The Impact of the "Belt and Road " Countries' Financial Ecology on China's OFDI

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Abstract: The financial ecology of the countries along the "Belt and Road" has the great impact on the decision of China's OFDI. Based on the random effects model, this paper measures the financial ecology level of 47 countries along the "Belt and Road" using the data from 2003 to 2020. The results show that after overcoming the endogeneity problem, the financial ecology of "Belt and Road" countries plays a significant role in promoting China's OFDI, among which the financial environment has the most obvious impact on OFDI. The heterogeneity analysis concludes that the impact of financial ecology on China's OFDI varies from country to country. The Central and Eastern Europe has a relatively good financial ecology environment and a relatively high degree of financial activity. Therefore, China's OFDI should flow more to the Central and Eastern Europe with a better financial ecology environment.

1. Introduction

With the implementation of "going out" strategy and the introduction of the "Belt and Road" initiative, Chinese enterprises have increasingly participated in the global division of labor through Outward Foreign Direct Investment(OFDI), as well as promoted the flow of economic factors and resources. In 2020, the scale of China's OFDI flows ranked first, the stock of investment ranked third in the world, OFDI flows and stocks to countries along the "Belt and Road" amounted to 22.54 billion US dollars and 2007.9 billion US dollars, accounting for 14.7% and 7.8% of China's OFDI flows and stocks, respectively.

Although the financial cooperation between China and the "Belt and Road" countries has strengthened, but the risks of the "Belt and Road" countries' existing financial development have slowed down the process of further cooperation, thus affecting the external environment of Chinese OFDI. A good financial environment can provide diversified financing channels, a good market, stable business environment to the investing enterprises, and lower the financing costs.

2. Literature Review

Buckley and Casson (1976) first pointed out that OFDI theory includes two important components: First, multinational enterprises seek for the international markets where the benefits exceed the costs. Second, multinational enterprises tend to choose the countries and regions that minimize the overall production costs[1].More scholars analyzed the influencing factors of OFDI from the macro level in terms of institutions[2,3], trade openness[4,5], market size[6], natural resource endowment[7], infrastructure[8]. Some other scholars analyzed influencing factors of OFDI from micro level in terms of firm's executive characteristics[9], internal productivity[10,11], and technology level[12].

American scientist A. Mckenzie (1920) combined the ecological environment with modern economy for the first time [13]. K. Oulding (1965) introduced the concept of "ecological economics", and Chinese scholars have gradually turned to the study of the financial ecology [14]. But few scholars comprehensively studied the impact host country's financial ecology environment on

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China's OFDI, we will try to enrich the influencing factors and improve the previous research.

3. Theoretical Analysis and Research Hypothesis

A better financial environment can reduce the cost of Chinese enterprises to obtain information, thus enabling China to allocate resources more rationally. At the same time, a good financial ecology environment in the host country can provide different financing channels, reduce financing costs of enterprises, alleviate the constraints of corporate financing, enhance the ability to resist external risks, and motivate financial institutions to lower financial thresholds, and further develop the regional OFDI activities. Poor financial environment of the host country will cause certain losses to China’s OFDI. Therefore, we propose the first hypothesis.

Hypothesis 1 (H1). A good financial ecology environment of the host country is positively correlated with OFDI, and the improvement of the financial ecology system is conducive to the development of China’s OFDI .

The quality of the financial ecosystem of countries along the “Belt and Road” differs due to the differences in their financial, economic, legal and administrative environments and credit environments. A favorable economic environment in the host country promotes the improvement of China’s OFDI, which is conducive to the subsequent sales of the enterprise's products and increases the enterprise's operating income and performance. In addition, companies operation are also affected by the financial situation of the host country. A good financial environment of the host country can provide diversified financing channels for enterprises, which in turn influence their operation, increase their profits and promotes the "going out" of Chinese enterprises. A good legal and administrative environment of host country can avoid the disturbance, reduce corruption and protect the legitimate rights and interests of investors. Therefore, we propose the second hypothesis.

Hypothesis 2 (H2). The impact of different countries’ financial ecology on China’s OFDI is different.

4. Sample Selection, Variable Definition and model Construction

4.1. Sample Selection

Due to the availability of data and we select the stock of China's OFDI to 47 countries along “Belt and Road” from 2003 to 2020.

4.2. Variable Definition

Explained variable: The stock of OFDI .

Explanatory variable:Financial ecological environment.

We construct financial ecology environment indicators based on economic environment, administrative and legal environment, credit environment and financial environment, use the entropy method to comprehensively evaluate four secondary indicators and 21 tertiary indicators of the financial ecology environment of "Belt and Road" countries, and a comprehensive financial ecology evaluation indicator Fecology is introduced into the model as the core explanatory variable.

Control variables:Host country market size (Lngdp), trade openness (open), economic development level (Lnagdp), geographical distance (lndist), whether borders with China (contig), whether signs bilateral investment with China (bia). The data comes from WDI and CEPII databases.

Table 1 Financial ecology indicators of countries along the "Belt and Road"

Number	Indicator	Meaning
	Economic Environment	
X1	Economic growth rate	Measuring the degree of sustained development of the real economy
X2	Share of tertiary industry in GDP	Measuring economic structure indicators
X3	Investment in fixed assets as a percentage of GDP	Measuring the degree of investment in the real economy
X4	Foreign capital inflow to GDP	Measuring the ability to attract foreign investment
X5	Consumption expenditure to GDP	Measuring the overall consumption capacity of the economy
X6	Inflation	Measuring the economy's ability to stabilize
	Credit Environment	
X7	Information disclosure for enterprises	Measuring corporate financial disclosure
X8	Public credit system coverage	Credit status provided by public credit systems
X9	Private credit coverage	Credit status provided by private credit
	Administrative and Legal Environment	
X10	Citizen voice and accountability	Measuring the degree of political democracy
X11	Government stability without unrest	Measuring the degree of government stability
X12	Government efficiency	Measuring the level of government administrative efficiency
X13	Quality of regulation	Measuring the regulatory capacity of an economy
X14	Legal system	Measuring the degree of legal perfection in an economy
X15	Curbing Corruption	Measuring the ability of an economy to control corruption
	Financial Environment	
X16	Private sector credit as a share of GDP	Measuring the ability of the private sector to access credit
X17	Share of bank credit to the private sector	Measuring the bank's support for the private sector
X18	Bank stability	Measures the ability of banks to control risk
X19	National savings as a share of GDP	Measuring the ability of economies to obtain deposits
X20	Number of commercial banks per 100,000 people	Measuring the level of facilitation of financial services
X21	Return on net assets of banks	Measuring bank profitability

4.3. Model Construction

We use the Hausman test to determine the choice of random effects model in order to more accurately grasp the impact of each financial ecology indicators of the host country on China's investment. The full sample is analyzed empirically by adding the indicators of the univariate financial ecology environment. We add economic environment, financial environment, legal and administrative environment, and credit environment for our study(model 1-4).

$$LnOFDI_{it} = \alpha_0 + \beta_0\mathrm{Econo} + \beta\mathrm{X}_{\mathrm{i,t}} + \varepsilon_{\mathrm{it}} \quad (1)$$

$$LnOFDI_{it} = \alpha_0 + \gamma_0\mathrm{Finan} + \beta\mathrm{X}_{\mathrm{i,t}} + \varepsilon_{\mathrm{it}} \quad (2)$$

$$LnOFDI_{it} = \alpha_0 + \delta_0\mathrm{Law} + \beta\mathrm{X}_{\mathrm{i,t}} + \varepsilon_{\mathrm{it}} \quad (3)$$

$$LnOFDI_{it} = \alpha_0 + \theta_0\mathrm{Credit} + \beta\mathrm{X}_{\mathrm{i,t}} + \varepsilon_{\mathrm{it}} \quad (4)$$

Model (5) is a full-sample of co-adding different dimensions of host country financial ecology indicators.

$$LnOFDI_{it} = \alpha_0 + \beta_1 Fecology + \beta X_{i,t} + \varepsilon_{it} \quad (5)$$

Where i and t represent the country and year respectively. OFDI is the explanatory variable, and the comprehensive evaluation index of host country financial ecology environment (Fecology) is the core explanatory variable, ε_{it} is the random error term.

5. Data Results and Analysis

5.1. Preliminary Test

The descriptive statistics test revealed that there is no outliers for the variables and subsequent test could be followed-up.

Table 2 Descriptive statistics of the main variable indicators

Variable	Obs	Mean	Std. Dev.	Min	Max
lnofdi	864	4.59	2.776	0	11
fecology	864	0.491	0.115	0.138	0.813
econo	864	0.404	0.043	0.173	0.554
finan	864	0.333	0.085	0.097	0.573
law	864	0.472	0.17	0.067	0.915
credit	864	0.351	0.172	0	0.892
lngdp	864	25.021	1.546	21.97	28.728
lnagdp	864	8.491	1.144	4.693	10.972
open	864	0.846	0.483	0.211	3.435
lndist	864	8.557	0.409	7.067	8.952
contig	864	0.25	0.433	0	1
bia	864	0.885	0.319	0	1

There is no serious multicollinearity problem among the explanatory variables. In addition, to address the endogeneity issue, we used 2SLS for regression estimation, which was tested by lagging the explanatory variables by one period. It was found that the coefficients of the indicators did not change much and the direction was basically consistent with the baseline regression, indicating that the selected instrumental variables were valid.

Table 3 Baseline regression results for the whole sample

Variable	model(1)	model(2)	model(3)	model(4)	model(5)
	lnofdi	lnofdi	lnofdi	lnofdi	lnofdi
econo	3.228*				
	(1.92)				
finan		10.192***			
		(9.23)			
law			5.201***		
			(5.40)		
credit				5.173***	
				(13.89)	
fecology					12.386***
					(14.39)
lngdp	2.282***	2.255***	1.466***	1.752***	1.941***
	(15.84)	(15.73)	(11.43)	(12.38)	(14.39)
lnagdp	1.457***	1.340***	1.466***	0.999***	1.044***
	(8.28)	(7.92)	(8.46)	(6.13)	(6.48)
open	0.533**	0.540**	0.466*	0.436*	0.395*
	(2.61)	(2.70)	(2.26)	(2.19)	(2.03)
lndist	-5.046***	-5.277***	-5.174***	-4.494***	-4.842***
	(-5.81)	(-6.15)	(-6.01)	(-5.57)	(-6.00)
contig	1.761**	1.877**	2.031**	1.287*	1.434*
	(2.17)	(2.33)	(2.51)	(1.70)	(1.90)
bia	1.941***	1.942***	1.943***	1.206***	1.841***
	(4.83)	(5.10)	(4.94)	(3.32)	(5.14)
_cons	-22.387***	-23.511***	-24.253***	-12.373*	-19.423***
	(-2.73)	(-2.92)	(-3.00)	(-1.62)	(-2.56)
N	846	864	864	864	864

Note: ***, ** and * are significant at 1%, 5% and 10% significance levels, respectively.

It can be seen that the impact of host countries' financial ecology on firms' OFDI shows a positive trend of promotion and is significant at the 1% level. In addition, the impact of host countries' economic environment, financial environment, legal and administrative environment and credit environment on OFDI are significantly positive, This indicates that good economic, political, financial and legal environment of the host country can promote the improvement of China's OFDI, increase the performance of enterprises, provide diversified financing channels, increase profits, reduce corruption, protect the legal rights and interests of investors, and promote the "going out" of

Chinese enterprises. The results in Table 3 prove the Hypothesis 1.

5.2. Heterogeneity Analysis

Since the economic development, openness of financial markets, legal and administrative environment of “Belt and Road” countries vary, the amount and scope of China's OFDI may different. So we conducted the heterogeneity by dividing the “Belt and Road” countries into Southeast Asia, West Asia, Central and Eastern Europe and Central Asia.The test results are as follows.

Table 4 Heterogeneity test results

Variable	Southeast Asia	West Asia	Central and Eastern Europe	Central Asia
	(1)	(2)	(3)	(4)
	lnofdi	lnofdi	lnofdi	lnofdi
fecology	8.967***	6.949**	10.650***	3.111***
	(2.12)	(5.95)	(5.10)	(2.33)
lngdp	0.705***	0.930***	1.232***	0.415*
	(4.17)	(3.15)	(8.18)	(1.58)
lnagdp	0.100*	0.368*	3.362***	0.242*
	(0.12)	(1.71)	(8.59)	(0.75)
lndist	-7.009***	-7.399***	-3.380**	-23.708***
	(-6.02)	(-3.52)	(-1.57)	(-7.41)
contig	-2.605**	0.000	4.116***	0.000
	(-2.29)		(4.07)	
bia	3.321***	-1.113***	-1.022***	0.000
	(3.32)	(-2.79)	(-2.13)	
open	4.973***	1.689***	1.438***	4.006***
	(5.04)	(3.08)	(4.73)	(4.13)
_cons	40.055***	39.779**	20.352**	21.543***
	(3.95)	(2.12)	(1.12)	(1.64)
N	108	162	162	72

Note: ***, ** and * are significant at 1%, 5% and 10% significance levels, respectively.

Table 4 shows that the financial ecology of Central & Eastern Europe, Southeast Asia, Central Asia and West Asia all have a significant positive effect on China’s OFDI, and the significant coefficients of Central & Eastern Europe and Southeast Asia are higher than those of West and Central Asia. There is a sharp ethnic conflicts, political turmoil and poor financial ecology environment in West Asia. so it is not suitable for investing at this stage. Although the Southeast Asia’s financial ecology environment is better, but still exist the domestic political instability and also influenced by Indian political problems, which is not conducive to China to invest in-depth. The financial ecology environment of Central and Eastern Europe is better, political and credit environment is also improved. Although the financial ecology environment of Central Asia is relatively backward, but rich in natural resources and has geographical advantages, so may become a key region for China’s OFDI under the background of "Belt and Road" initiative. Therefore, table 4 proves Hypothesis 2.

6. Policy Recommendations

First, For Chinese enterprises, it is necessary to deeply analyze the financial ecology environment of “Belt and Road” countries before investing, so that improve the investment efficiency as much as possible.

Second, Chinese enterprises should adopt different investment strategies of the countries along the “Belt and Road”. China can strengthen the cooperation with the countries in Southeast Asia and South Asia by improving the infrastructure construction. And deepen the cooperation with Middle

East and Central Asia in cross-regional industrial chain. As for Eastern Europe and Singapore, Israel and other countries with relatively high technology level, China can carry out cooperation in high-tech fields.

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