or regions with "medium" political risk, 22 were invested by China, with the proportion falling to 21.6%. Among the 50 countries or regions with

"low" or "very low" political risk, China has invested in 30 of them, accounting for 29.4%. According to the data in Table 1, China's agricultural OFDI is more inclined to invest in countries and regions with high political risk.

3. Theoretical analysis of the influence of host country political risk on China's agricultural OFDI location choice

It is generally believed that political risk means high cost, which is not conducive to the maximization of enterprises' foreign investment profits, and thus it hinders agricultural enterprises from investing in countries or regions with high political risk.

However, the higher political risk also effectively inhibits the investment of other MNCs and reduces the competitive pressure. Moreover, host countries with high political risks often contain a large amount of underdeveloped agricultural resources such as land, which may bring higher risk premium for investors. It is attractive to aggressive or risk-averse investors and may attract companies to invest.

In conclusion, the impact of political risk on agricultural OFDI location choice is uncertain, and further empirical tests are needed.

4. Empirical analysis of the impact of political risk in host country on China's agricultural OFDI location choice

4.1 Model construction

This paper adopts the Probit model to study the impact of China's agricultural OFDI location choice. The Probit model is a generalized linear model. The explained variables are binary values of 0 and 1. The probability of an event depends on the explanatory variable, that is, the probability of the explained variable being 1 is a function of the explanatory variable. Through analysis, we can get the influence mechanism of each explanatory variable on the probability of an event.

When this model is used to estimate the location choice of Chinese agricultural companies to invest abroad, the explained variable Y indicates whether there is agricultural investment in a location, which is 1 if there is investment in the location, and 0 if there is no investment. Suppose enterprise h ($h \in A = \{h=1,2,\dots,m\}$) chooses investment location among candidate host countries i ($i \in B = \{i=1,2,\dots,n\}$). If enterprise h determines country i as the investment country among the many choices, it indicates that the investment benefit in other locations is less than the investment benefit in country i , and its investment probability is expressed as:

$$\Phi_i = \text{Prob}(R_{hi} > R_{hb}), h \in A; i, b \in B \text{ and } i \neq b \quad (2)$$

In formula (2), A represents the set of enterprises, B represents the set of host countries, and R_{hi} and R_{hb} respectively represent the benefit function of h firm's investment in country i and country b . The investment benefit depends on the location factors of each host country, that is, the probability of enterprise h investing in country i can also be expressed as a function of location factors of the candidate countries for China's agricultural foreign investment.

Based on the completeness and availability of data, the dependent variable selected in this article is a binary variable based on whether there are investment companies in the host country for Chinese agriculture. Refer to the processing method of [2] and [3], 1 means that Chinese agriculture has set up enterprises in a certain country, and 0 means that it has not set up enterprises. $OFDI_{ij}$ indicates that if Chinese agro-related enterprise h has ever had OFDI behavior in host country i , it will be 1 if it has, otherwise it will be 0. In this paper, whether China has agricultural investment in the host country is selected as the explained variable, that is, the probability of China choosing agricultural investment in country i is:

$$P(Y_i=1) = \text{Prob}\{f(X_i) > f(X_b)\}, i, b \in B \text{ and } i \neq b \quad (3)$$

Based on the above analysis, the Probit model for the location selection of China's agricultural OFDI is as follows:

$$P_i = \lambda_0 + \lambda_1 HCPR_i + \lambda_2 V_i + \eta_i, i \in B \quad (4)$$

In formula (3), $P_i = P(Y_i = 1)$ means that the agricultural investment of Chinese enterprises in country i is greater than 0, and the opposite indicates that the country is not selected as an agricultural investment location. In formula (4), represents a constant term, and the investment location factor is divided into two parts: key variables and control variables. The key variable is the political risk of the host country (HCPR), in addition, represents the random disturbance term. represents the control variables of the influencing factors of location selection. According to the reading literature, the selected control variables include: host country natural resource endowment (NR), host country market size (GDP), agricultural foreign investment openness (AFD), agricultural import and export dependence (ATD), distance from the host country (DIS), and economic growth potential (GGDP).

4.2 Sample selection, data sources and data processing

In order to measure the impact of the above variables on China's agricultural OFDI location choice, 117 countries and regions as of 2017 were selected as research samples in this paper. The measurement indexes and data sources of each variable are shown in Table 2. Since the foreign direct investment decision mainly refers to the investment environment of the previous period, the investment location chooses the data of 2018.

Table 2 Measurement indicators and data sources of main variables affecting investment location

Variable name	Code name	Data source
Investment location	OFDI _{ij}	List of overseas invested enterprises (institutions)
Host country political risk	HCPR	ICRG database
Natural resource endowment	NR	FAO/ World Bank
Market size	GDP	UN Database
Degree of foreign investment openness	AFD	Unctadstat.unctad.org
Depend on import and export of agricultural products	ATD	UN Comtrade
Distance from host country	DIS	CEPII: The GeoDsit database
Economic growth potential	GGDP	World Bank

Table 3 Descriptive analysis

Variable	Mean	Median	Max	Min	S.d.
HCPR	64.44	62.96	87.63	33.83	12.41
NR	0.23	0.16	1.64	0.00	0.26
GDP	4916.91	756.20	195194.2	13.50	17894.51
AFD	0.01	0.02	0.61	-4.04	0.41
ATD	0.04	0.02	0.36	0.000	0.06
DIS	9175.68	8265.17	19297.47	809.54	3915.10
GGDP	0.68	0.04	0.27	-0.16	0.036

Descriptive analysis of relevant data in this paper is shown in Table 3. Among the 7 independent variables selected in this paper, some of them have poor data stability or large data dimension, so they are processed by logarithm. On the basis of not changing the data nature and relative size relationship, the data dimension is reduced and the heteroscedasticity problem is eliminated. For example, the data of political risk of host country (HCPR) and agricultural import and export dependence (ATD) in independent variables in this paper have poor stability. However, the three variables of natural resource endowment of the host country (NR), market size of the host country (GDP) and distance from the host country (DIS) have higher data dimensions. After logarithmic processing, more stable

variable data can be obtained, and the effect of model regression is better. For the proportion data variable of the degree of openness to foreign capital (AFD), the original data are used to participate in the regression.

4.3 Correlation test

In order to ensure the true and accurate degree of regression results, firstly, serious multicollinearity among independent variables should be excluded. The independent variables in this paper may have certain economic connections, so in order to judge the severity of multicollinearity among variables, correlation tests should be carried out on the 7 independent variables before model regression, and the test results are shown in Table 4.

Table 4 Correlation test results

Variable	lnHCPR	lnNR	lnGDP	AFD	lnATD	Indist	GGDP
lnHCPR	1.000						
lnNR	-0.128	1.000					
lnGDP	0.399***	-0.089	1.000				
AFD	0.084	0.034	-0.015	1.000			
lnATD	-0.168*	0.032	0.225**	0.051	1.000		
Indist	-0.072	0.187***	-0.239***	-0.056	-0.237***	1.000	
GGDP	-0.005	0.170**	-0.114	0.528***	0.143	-0.092	1.000

Note: ***, ** and * indicate significant at the significance level of 1%, 5% and 10%, respectively.

The correlation coefficients of the 7 independent variables in this paper are relatively low, no more than 0.4, and there is no particularly high correlation. Therefore, there is no serious multicollinearity problem between variables, and Probit test can be carried out.

4.4 Empirical analysis of agricultural OFDI location choice

Probit test analysis is conducted on the samples of China's agricultural OFDI location choice, and the test results are shown in Table 5. The maximum likelihood estimation ratio test has a statistic of -47.962, which is significant at the level of 1%. The goodness of fit is 0.350, indicating that the fitting effect of the Probit test results of the equation is good

Table 5 Probit test results

Variable	Coefficient	S.E.	z
C	-9.673*	6.026	
lnHCPR	-2.140***	1.041	-2.06
lnNR	0.054	0.088	0.62
lnGDP	0.166*	0.107	1.55
AFD	-0.034	0.704	-0.05
lnATD	0.879***	0.190	4.62
Indist	0.282	0.432	0.65
GGDP	-2.575	6.916	-0.37
Pseudo R2 =0.350, Log likelihood=-47.962, Prob>chi2=0.000, N=119			

Note: ***, ** and * indicate significant at the significance level of 1%, 5% and 10%, respectively.

According to the test results in Table 5, the causal relationship between all variables and China's agricultural OFDI location choice can be obtained as follows:

The political risk of the host country has a significant positive effect on the location choice of China's agricultural OFDI. The political risk of the host country is the political risk index and data released by ICRG database, and the regression coefficient with the location choice of China's agricultural OFDI is -2.140, which is significant at the level of 1%. This indicates that the host countries with lower political risk index are preferred for China's agricultural OFDI. The lower the risk index, the higher the political risk, that is, China's agriculture is more inclined to invest in countries or regions with high political risk, which has a significant risk appetite.

Although the increase in political risk will bring better investment costs, it may also bring a higher risk premium to investors, thereby attracting investors from Chinese agricultural enterprises. Studies have shown that higher political risks provide opportunities for Chinese agricultural companies to enter the host country market. In the current tense situation of China's lack of natural resources and the supply of agricultural products is far from meeting the demand, the pace of "going global" of agriculture is accelerated. However, most of the international agricultural resources are divided up by international agricultural capital groups [4]. In order to strive for potential markets and risk premiums, Chinese agricultural foreign investment companies have to seek opportunities in countries with high resource endowments, but backward economic development and high political risks [5].

The results also show that market size (GDP) and agricultural import and export dependence (ATD) have great attraction to China's agricultural OFDI location choice. The market size (ATD) and the level of economic development (GDP) of the host country directly determine the possible return rate of China's agricultural investment in the country, and the increase of its value is helpful to significantly improve the probability of Chinese enterprises' investment in the country."

5. Conclusions and policy recommendations

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In the past two decades, China's agricultural "going global" pace has accelerated, the scale of agricultural OFDI has continued to grow, and the geographical distribution range has also expanded. Due to the long investment cycle and directly related to important sensitive areas such as food security and land management, agricultural OFDI is more likely to be politically concerned than OFDI in other industries, and it is more affected by political risks. Based on the analysis of the development status and location characteristics of China's agricultural OFDI, this paper further uses the "International Country Risk Guidelines Index" (ICRG) to measure the political risks of major countries and regions in the world, and then uses the Probit model ,empirically testing the influence of political risks on the location selection of China's agricultural OFDI.

The research found that: (1) The political risks in the main locations of China's foreign agricultural investment are relatively high. The political risk of China's foreign agricultural investment in countries and regions is 42.2% at the "high" or "very high" level, and less than 30% at the "low" or "very low" level.(2) The political risk of the host country can significantly increase the probability of China's agricultural investment. China's agricultural OFDI started late and focused on seeking agricultural resources. Although higher political risks will increase investment risks and investment costs, it will help Chinese agricultural foreign investors to enter the host country market, obtain local agricultural resources, and obtain high risk premium.

According to the above research conclusions, in order to further accelerate the implementation of agricultural "going global" strategy, promote the sustainable development of agricultural "going global" and ensure the sufficient and stable supply of domestic grain, the following suggestions are put forward:

5.1 Fully assess the investment environment and focus on monitoring political risks in host countries

At present, China's agricultural investment is mostly distributed in countries and regions with higher political risks. It is very necessary to bring political risk into the key object of investment environment, to do a good job in the research work in the early stage of investment, and to comprehensively evaluate the investment environment of the host country including policies, systems and political factors.

5.2 Strengthen investment cooperation with multiple countries to diversify investment risks

From the theoretical and empirical analysis results of this paper, it can be seen that the location choice of China's agricultural overseas investment at present shows significant risk bias. In order to spread the political risk in the existing investment location as much as possible, China should give play to the comparative advantage of agriculture in some areas and strengthen the investment cooperation with other countries. At the same time, we should make full use of our diplomatic advantages, fully understand international political trends, and establish friendly cooperative relations and long-term risk tracking and assessment mechanisms with other countries in combination with international agricultural exchange activities such as agricultural fairs and exhibitions.

5.3 Balance the location of foreign investment to ensure long-term development

It is undeniable that because developed countries have advanced agricultural production technology and rich agricultural management experience, cooperation with them has very important reference significance for the development of China's agriculture. Therefore, from the perspective of future and long-term development, China must view agricultural foreign investment from a strategic perspective, guide agricultural foreign investment enterprises to invest in developed countries, and make up for the deficiency of China's agricultural production technology and management experience, further optimize the risk structure of China's agricultural overseas investment, so as to promote the comprehensive and balanced development of agricultural overseas investment, and ensure the steady growth of China's agricultural overseas market.

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