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ARTICLE

RESEARCH AND DEVELOPMENT ANALYSIS ON THE IMPACT OF GLOBAL FINANCIAL RISKS ON CHINA'S OUTWARD FOREIGN DIRECT INVESTMENT — BASED ON THE EFFECT ANALYSIS OF COUNTRIES ALONG THE BELT AND ROAD

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ABSTRACT

Based on the national financial risk data of 56 countries along the "Belt and Road" in the ICRG published by PRS and the values of 30 provincial-level administrative regions in China from 2003 to 2018, this paper explores the impact of international financial risks on OFDI in countries along the "Belt and Road". After discussion, it is found that various factors of international financial risk have a significant impact on China's OFDI, but there are great differences in the way of impact. (1). The host country's debt repayment ability has a significant positive effect on China's OFDI; (2). The stability of the exchange rate and the ratio of foreign debt to GDP have obvious negative effects on China's OFDI, and there are significant differences between different models in account balance as a percentage of total exports; (3). There is an obvious phenomenon of "adverse selection" in our country's investment in countries along the route, and we are facing relatively high international financial risks. In order to effectively defend against international financial risks faced by OFDI, it is necessary to continue to deepen domestic financial reform and opening up and enhance the ability to respond to international financial risks; Strengthen investment supervision before, during and after the event, and improve the level of financial risk prevention and control of multinational enterprises; Strengthening regional cooperation is conducive to jointly promoting the high-quality development of China's economy. Jointly cope with the huge impact of international financial risks.

KEYWORDS

China's OFDI; Global financial risks; The Belt and Road

1. INTRODUCTION

Since the "Belt and Road", from 2013 to 2021, the total import and export value of China and the countries along the "Belt and Road" increased from 6.46 trillion yuan to 11.6 trillion yuan, an average annual growth of 7.5%, and the proportion of China's total foreign trade value increased from 25% to 29.7% in the same period. The growth rate of imports and exports to countries along the "Belt and Road" reached 23.6%, 2.2 percentage points higher than the overall growth rate. According to the statistics of the 2022 China Outward Direct Investment (OFDI) Statistical Communiqué, in 2021, 5,312 new enterprises invested in China from countries along the Silk Road Economic Belt, a year-on-year increase of 24.9%, accounting for 111% of the number of newly established foreign-invested enterprises in China: the actual investment amount was US$108.3 billion, a year-on-year increase of 33.5%, accounting for 6% of China's actual foreign capital used.

The number of countries along the "Belt and Road" is large, and developing countries are the mainstay, the level of economic development is weak, the ability to resist the global financial crisis is weak, and some of these countries may themselves be the flashpoint of global financial risks, the Southeast Asian financial crisis is an excellent proof. International financial risks are not far away from us, the 2008 global financial crisis that originated in the United States hit the world, so far there are still some countries' economies have not fully recovered, and the European debt crisis that broke out in 2009 has affected some European countries and Asian countries to a greater or lesser extent. In 2020, the United States launched air strikes against Iraq, Syria, and Lebanon, and the Middle East was shrouded in the cloud of war. The escalating war between Russia and Ukraine in 2022. In the dark hour of the global capital market, the unpredictability of the world economy is rising rapidly, and China's investment in the above four countries and neighboring countries will face serious political risks and international financial dangers. Affected by the political and economic situation at home and abroad, the economic development of some countries along the Belt and Road has fluctuated greatly, economic uncertainty is rising, and some countries still have high inflation, such as Egypt, Ukraine, Italy, Azerbaijan and Turkey, among which Egypt's consumer price index in 2018 increased by more than 29% month-on-month, and the consumer price index of other three countries also increased by more than 10%. International financial risks will affect Chinese enterprises investing in countries along the Belt and Road.

With the deepening of the concept of the "Belt and Road" and the deepening of economic ties between countries, China's OFDI is bound to continue to increase, but due to differences in resource endowments, cultural background, political systems and social development, the economic development, trade level and investment environment of countries along the route are unbalanced, resulting in OFDI growth and facing a more complex investment environment. Financial risks in countries along the

"Belt and Road" are becoming more and more prominent, and the impact on China's OFDI is becoming increasingly prominent. In order to ensure the legitimate interests of our multinational investment enterprises, it is imperative to identify risk paths and prevent and control international financial risks. On this basis, practical risk prevention suggestions are put forward, which also provides a theoretical and practical basis for the host country to optimize the investment environment and achieve high-quality win-win cooperation.

2. LITERATURE REVIEW

The closely related literature of the research can be summarized as follows: A view, the investment environment of countries along the "Belt and Road" affects China's OFDI and has spatial effects. This area of research focuses on the investment environment, focusing on the impact of the political, economic, cultural and social development strength and potential of host countries on OFDI in the investing country. Lu and Xu (2020) believe that the uncertainty of the investment environment has aggravated the generation and transmission of financial risks, and not only the host country will be affected, but also other countries along the route will be affected due to the existence of spatial effects [1]. Regarding the measurement of international financial risk, the financial risk index and the Economist Intelligence Unit (EIC) risk indicator released by the US PRS are currently more widely used, and our research also uses this data.

The impact of international financial risk on FDI is not significant or statistically significant, represented by Kazunobu etc. (2013), Mehmet and Özlem (2016) [2-3]. Kazunobu et al. (2013) analyzed data from 1985 to 2007 in 89 countries to explore the impact of political risk and financial risk on FDI, and found that political risk has a negative impact on FDI, but lower financial risk does not attract more FDI, especially for developing countries. Mehmet and Özlem (2016) constructed three models to analyze data from 49 developing countries and found that country risk reduction increased FDI inflows, grouped by risk type, political risk and economic risk reduction had a positive effect on FDI, but the impact of financial risk was not statistically significant. Analyzed the relationship between financial risk and China's investment in ASEAN from the perspectives of exchange rate, interest rate, inflation rate and financial infrastructure, and found that the exchange rate, interest rate and inflation rate were negatively correlated with Chinese investment, while the impact of financial infrastructure was uncertain, and believed that the internationalization of RMB should continue to be promoted.

In recent years, the global economic and financial situation has been constantly changing, and the international financial risks faced by Chinese enterprises in foreign trade have been increasing, in order to effectively prevent and control OFDI financial risks. Based on previous research, this study will construct an empirical model of location selection of China's OFDI, explore the impact of international financial risks on China's OFDI, and put forward effective financial risk prevention and control suggestions, so as to provide decision-making reference for China's outbound investment policy formulation and financial opening-up.

3. THEORETICAL ANALYSIS AND RESEARCH

Analyze the impact and spatial effect of financial risks in countries along the "Belt and Road" on China's OFDI. We should not only identify the direction and extent of the impact of the host country's financial risks on China's OFDI, but also clarify the spatial effects of risk spillovers on third-party countries.

First of all, the national financial environment will inevitably affect the investment attraction, and the occurrence of financial risks will cause the investment environment to deteriorate and reduce foreign direct investment. The implementation of the "Belt and Road" initiative accelerates the process of regional integration and provides convenient conditions for investment, and the main body of China's OFDI is state-owned enterprises dominated by the state and the government, which pay more attention to the resource advantages of foreign investment and the overall layout of the industry, rather than to maximizing profits. Therefore, China's OFDI appears to be more of an illusion of flowing to medium- and high-risk countries. China OFDI will pay attention to the changes in the host country's economic development, social culture, business resources and other environments, and investment must give priority to environmental security issues and effectively protect capital and property rights. The "Belt and Road" is dominated by developing countries, with a low level of economic development, a relatively single industrial structure, a large capital demand and financing gap, and countries have increased policy dividends to attract investment; However, at the same time, insufficient attention is paid to the financial system and financial environment, and the market shows the defect of emphasizing investment and neglecting service, resulting in an increase in financial risks, so China's OFDI will be reduced accordingly. Based on the above analysis, this paper proposes a research hypothesis.

Based on the transnational diffusion trend of financial risk, the spatial role of economic activity can explain the driving and spillover mechanism of financial risk. Neighbouring countries are often under greater pressure than the impact of financial risks on host countries, and the competitive objective of limited resources under spatial effects encourages investors, host countries and third countries to avoid, transfer and diversify risks according to the source, scope of diffusion and expected consequences of financial risks. Based on the profit-seeking nature of capital flows, when the return on investment of one country is higher than that of other countries, excluding factors such as strict control of capital or information asymmetry, investment will directly flow into countries with higher rates of return, and countries will create a more convenient investment environment for competing for limited financial resources and foreign investment, relax restrictions on economic and financial cooperation between countries, and build a complex chain of domestic and international creditors and debts, which undoubtedly aggravates the depth and breadth of the spread of financial risks. The increase in alternative options for Chinese companies in their investment decisions will inevitably crowd investment into neighboring countries once financial risks arise and erupt in host countries. However, with the continuous advancement of regional integration, in order to protect scarce resources and avoid capital waste to the greatest extent, it is the general trend to reduce the overall financial risk in the region and ensure healthy competition and resource sharing for investment promotion.

In order to investigate the impact of international financial risks on China's OFDI, based on the data of countries along the "Belt and Road", we selected 56 of them as research samples, the dependent variable was China's OFDI stock, and the core independent variable was the international financial risk index released by PRS Group, and an empirical analysis model of location selection was constructed. Our econometric model is shown below:

$$\ln OFDI = \beta_0 + \sum_{i=1}^{5} \beta_i \times Ifr_i + \sum_{j=6}^{16} \beta_j \times Control_j + \varepsilon \quad (1)$$
$$i = 1, 2, \ldots, 5,\ j = 6, 7, \ldots, 16$$

In the formula, IFRI is an international financial risk indicator, including the ratio of principal and interest repayment of external debt to exports (Debtserv), current account balance as a percentage of total exports (Caxgs), exchange rate stability (Xrstab), and the ratio of net foreign liquid assets to monthly imports (Intliq), which are constructed by the US PRS Group, and the specific value range is detailed in Table 1; the variables in the formula are the control variables of the model, including GDP (GDP), population (POP), labor force (L), trade dependence (DOF), and so on.

3.1 Variable selection

The international financial risk indicators covered in this study are from the Political Risk Services Group in the United States, and the other indicators are from the World Bank's World Development Indicators, China's OFDI Statistical Bulletin (2003-2017) and the IMF database. Given that China's OFDI country statistics began in 2003, and taking into account the availability and quality of other indicators, our sample range was chosen for 2003–2017. To eliminate price effects, CPI was used for price deflations for value indicators, and logarithms were used to eliminate some of the aggregate indicators (see Table 1).

(1) China's stock of direct investment in countries along the "Belt and Road" — Dependent

China's direct investment in countries along the "Belt and Road" is

Table 1: Variable names, codes, and related processing

Type	Name	Notes	Source
Dependent	China's Stock of Outward Direct Investment (OFDI)	Using the CPI deflator	Statistical bulletin of China's OFDI
Independent variable	External debt to GDP ratio (Fordebt)	Value range 0 - 10	PRS Group
	Principal and interest repayments on foreign debt as a percentage of exports (Debtserv)	Value range 0 - 10	
	Current account balance as % of Total exports (Caxgs)	Value range 0 - 15	
	Exchange (Xrstab) Ratestability	Value range 0 - 10	
	Ratio of net foreign liquid assets to monthly imports (Intliq)	Value range 0 - 5	
Control variable	Gross Domestic Product (GDP)	Use CPI to deflate prices	World Development Indicators
	Population (POP)		
	Labor force (L)		
	Trade dependency (DOF)	Total imports and Exports /GDP	
	One Belt or One Road (YDYL)		
	Developed country or not (SFFDGJ)	1= developed countries, 0= developing countries	
	Endowment of Resources (RE)		
	Trade volume between China and other countries (C trade)	Use CPI to deflate prices	
	Whether to sign a Free trade agreement with China	0= none, 1= under negotiation, 2= signed and implemented	
	Border with China or not (SFJR)	1= border with China, 0= no border with China	
	Whether to sign a BIT with China or not		

Table 2: The main variables were described for statistical analysis

Variable	Amount	Mean	Sd	Minimum	Median	Maximum
Ofdi	840	123643	347627	0	10057	4.46e+06
Bit	838	1.797	0.592	0	2	2
Debtserv	837	8.997	1.317	1	9.5	10
Fordebt	840	5.925	2.28	0	6	10
Caxgs	840	11.96	1.466	5.417	12	15
Intliq	840	2.322	1.39	0	2.292	5
Xrstab	840	9.407	1.056	1.667	9.792	10
Fta	840	0.358	0.638	0	0	2
Gdp	840	5.36e+11	9.55e+11	1.60e+09	1.66e+11	6.20e+12
L	840	2.53e+07	6.36e+07	1.95e+05	5.42e+06	5.05e+08
Dof	825	99.82	64.39	0.167	86.56	437.3
Pop	840	5.99e+07	1.66e+08	4.52e+05	1.31e+07	1.34e+09
Ctrade	840	2.61e+06	4.94e+06	6.49e+02	6.89e+05	3.43e+07
Sffdgj	840	0.357	0.479	0	0	1
Sfjr	840	0.125	0.331	0	0	1
Re	839	26.9	30.37	0.347	11.64	97.37
Ydyl	840	1.714	0.452	1	2	2

the dependent variable of our analysis, but a considerable part of the outward FDI flow data is negative, and direct processing may increase the uncertainty of the model estimate, so we chose a more statistically complete OFDI stock data as the dependent variable, but there are still a few values of 0, which will produce data loss, and the self-selection of the sample also needs to be considered. We refer to Benassy- Quere et al. (2007) and Lane & Milesi-Ferretti for reference (2008) [4, 5], by squaring the original variable, adding 1 and then taking the square root, and then you take the logarithm, which is ln OFDI star is equal to:

$$InOFDI^{*} = In\sqrt{OFDI^{2}+1} \quad (2)$$

(2) International financial risk indicators — Independent variable

The core explanatory variable we choose is the International financial risk index, which is taken from the International Guide to Country Risk (ICRG) compiled by PRS Group. The five risk score indicators include the proportion of foreign debt. As a percentage of GDP (Fordebt), principal

Table 3: Hausman inspection table

Statistics	National model	Developed country	Developing country	Abundant resources of the country	Resources General Country Model	"One belt" country	"One way" country
Chi-square statistics	67.950	41.500	52.390	46.160	37.970	112.760	78.370
*P*Value	0.000	0.000	0.000	0.000	0.003	0.000	0.000

Table 4: Instrumental variable estimation of international financial risk

Variable	National model	Developed country	Developing country	Abundant resources of the country	Resources general country model	"one belt" country	"one way" country
C	-47.565*** (-6.229)	-68.676*** (-3.524)	-8.258*** (-5.695)	-6.939*** (-3.682)	-90.176*** (-5.735)	-224.861*** (-9.073)	-41.883*** (-6.923)
Debtserv	0.115** (2.577)	-0.008 (-0.062)	0.129*** (2.960)	0.034 (0.458)	0.155*** (2.833)	0.403*** (3.324)	0.137*** (2.985)
Fordebt	0.01 (0.294)	-0.091 (-1.238)	-0.009 (-0.255)	-0.004 (-0.096)	-0.026 (-0.563)	-0.623*** (-6.986)	-0.068** (-2.066)
Caxgs	0.025 (0.513)	0.075 (0.475)	0.051 (1.158)	0.124** (2.109)	0.004 (0.050)	0.398*** (3.653)	-0.104* (-1.919)
Intliq	0.053 (0.904)	0.079 (0.560)	0.057 (1.011)	-0.06 (-0.809)	0.160** (2.032)	0.036 (0.254)	0.143** (2.365)
Xrstab	-0.124*** (-2.940)	-0.163 (-1.295)	-0.076* (-1.942)	-0.016 (-0.300)	-0.177*** (-2.979)	-0.345*** (-3.689)	-0.136*** (-2.927)
Ln*ctrade*	0.516*** (3.215)	0.975*** (3.184)	0.937*** (8.331)	0.934*** (6.238)	0.721*** (3.557)		1.530*** (13.343)
Bit	0.667** (2.538)		0.722*** (2.968)		0.726** (2.162)	1.315* (1.897)	1.058*** (3.825)
Ydyl	0.098*** (9.690)	0.158*** (8.369)	0.107*** (12.007)	0.128*** (10.079)	0.063*** (5.111)		
Ln*gdp*	0.705** (2.551)	2.359*** (2.941)			0.865** (2.075)	3.080*** (6.624)	
Ln*l*	1.626*** (3.730)				3.863*** (4.111)		1.775*** (4.467)
Sffdgj	0.188*** (8.983)			0.262** (2.146)	0.185*** (7.617)		0.225*** (11.292)
Re	0.024*** (3.129)		0.019*** (2.671)				
Dof	0.015*** (5.016)				0.021*** (5.807)	0.048*** (8.968)	
Fta			0.487*** (2.651)	0.784*** (2.650)			0.570*** (3.421)
Sfjr				0.073** (2.294)			
Ln*pop*						9.283*** (5.281)	
N	819	300	534	257	580	235	600
2	0.692	0.642	0.689	0.733	0.693	0.620	0.691
2	0.665	0.607	0.660	0.696	0.661	0.577	0.664

Note: 1. The number in parentheses is the t statistic, and the meaning of the asterisk is as follows: * means $P < 0.1$; ** Indicates $P < 0.05$; *** Represents $P < 0.01$; 2. To include time-independent metrics such as SFFDGJ, SFJR, and YDYL in the fixed-effect model, they are cross-multiplied with time t, and are represented by lowercase letters in the model

and interest payments on foreign debt as a percentage of exports (Debtserv), and the current account balance as a percentage of total exports (Caxgs), exchange rate stability (Xrstab) and ratio of net foreign liquid assets to monthly imports (Intliq). In other words, the higher the risk score is, the smaller the international financial risk is. These five score indicators are all positive indicators.

The corresponding risk score ranges from 0 to 5.

4. EMPIRICAL ANALYSIS RESULTS

Selection of empirical analys is model Panel data model can effectively solve the lack of freedom, which is a problem often faced in empirical analysis. Fixed effects model and random effects model are frequently used as panel data models. Hausman test (Greene, 1997) is used to determine which model is more appropriate. The original hypothesis H0 of the test is that random effects model should be adopted to construct Chi-square statistics for Hausman test.

$$H = (\hat{\theta} - \theta)'[Var\hat{r}(\theta) - Var(\theta)]^{-1}(\theta - \theta) \sim x^2(k) \quad (3)$$

Beam model estimation, is unconstrained model estimation. If H > (k), refuse.

The original hypothesis that a fixed-effect model should be used; Conversely, if H < χα(2) (k), the null hypothesis cannot be rejected, i.e. a random-effects model should be used. Using Stata15.1 software for the Hausman test (Table 3), it is not difficult to find that the chi-square statistics of the Hausman test of the seven models established are relatively large, among which, the smallest chi-square statistic is the resource general national model (χ^2 = 37.970), the corresponding *P* value is 0.003, and the *P* value of the Hausman test of other models is less than 0.001, therefore, when the significance level is α = 0.01, the null hypothesis should be rejected, that is, we should adopt Fixed-effect models for empirical studies.

Based on the results of the Hausman test, we constructed a fixed-effect model for empirical testing, starting with a fixed-effect model for all countries. Due to the large number of countries included along the Belt and Road, and our investment motives in developing countries and developed countries are obviously different, we have carried out classification modeling according to the stage of economic development, and constructed developed country models and developing country models respectively. For example, Kuwait, Iraq, Iran, etc. belong to resource-rich countries, and the resource-rich model and resource-general country model are constructed in turn. We used Stata15.1 software for fixed-effect model predictions, and the estimates are shown in Table 4.

Full country model analysis In order to analyze the impact of international financial risks on China's direct investment in countries along the "Belt and Road", the data of all countries along the "Belt and Road" were studied, including a total of 56 countries along the "Belt and Road".

The results of all country models in the first column of Table 4 show that the ratio of principal and interest repayment of external debt to exports (Debtserv) has a positive effect on OFDI in China, and two international financial risk variables, namely the ratio of principal and interest repayment of external debt to exports (Debtserv) and exchange rate stability (Xrstab), have a significant impact on OFDI in China. It shows that when China makes OFDI, it pays more attention to the ability of the host country's external debt repayment, and the exchange rate stability (Xrstab) has a negative effect on China's OFDI, which is contrary to our expectations, and the preference for investment in countries with less international financial risk is in line with our expectations.

5. CONCLUSIONS

5.1 Research conclusions

(1). The financial risks of countries along the "Belt and Road" have a significant impact on China's OFDI, which inhibits domestic foreign investment while squeezing China's OFDI into neighboring countries. (2). The host country's debt repayment capacity has a significant positive effect on China's direct investment in countries along the Belt and Road. Among the five indicators of international financial risk, the ratio of principal and interest repayments of external debt to exports (Debtserv) and the ratio of net foreign liquid assets to monthly imports are positive. However, it is necessary to start paying attention to the debt repayment capacity of host countries, enhance risk prevention awareness, and prevent and control financial risks.

(3). China's trade, BIT, "Belt and Road" countries or "Belt and Road" countries, GDP, trade dependence, labor, resources, and population in the control variables have a positive effect on China in OFDI.

5.2 Relevant revelations

(1). While paying attention to the financial risks of countries along the "Belt and Road", actively promote the regional financial cooperation environment and jointly cope with the impact of international financial risks. According to the influence of the spatial effect of interconnection among countries, improve the spatial layout of China's OFDI along the "Belt and Road". China's outbound investment should not only consider the financial factors of the host country, but also pay attention to the impact of the financial environment of neighboring countries on the overall investment environment in the region, establish and improve the multilateral coordination mechanism based on the overall situation, strive to achieve coordinated regional development, promote China's OFDI high-quality "going out", and minimize investment risks.

(2). Continue to deepen domestic financial reform and opening up, and continuously enhance the ability to respond to international financial risks. Compared with Western developed countries, China's financial development degree is still relatively low. Lacking stable and effective investment tools and an efficient trading market, China's financial market depth is far from enough, the RMB has not yet developed into an international currency, and China's ability to deal with international financial risks is still relatively weak. Therefore, on the basis of preventing risks, we should continue to deepen financial reform and opening up, build long-term, stable and effective securities and bond investment tools, improve the depth of the domestic financial market, establish a channel for the return of RMB investment, and enhance the degree of internationalization of the RMB. In line with international norms, domestic financial institutions should continuously strengthen their support for multinational investment enterprises and enhance the ability of Chinese enterprises to respond to international financial risks.

(3). China's investment in countries along the "Belt and Road" should be differentiated in a targeted manner, maximize the effect of outbound investment, enhance the awareness of risk prevention in outbound investment, fully understand the financial environment of the host country, carefully formulate investment plans, and give priority to countries that have signed investment agreements with China, are adjacent to China, and join the Shanghai Cooperation Organization. At the same time, we should strengthen exchanges and cooperation between governments, establish a friendly coexistence mechanism, and create a sustainable and stable investment environment for Chinese enterprises to "go global".

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