

Stepping-stone or stumbling block: impact of the economic system on China's OFDI

He Xia, Fang Dong & Hong Yang

To cite this article: He Xia, Fang Dong & Hong Yang (2022) Stepping-stone or stumbling block: impact of the economic system on China's OFDI, Economic Research-Ekonomiska Istraživanja, 35:1, 6901-6917, DOI: [10.1080/1331677X.2022.2053866](https://doi.org/10.1080/1331677X.2022.2053866)

To link to this article: <https://doi.org/10.1080/1331677X.2022.2053866>



© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 25 Sep 2022.



Submit your article to this journal [↗](#)



Article views: 575



View related articles [↗](#)



View Crossmark data [↗](#)

Stepping-stone or stumbling block: impact of the economic system on China's OFDI

He Xia^a , Fang Dong^b and Hong Yang^a

^aCollege of Economics and Management, Xinjiang Agricultural University, Urumqi, China; ^bSchool of Economics and Management, Xinjiang University, Urumqi, China

ABSTRACT

With the proposal of the One Belt, One Road initiative, China's OFDI has grown rapidly, with institutions playing key roles. This study uses residualization and threshold regression methods to analyse the 2003–2019 panel data of 31 provinces and cities in China to study the impact of property rights protection, market operation, and financing systems on China's foreign outward direct investment (OFDI). Overall, the results show that only the market operation system is key in promoting OFDI. Regarding regional heterogeneity, the property rights protection system has a solely positive incentive effect on OFDI in the central region. Moreover, the market operation system only plays a positive role in promoting OFDI in the eastern developed and central regions. The financing system has a threshold effect, which has significant negative and positive impacts on OFDI in the eastern and central regions, respectively. Conversely, the financing system's impact changes from significant to insignificant in the western region before and after the threshold value. This study provides a theoretical reference for economic system reform in the process of implementing the strategy of "going out" in various regions.

ARTICLE HISTORY

Received 7 January 2022
Accepted 11 March 2022

KEYWORDS

Economic system; OFDI; property right protection system; market operation system; financing system

JEL CODES

E22; E44; F21; F41

1. Introduction

In 2000, China clearly proposed the "going out strategy" and joined the WTO in the following year. Since then, China's foreign direct investment (FDI) has increased sharply, owing to advanced technology and management experience, promoting a boom in China's economy (Ameer et al., 2017). With the rise of China's economy, OFDI has gradually increased and surpassed FDI to become a net outflow of capital in 2015 (Zhang et al., 2021). In the same year, China's One Belt One Road initiative was fully implemented. However, the development of outward foreign direct investment (OFDI) among regions within China is not balanced; OFDI in eastern coastal areas is higher than that in the central and western regions (Figure 1)¹. What factors promote the rapid development of China's OFDI while causing regional imbalance? What role

CONTACT Hong Yang  275004663@qq.com

© 2022 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

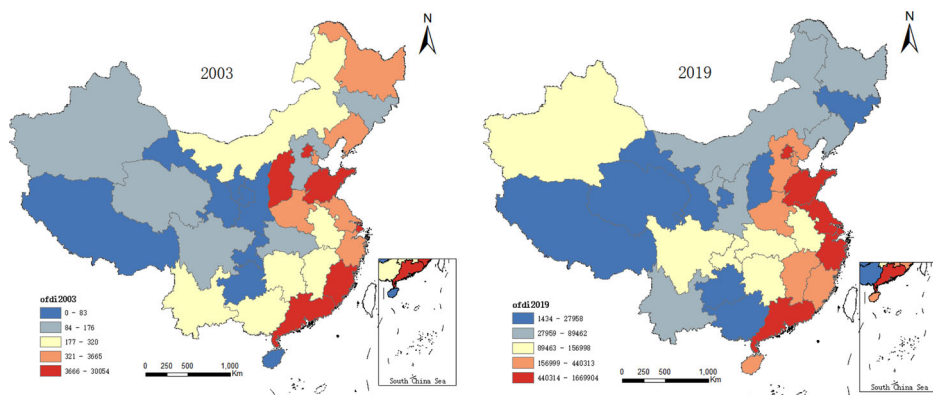


Figure 1. Spatial and temporal distribution of OFDI in China (2003, 2019).

Source: National Platform for Common Geospatial Information Services.

does the economic system play? In explaining a country's FDI theory, Dunning's (1990) International Production Compromise Theory (OLI paradigm) is generally accepted. This mainly explains a series of investment behaviours of developed countries to developing countries; however, multinational corporations in emerging economies such as China do not have the ownership advantage of foreign investment described by Dunning, weakening the explanation of this theory. Therefore, reasonably explaining the foreign investment behaviour of emerging economies is important.

The extreme growth of China's OFDI has not only caused panic among the people and governments of many host countries but has also adversely affected China's balance of payments and exchange rate stability. Therefore, the Chinese government has begun strengthening general supervision of overseas investments (Wang & Gao, 2019). Compared with other countries, the Chinese government has stronger macro-control ability and higher administrative implementation of various policies. Hence, institutional factors are more important. It is one of the three important factors unique to China influencing OFDI behaviour (the other two are capital market defects and enterprise-specific advantages of Chinese multinationals) (Buckley et al., 2007). Therefore, a scientific and reasonable understanding of its developmental mechanism is of great practical significance. This study attempts to explain the development of China's OFDI from three aspects of the economic system.

Although academia generally believes that multinational enterprises in developing countries require special advantages to explore overseas markets, the conclusions remain inconsistent. Institutional factors are considered the main thrust of FDI in emerging economies (Holtbrügge, 2018; Huang et al., 2021; Wan & Hopkinson, 2003), which provides a direction for the study of the internationalisation behaviour of enterprises in emerging economies and has become an important way of understanding multinational enterprises. However, most existing studies focus on the impact of the host country's system on OFDI. Few studies have examined the impact of the home country's economic system on OFDI, which is limited to national level analysis. Most do not consider the differences at the provincial level.

As one of the transition economies and the largest-developing countries, how does China's economic system affect OFDI? Has it effectively promoted implementation of

the “going out” strategy? Are the effects heterogeneous among different regions? Research on these issues is scarce; hence, this study attempts to fill this gap in two ways. First, we decompose the economic system into market operation, property right protection, and financing systems to answer whether it is a “stepping-stone” or a “stumbling block” to China’s OFDI. Second, the residualization method and threshold regression models are used to verify how the economic system affects China’s OFDI and its regional heterogeneity. Discussion on these issues enriches the research content of institutional theory on OFDI and provides an important reference value for other transition economies to conduct foreign investment.

The rest of this paper is organised as follows. Section 2 is a literature review and theoretical mechanism analysis, which summarises previous studies and leads to this paper’s analysis framework. Section 3 involves variable selection and data description, and Section 4 is model construction and parameter estimation. In addition to introducing the model constructed in this paper, the estimation process of the panel residualization method is also provided, and Section 5 presents an analysis of the empirical results and robustness analysis, and, finally, the conclusions and policy implications of the paper.

2. Literature review and theoretical mechanism analysis

2.1. Literature review

The quality of the home country’s institutional environment, maturity of the system, and the level of political risk are all important factors affecting enterprise OFDI. Institutional escape occurs when an enterprise’s inefficient capital gains and their home country’s mandatory constraints force these companies to invest overseas to seek more efficient and relaxed market environments. Particularly, when foreign capital has super-national treatment in their home countries, enterprises are more likely to invest in tax havens by round-tripping (Yamakawa et al., 2007). The formal system (corresponding government policies, government arrangements in enterprises) and informal systems (national pride and ideology) of the home country can become key in realising strategic objectives at the national level and improving enterprises’ competitiveness in the internationalisation process (Li et al., 2021; Ren et al., 2012). Simultaneously, the institutional impetus of the home country can also explain the behaviour of state-owned enterprises inclined to invest in high-risk areas (Chen, 2016; Yang & Li, 2021). Hence, this shows that the home country, as the cornerstone of enterprises’ overseas activities, can provide basic conditions for enterprise the development in all aspects, and the economic system of the home country is increasingly important in the economic activities of foreign investment.

Both institutional support and constraints have a significant impact on the internationalisation strategies of enterprises in developing countries (Chen & Han, 2020). In addition to systems and policies for promoting FDI activities and supporting the international expansion of Chinese enterprises, China’s institutional environment also includes systems hindering the development of enterprises and forcing enterprises to go abroad (Christofi et al., 2022). From the perspective of China’s economic system, the OFDI behaviour of global Chinese enterprises is affected by both institutional

incentives and the institutional escape effect (Jiang & Wang, 2014). On the one hand, the better the regional quality of the home country, the more it can significantly promote foreign investment behaviour of private enterprises (Wu & Tan, 2018). This is because when a country's internal economic system develops well, it can give full play to the "invisible hand" of the market to realise the optimal allocation of resources, and enterprises can also maximise profits. Moreover, the higher the quality of the national economic system, the less government intervention for enterprises. In the globalisation process, enterprises have stronger international competitiveness (Ji & Ge, 2015).

On the other hand, the OFDI of emerging countries and regions in the early stages of international expansion is mainly attributable to the institutional escape of capital (Christofi et al., 2022; Luo et al., 2010). Enterprises are understood to choose a host country with better institutional quality for investment as the institutional quality of their home country is not ideal, especially in a situation of super-national treatment of foreign capital in the home country. Moreover, it is more likely to invest in tax haven areas by round-tripping (Yamakawa et al., 2007). When faced with serious discriminatory policies and institutional dilemmas in the domestic market, private enterprises seek foreign markets to raise capital and overcome institutional constraints in home countries (Child & Marinova, 2014). Institutional escape is a basic motivation for private enterprises in China to invest overseas (Luo et al., 2010).

In summary, the expected impact of institutional quality on FDI still lacks answers (Saikia, 2021). A country's economic system can promote OFDI. However, this can sometimes prevent companies from going global (Ramamurti & Hillemann, 2018). The influence of China's economic system on OFDI requires further discussion. Currently, there are many academic studies on the impact of the host country's system on OFDI, however, only few studies have examined the impact of the home country's economic system on China's OFDI. Therefore, based on previous research, this study contains two contributions. One is to decompose the economic system into three aspects—economic operation, property rights protection, and financing—to analyse the subdivided impact of the economic system on China's OFDI. The second is to use residualization and panel threshold methods to reveal how economic institutions affect OFDI behaviour in different regions. As a typical representative of emerging economies, studying the impact of China's economic system as the home country on OFDI is of positive significance and value to the economic system construction of other emerging economies in the process of foreign investment.

2.2. Theoretical mechanism analysis

2.2.1. Theoretical environment assumptions

Since China's reform and opening up, the entire economy and society have undergone intensive changes, especially since the implementation of the "Belt and Road" strategy. China's OFDI has grown rapidly (Huang et al., 2021; Wang & Gao, 2019), and the system is undoubtedly a crucial variable. On the one hand, at the institutional design level, good institutional quality can produce a healthy evolution of the economic organisation. Effective economic organisations can also affect the

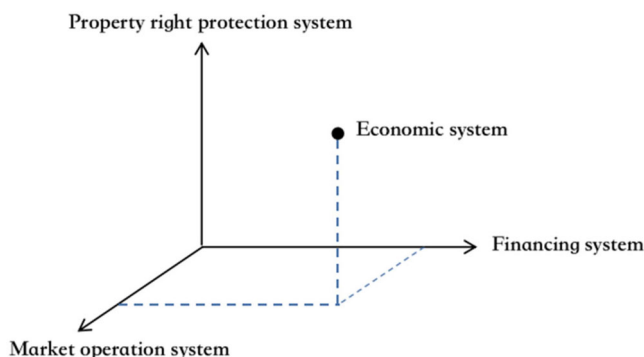


Figure 2. The three components of an economic system.

Source: the author.

internalisation advantages of OFDI and promote corporate internationalisation (Ji & Ge, 2015). As high-efficiency economic organisations can define clear property rights, form certain incentive mechanisms, clarify transaction rules and regulations during transactions, and reduce transaction costs, companies that go global have strong international competitiveness. On the other hand, from the perspective of the transmission factors of indirect effects, constant changes in the economic system combine knowledge attributes. As an endogenous catalyst for enterprises' foreign investment, OFDI growth can be attributed to scientific and technological innovation and improvement in production efficiency produced by institutional reforms in the economic system. Therefore, from the perspective of key areas, the institutional environment at the legal level, market-oriented system in economic operations, and financing constraints on the financial system all affect China's OFDI at the economic system level.

2.2.2. Theoretical variable assumptions

The economic system has three core dimensions: the market operation system, being the fundamental; the property rights protection system, comprising guarantee, and the financing system is an important part of the economic system (Figure 2).

2.2.2.1. Market operation system. The market operation system is divided into two main categories: planned and market economies. The former is regulated by the state to guide market operations; conversely, the latter is freely regulated by the "invisible hand," with price as the core. In reality, market operating systems of various countries operate somewhere in between. Imperfections in market-oriented systems tend to increase transaction costs. In contrast, a clear property rights protection system and less government intervention promote the sound development of enterprises. While basing themselves on the domestic market, they are more willing to seize opportunities and implement a "going out" strategy for greater profits. The direct embodiment of a market-oriented system is the strength of government control, one of which is the proportion of non-state-owned enterprises (Li & Zeng, 2019). The more obvious the proportion, the more the majority of enterprises are controlled by the state. Moreover, the more similar the market operation system is to a planned economy, the more the market lacks vitality. However, the larger the proportion, the

higher the degree of marketisation, the higher the market vitality, the more inclined the market economy operation system, and the more conducive it is to promoting enterprises to conduct OFDI activities (Qiao et al., 2020).

2.2.2.2. Property rights protection systems. When the home country's property rights are not guaranteed, the implementation of national laws is ineffective, entry barriers are encountered, and monopoly restrictions are established, In turn, enterprise transaction costs are affected, and transaction risks increase. Therefore, OFDI development is a manifestation of the institutional escape effect (Jiang & Wang, 2014). As an emerging economy, one of the goals of China's economic system reform is to constantly improve laws and regulations to protect the legitimate rights and interests of enterprises, including intellectual property rights; establish a standardised market order; and optimise resource allocation. With the deepening of globalisation, intellectual property is key in industrial competition and has become one of the most important factors for enterprises to consider in their foreign investment (Han, 2021). China's intellectual property rights protection system has also gradually improved with the need for economic and social development. Overall level has significantly improved. Although many challenges remain, China's current intellectual property legislation and enforcement capabilities are good (Li et al., 2021). A sound economic-related legal system, especially a property rights protection system, guarantees that enterprises compete orderly, innovate continuously, and grow, which is conducive to enterprises' "going out" strategies for OFDI.

2.2.2.3. Financing system. Financing availability is a necessary condition for the development and growth of enterprises, and financing constraints directly determine whether multinational companies can conduct OFDI activities. Although sources of funds for foreign investment by multinational companies are diversified, the home country's internal financing is undoubtedly at its core. and the home country's internal financing system has an important impact on OFDI (Tripathi & Thukral, 2018). China's financial system is dominated by state-owned banks, and non-state-owned enterprises, especially private enterprises, face financing and expensive financing difficulties. They need to bear cumbersome approval procedures and credible mortgage guarantees, and financing costs are high. Financing constraints have become one of the main challenges faced by non-state-owned enterprises. Since 2017, the proportion of private enterprises in China's foreign non-financial direct investment has begun to exceed that of state-owned enterprises and has gradually become the main force of OFDI. Therefore, the proportion of non-state-owned holding enterprises using financial institution loans can reflect the financing of Chinese enterprises' OFDI. The larger the proportion, the more conducive it is to the enhancement of Chinese enterprises' OFDI willingness (Lv et al., 2019).

3. Variable selection and data description

3.1. Variable selection

3.1.1. Dependent variable

The amount of OFDI is expressed by the flow data of foreign investment in provinces and is added to the econometric model in the form of a natural logarithm.

3.1.2. Core independent variables

The corresponding proxy variables of the market operation, property rights protection (Prps), and financing systems are the non-state-owned economic development index (Nsoe), the market legal environment, and the proportion of loans to non-state-owned enterprises (Fstru). At the market operation system level, we select the non-state-owned economic development index proposed by Fan and Wang (2011) as the proxy variable. In the property rights protection system (Prps), this study uses the development of market intermediary organisations and the legal system environment index constructed by Fan et al. (2018). In the financing system, the alternative variable is the proportion of non-state-owned loans from financial institutions, which refers to the proportion of all loans flowing to non-state-owned enterprises.

3.1.3. Control variables

We add four factors directly related to OFDI to the model. Regional human capital level (Human), which represents the situation of senior human resources in a region, is expressed by the proportion of personnel with a junior college degree or above in the total human resources of the region. Regional level of technological progress (Patent) is then measured by the total number of patents granted for an invention, new design, and utility model in the region. Degree of openness (Open) is expressed by the proportion of regional total imports and exports in GDP. Finally, regional per capita income (PIN), which represents the level of economic development of a region, is expressed by GDP per capita. Companies in regions with high per capita incomes are more likely to invest abroad.

3.2. Data description

Data on OFDI at the provincial level in this study are collected from the Statistical Bulletin of China's OFDI. Since the official recording of China's OFDI from 2003, 17 years of flow data have been collected. Other data related to the China Statistical Yearbook, China Labor Statistics Yearbook, China Science and Technology Statistics Yearbook, and so on were uniformly converted into US dollars according to the exchange rate between RMB and US dollars in the corresponding years. Table 1 shows the explanations and sources of all variables.

Table 2 shows the correlation coefficient between variables, which shows that the correlation between Prps, PIN and other independent variables is over 0.5. Conversely, the correlation between other independent variables is lower than 0.5. Although the degree of multicollinearity is not very serious, the individual effects of the variables might not be clearly separated or displayed (García et al., 2020).

4. Model construction and parameter estimation

4.1. Model construction

With reference to the selection of variables in the third part and related research results of predecessors, this study intends to construct a semi-logarithmic measurement model as follows:

Table 1. Variable interpretation and data source.

variables	unit	Index Interpretation	data sources
Dependent variable:			
OFDI	Ten thousand dollars	Non financial foreign direct investment	The Statistical bulletin of China's foreign direct investment
Core independent variables:			
Prps	branch	Legal system environment index	Marketization report index of China's provinces
Nsoe	branch	Non state owned economic development index	Marketization report index of China's provinces
Fstru	branch	Loan ratio of financial institutions to non-state-owned enterprises	Marketization report index of China's provinces
Control variables:			
Open	percentage	Openness to the outside world	China foreign trade and economic statistics yearbook
PIN	CNY	Per capita GDP	China Statistical Yearbook
Human	percentage	Proportion of college degree or above	China Labor Statistics Yearbook
Patent	piece	Number of patent applications authorized	China Science and technology statistical yearbook

Source: Authors Calculation.

Table 2. Correlation coefficient between variables.

	Prps	Nsoe	Fstru	Open	PIN	Patent	Human
Prps	1						
Nsoe	0.649	1					
Fstru	0.524	0.559	1				
Open	0.611	0.421	0.336	1			
PIN	0.728	0.477	0.339	0.4221	1		
Patent	0.679	0.437	0.567	0.318	0.570	1	
Human	0.615	0.287	0.074	0.491	0.868	0.349	1

Source: Authors Calculation.

$$\ln\text{OFDI}_{it} = \lambda_0 + \lambda_1\text{Prps}_{it} + \lambda_2\text{Nsoe}_{it} + \lambda_3\text{Fstru}_{it} + \lambda_4\text{Open}_{it} + \lambda_5\text{PIN}_{it} + \lambda_6\text{Human}_{it} + \lambda_7\text{Patent}_{it} + \varepsilon_{it} \quad (1)$$

Subscript *i* represents the region, *t* represents the year of the sample data, λ is the coefficient corresponding to each explanatory variable, and ε is the random disturbance term. To solve the problems of the coefficient not being significant because of variance expansion caused by multicollinearity and the positive and negative sign inversion of variable coefficients, this study adopts the residualization method proposed by García et al. (2020). The core idea was to separate the influence of the key independent variable on the dependent variable, remove the interference of other independent variables, and effectively solve the problems of variance expansion and coefficient reversal caused by multicollinearity. The specific steps are as follows.

First, rewrite (1) into the following compact form:

$$Y = X\beta + u \quad (2)$$

Where $Y = \ln\text{OFDI}_{it}$, $X = (\text{Prps}_{it}, \text{Nsoe}_{it}, \text{Fstru}_{it}, \text{Open}_{it}, \text{PIN}_{it}, \text{Human}_{it}, \text{Patent}_{it})$, β is the coefficient matrix composed of the coefficients of each variable. Furthermore, the sum in the above formula can be decomposed into two parts, namely $X = (X_k, X_{-k})$, $\beta = (\beta_k, \beta_{-k})$, $k=1,2, \dots, p$. X_{-k} is the key explanatory variable of interest, for example, $X_{-k} = \text{Nsoe}$, X_k is other independent variables.

Second, use other independent variables to perform auxiliary regression on the core independent variables:

$$X_k = X_{-k}\alpha + \nu \tag{3}$$

The residual $\hat{\nu}$ estimated from the above formula is the part that is separated from the explanatory variable X_k and independent of the key explanatory variable X_{-k} , namely $\hat{\nu}^T X_{-k} = 0$.

Thirdly, replace the X_k part of X in equation (2) with the ν estimated in equation (3), and

$$Y = X_O\gamma + \omega \tag{4}$$

Where $X_O = (X_{-k}, \hat{\nu})$.

Compared with the traditional regression model, the residualization method can ensure isolation between the core independent variables and avoid the coefficient estimation bias and sign reversal problems caused by the correlation between dependent variables. Through the Hausman test, we finally choose the panel fixed effects model.

4.2. Parameter estimation

Following the solution idea of the least-squares method (OLS), the parameter estimation formula in Equation (2) is

$$\begin{aligned} \hat{\beta} &= \left(X^T X \right)^{-1} X^T Y = \begin{pmatrix} X_{-k}^T X_{-k} & X_{-k}^T X_k \\ X_k^T X_{-k} & X_k^T X_k \end{pmatrix}^{-1} \begin{pmatrix} X_{-k}^T Y \\ X_k^T Y \end{pmatrix} = \begin{pmatrix} A & B \\ B^T & C \end{pmatrix} \begin{pmatrix} X_{-k}^T Y \\ X_k^T Y \end{pmatrix} \\ &= \begin{pmatrix} (X_{-k}^T X_{-k})^{-1} X_{-k}^T Y - \hat{\alpha} \cdot \frac{\hat{\nu}^T Y}{\hat{\nu}^T \hat{\nu}} \\ \frac{\hat{\nu}^T Y}{\hat{\nu}^T \hat{\nu}} \end{pmatrix} = \begin{pmatrix} \hat{\beta}_{-k} \\ \hat{\beta}_k \end{pmatrix} \end{aligned}$$

Where

$$\begin{aligned} A &= (X_{-k}^T X_{-k})^{-1} + (X_{-k}^T X_{-k})^{-1} X_{-k}^T X_k \cdot (\hat{\nu}^T \hat{\nu})^{-1} X_k^T X_{-k} (X_{-k}^T X_{-k})^{-1} \\ &= (X_{-k}^T X_{-k})^{-1} + (\hat{\nu}^T \hat{\nu})^{-1} \cdot \hat{\alpha} \hat{\alpha}^T \end{aligned}$$

$$B = -(X_{-k}^T X_{-k})^{-1} X_{-k}^T X_k (\hat{\nu}^T \hat{\nu})^{-1} = -\hat{\alpha} (\hat{\nu}^T \hat{\nu})^{-1}$$

Table 3. Benchmark regression results of the impact of economic system factors on China's OFDI.

Variables	(1)	(2)	(3)	(4)
Prps	-0.023 (-0.789)	-0.003 (-0.092)	0.000 (0.004)	0.014 (0.443)
Nsoe		0.190*** (3.093)	0.189*** (3.050)	0.244*** (2.996)
Fstru			-0.004 (-0.252)	-0.012 (-0.589)
Open				-0.155 (-0.305)
PIN				0.220*** (2.909)
Human				-0.042* (-1.822)
Patent				0.014 (0.443)
Constant	5.838*** (26.365)	4.673*** (10.714)	4.699*** (10.466)	4.496*** (8.311)
Individual fixed effect	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes
R ²	0.800	0.804	0.804	0.808
N	527	527	527	527

Note: In parentheses are t values, *, ** and *** respectively represent significant at the level of 10% 5% 1%. The following tables are the same.

Source: Authors Calculation.

$$C = \left(X_k^T X_k - X_k^T X_{-k} \left(X_{-k}^T X_{-k} \right)^{-1} X_{-k}^T X_k \right)^{-1} = \left(X_k \left(I - X_{-k} \left(X_{-k}^T X_{-k} \right)^{-1} X_{-k}^T \right) X_k \right)^{-1} \\ = \left(\hat{v}^T \hat{v} \right)^{-1}$$

Similarly, due to $\hat{v}^T X_{-k} = 0$, the OLS estimation formula of parameter γ in equation (4) is

$$\hat{\gamma} = \left(X_o^T X_o \right)^{-1} X_o^T Y = \left(\begin{array}{cc} X_{-k}^T X_{-k} & X_{-k}^T \hat{v} \\ \hat{v}^T X_{-k} & \hat{v}^T \hat{v} \end{array} \right)^{-1} \left(\begin{array}{c} X_{-k}^T Y \\ \hat{v}^T Y \end{array} \right) = \left(\begin{array}{c} \left(X_{-k}^T X_{-k} \right)^{-1} X_{-k}^T Y \\ \frac{\hat{v}^T Y}{\hat{v}^T \hat{v}} \end{array} \right) = \left(\begin{array}{c} \hat{\gamma}_{-k} \\ \hat{\gamma}_k \end{array} \right)$$

5. Analysis of empirical results

5.1. Benchmark regression results

According to benchmark regression results in Columns (1) to (2) (Table 3), the coefficient of property rights protection system (Prps) on OFDI is negative. Conversely, the coefficients in Columns (3) to (4) are positive but not significant. Hence, overall, the property right protection at the legal level does not have a due incentive effect on China's FDI. Consistent with the results of Luo et al. (2010) and Christofi et al. (2022), "institutional escape" remains relevant, indicating that the control of enterprises needs more transparency and that judicial construction still needs continuous improvement. The coefficient of the non-state-owned economic development index (Nsoe), which represents the market operating system, is always positive and significant at the 1% level. This demonstrates that China's long-standing economic system reform, especially the reform of the property rights protection system, has stimulated

Table 4. Results of regional heterogeneity analysis.

Variables	Eastern region	Central region	Western region
Prps	0.036 (0.727)	0.559*** (3.008)	0.113 (0.696)
Nsoe	0.539*** (4.705)	0.728*** (3.108)	-0.124 (-0.843)
Fstru	-0.077** (-2.397)	0.166** (2.233)	0.018 (0.335)
Open	-0.209 (-0.344)	5.345 (1.389)	-2.527 (-1.208)
PIN	-0.001 (-0.013)	0.469** (2.079)	0.111 (0.562)
Human	-0.066** (-2.224)	0.076 (1.193)	-0.001 (-0.011)
Patent	-0.013 (-0.675)	0.235*** (3.021)	0.013 (0.114)
Constant	2.799** (2.291)	1.978 (1.640)	3.853*** (4.839)
Individual fixed effect	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes
Observations	187	136	204
R ²	0.874	0.881	0.807

Source: Authors Calculation.

market vitality and effectively promoted the implementation of China's "going out" strategy by encouraging the development of private enterprises, which is similar to the research conclusions of Ren et al. (2012) and Li et al. (2021). The coefficient of the proportion of non-state-owned enterprise loans (Fstru), representing the financing system, is negative and insignificant. Overall, the existing financing system has limited improvement in the credit availability of non-state-owned enterprises and the FDI activities of Chinese enterprises cannot be effectively promoted. Moreover, the control variables Open, PIN, Human, and Patent in Column (4) lost their original economic significance because of residualization processing and should not be interpreted excessively.

5.2. Regional heterogeneity analysis

Considering the huge differences in China's regional economic development and foreign investment levels among regions, deepening the analysis of the impact of the economic system on China's OFDI from the perspective of regional heterogeneity is necessary. Table 4 presents the regression results. The results of the regional heterogeneity analysis were inconsistent with those in Table 3, showing obvious regional heterogeneity. None of the three core explanatory variables is always significant in the three regions of East, Middle, and West.

Specifically, the coefficients of Prps in the three regions are positive but significant only in the central region. This indicates that the legal property system has an incentive effect on OFDI in the central region, whereas the institutional escape effect may exist in eastern and western regions. The market operation system (Nsoe) is key in promoting OFDI activities in the eastern and central regions, with the central region playing a greater role. The OFDI coefficient in the western region is negative but not significant. This may be because OFDI in the western region is mainly dominated by

Table 5. Panel threshold test results.

region	variables	threshold	F value	P value
overall	Prps	1.38	19.34	0.280
	Nsoe	2.65	15.29	0.587
	Fstru	0.50	58.53	0.047
eastern	Prps	2.43	18.65	0.220
	Nsoe	6.32	10.33	0.680
	Fstru	9.76	24.66	0.170
central	Prps	5.53	14.40	0.317
	Nsoe	7.45	13.75	0.260
	Fstru	5.56	15.29	0.187
western	Prps	0.18	16.37	0.253
	Nsoe	4.99	17.25	0.407
	Fstru	0.50	56.82	0.000

Source: Authors Calculation.

state-owned enterprises. Private enterprises are generally small in scale, and their ability to engage in OFDI is weak. In reality, the financing system (Fstru) has a significantly negative impact on OFDI in the eastern developed region. This indicates that the current financing structure has an inhibitory effect on OFDI in the eastern region. This is likely because it exceeds the threshold value. Therefore, testing whether a threshold effect exists is necessary. The financing system coefficient of the central and western regions is positive; however, only the coefficient of the central region is significant at the 5% level. This indicates that the financing structure is key in promoting OFDI in the eastern region but not in the western region. The reason may be that the development of the private economy in the western region is relatively backward, and its loans are used more for survival rather than development, let alone for overseas investment.

5.3. Threshold regression analysis

According to neoclassical economics, any input factor has a saturation point. Before the factor is fully utilised, marginal benefit may increase; however, when it exceeds the optimal proportion, marginal benefit will decrease, indicative of a mutation point. Soh et al. (2021) confirmed that the system has a threshold effect on the impact of logistics performance on foreign investment. Therefore, we believe that the impact of these three economic systems on China's OFDI may also have a mutation point.

To further explore the influence of each economic system on regional OFDI, we verify the threshold effect of the three core explanatory variables at the overall and subregional levels, respectively (Table 5). We find that at the overall level, only the threshold effect of the financing system is significant; moreover, at the regional levels, only the threshold effect of the financing system in the western region is significant. None of the three core explanatory variables in the central or eastern regions had a threshold effect. In addition, the threshold of the financing system at the overall level and in the western region is 0.5. Inspection shows that no double threshold exists between the two.

According to the threshold affect test results (Table 5), we present the threshold regression results of the financing system at the overall level and in the western region (Table 6). The last column originates from the last column results in Tables 3

Table 6. Panel threshold regression results.

region	variables	< threshold value	>threshold value	previous results
overall	Prps	-1.463*** (-6.81)	0.053 (1.44)	0.014 (0.443)
	Nsoe	1.413*** (7.64)	0.206*** (3.03)	0.244*** (2.996)
	Fstru	0.893*** (2.90)	-0.004 (-0.2)	-0.012 (-0.589)
western	Prps	-1.463*** (-6.4)	0.139 (1.83)	0.113 (0.696)
	Nsoe	1.153*** (7.45)	-0.103 (-0.89)	-0.124 (-0.843)
	Fstru	0.748*** (2.07)	0.055 (1.39)	0.018 (0.335)

Source: Authors Calculation.

and 4 and is placed here for comparative analysis. Overall, when the proportion of non-state-owned enterprise loans is less than the threshold of 0.5, the legal system of property rights (Prps) has a significantly negative impact on OFDI. When it is greater than the threshold, the coefficient of influence on OFDI turns positive; however, it is not significant. This demonstrates that overall, China's current financing structure is not very friendly to the OFDI activities of private enterprises and still needs improvement. For the market operation system, before and after the threshold value, it has a significant promoting effect on OFDI; however, this effect decreases. For the financing system itself, when the loan proportion of non-state-owned enterprises is less than the threshold value, it has a positive effect on OFDI overall. Conversely, when loan proportion is greater than the threshold value, the coefficient is negative but not significant. This was probably because of regional heterogeneity.

From the threshold regression results for the western region, the impact of the intellectual property rights protection system on OFDI before the threshold of the financing system is significantly negative. This coefficient becomes positive with an increase in the financing proportion of non-state-owned enterprises. This indicates that the inhibitory effect of the property rights protection system is improving; however, it is not significant. Similarly, coefficients of the market operation and financing systems have also become insignificant as the proportion of non-state-owned enterprise loans increases from a positive stimulus. This is mainly because companies that can invest overseas are usually large-scale, while the relatively backward western regions, such as Xinjiang and Tibet, have a special situation wherein state-owned enterprises have greater influence; hence, OFDI activities become dominated by state-owned enterprises. In the western region, private enterprises are usually small-scale, with a relatively small influence on the market and foreign investment. Increasing the proportion of private enterprises' bank loans can only support the survival and development of private enterprises and not their OFDI.

5.4. Robustness test

For robustness, this study uses the intellectual property protection index, the proportion of non-state-owned fixed asset investment in society, and the regional financial marketisation index (Fan et al., 2018) as proxy variables of the property rights

protection system, market operation system, and financing system for further verification. The test results were consistent with those in Tables 3 and 4. In the eastern region, the coefficient of the financing system is significantly negative, again showing that the financing system has an inhibitory effect on eastern OFDI. The impact of the market legal environment, market operation system, and financing system on OFDI in Central China is positive and significant at the 5% level. This indicates that three institutional variables have a positive incentive effect on OFDI in Central China. Coefficients of the three core variables in the western region are not significant. This indicates that the western region needs to strengthen the construction of the legal, market operation, and financing systems.

6. Conclusions and policy implications

6.1. Conclusions

This study selects data on OFDI flows of Chinese provinces from 2003 to 2019 to discuss the impact on China's OFDI from three key areas of the economic system. Overall, only the market operation system (Nsoe) has a significant impact on OFDI. Combined with the results of the threshold test, we find that the financing system has a threshold effect. When the financing ratio of non-state-owned enterprises is less than 0.5, the impact of the property rights protection system on OFDI is significantly negative, which verifies the absence effect of the system'. Simultaneously, the financing system has a positive incentive effect on OFDI. However, when the proportion of financing of non-state-owned enterprises exceeds the threshold, the coefficient of the property rights protection system becomes positive, indicating that the restraining effect of the property rights protection system is improving but not significant. The coefficient of the market operation system also becomes relatively small, and the coefficient of the financing system becomes negative and no longer significant. This may be because of regional heterogeneity.

Further regional heterogeneity analysis shows significant regional heterogeneity exists in the influence of the economic system on OFDI level. The coefficient of the property rights protection system in developed eastern coastal areas is not significant, and the market operation system has a positive incentive effect on OFDI. It is a "stepping-stone" of OFDI, which verifies the success of China's market-oriented reforms in the eastern region. However, the coefficient of the financing system is significantly negative, indicating that the current financing structure in the eastern region is not conducive to OFDI and is a "stumbling block"; The three core variables in the central region are all significantly positive, indicating that regardless of the property rights protection, market operation, or financing system, the institutional environment in the central region is the most friendly to OFDI. Conversely, for the relatively backward western regions, the coefficients of the three institutional variables are not significant.

Combined with the results of the threshold test, the western region is found to have a threshold effect on the financing system, and the threshold is 0.5. In the left range of the threshold value, the property rights protection system has a negative inhibitory effect on OFDI. Conversely, the market operation and financing systems have a positive promoting effect. However, in the right range of the threshold value,

the coefficient of the property rights protection system becomes positive. This indicates that the property rights protection system is changing from a “stumbling block” to a “stepping-stone”; however, it is not statistically significant. The coefficients of the market operation and financing systems do not change significantly mainly because in the special market environment in the western region, loans are transferred from large-scale state-owned enterprises with OFDI capability to small-scale private enterprises without OFDI capability.

6.2. Policy implications

Our results show that China’s OFDI is not only embedded in the home country’s various systems but also affected by system incentives and system weakening. Especially in the economic system reform process, on the one hand, the property rights protection system has become clearer, the legal system has become more complete, the business environment has improved, and market liberalisation level has increased. Moreover, the market order has become more standardised, and resources have become more optimally allocated. Theoretically, these firms have institutional incentives to seize global profit opportunities and conduct OFDI activities. However, on the other hand, the nature of enterprises has a heterogeneous impact on overseas investments. Private enterprises face invisible discrimination and institutional difficulties in the domestic market; hence, they should opt for “institutional escape” to overseas to seek a more efficient and relaxed market environment and overcome the institutional constraints of the home country. In the future, the Chinese government should focus on the issue of fairness and justice in the nature of enterprises, focus on reducing the number of enterprises forced to invest overseas because of “institutional escape”, and optimise the domestic institutional environment, which is conducive to the implementation of its domestic and international dual-cycle strategic goals.

Additionally, there are considerable differences in social and economic development among China’s regions, and the actual effects of the economic system on OFDI are different. In future development, each region should strengthen the construction of property rights protection systems according to its own situation, adhere to the leading role of the market in the resource allocation process, and optimise the financing structure of enterprises. Specifically, the eastern region should continue to maintain the existing market-oriented operational system, improve the financing structure of foreign-invested enterprises, and strengthen the construction of property rights protection systems. The western region should improve the level of market-oriented system construction, strive to strengthen the level of opening to the outside world, and use a combination of policy tools to encourage private enterprises to grow rapidly and become global. The central region should continue to strengthen the existing system construction.

Note

1. According to the regional division standard of China’s National Bureau of Statistics, the eastern region includes 11 provinces (municipalities directly under the central government): Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong and Hainan; The central region includes 8 provinces: Shanxi, Jilin,

Heilongjiang, Anhui, Jiangxi, Henan, Hubei and Hunan; The western region includes 12 provinces (autonomous regions and municipalities directly under the central government): Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang.

ORCID

He Xia  <http://orcid.org/0000-0001-7801-8743>

References

- Ameer, W., Xu, H., & Alotaish, M. S. M. (2017). Outward foreign direct investment and domestic investment: Evidence from China. *Economic Research-Ekonomska Istraživanja*, 30(1), 777–788. <https://doi.org/10.1080/1331677X.2017.1314824>
- Buckley, P. J., Clegg, J., Cross, A., Liu, X., Voss, H., & Zheng, P. (2007). The Determinants of Chinese Outward Foreign Direct Investment. *Journal of International Business Studies*, 38(4), 499–518. <http://www.jstor.org/stable/4540439> <https://doi.org/10.1057/palgrave.jibs.8400277>
- Chen, Z. Y. (2016). Host country's political institutions and the location choice of Chinese outward foreign direct investment: A quantitative study based on OFDI from Chinese enterprises between 2000 and 2012. *World Economics and Politics*, 11, 129–156.
- Chen, Q., & Han, B. S. (2020). To escape or not: How does institutional constraints and support affect Chinese firms' OFDI? *Journal of China Studies*, 23(3), 103–140. <https://doi.org/10.20288/JCS.2020.23.3.103>
- Child, J., & Marinova, S. (2014). Reflections on the commentaries. *Management and Organization Review*, 10(3), 405–409.
- Christofi, M., Vrontis, D., & Makrides, A. (2022). Exploring the role of institutions in Chinese OFDI: A systematic review and integrative framework. *Asia Pacific Business Review*, 1–27. <https://doi.org/10.1080/13602381.2022.2013607>
- Dunning, J. H. (1990). *Explaining international production*. Routledge.
- Fan, G., & Wang, X. L. (2011). Contribution of marketization to China's economic growth. *Economic Research Journal*, 46(09), 4–16.
- Fan, G., Wang, X. L., & Hu, L. P. (2018). *China's marketization index report by province*. Social Sciences Academic Press.
- García, C., Salmerón, R., García, C., & García, J. (2020). Residualization: Justification, Properties and Application. *Journal of Applied Statistics*, 47(11), 1990–~2010. <https://doi.org/10.1080/02664763.2019.1701638>
- Han, B. (2021). Does china's ofdi successfully promote environmental technology innovation? *Complexity*, 2021, 1–13. <https://doi.org/10.1155/2021/8389560>
- Holtbrügge, D. (2018). Political strategies of Chinese firms in Germany: An institutionalist perspective. *International Journal of Emerging Markets*, 13(6), 1438–1456. <https://doi.org/10.1108/IJoEM-11-2017-0431>
- Huang, L., Liu, H., Hou, J., & Xiao, F. (2021). Long-term financing effects of Chinese non-SOEs belt and road OFDI. *Accounting and Finance*, <https://doi.org/10.1111/acfi.12841>
- Ji, X. B., & Ge, S. Q. (2015). Impact of institutional environment of home country on China's OFDI: A study from perspective of micro-enterprises. *Journal of International Trade*, 03, 76–85.
- Jiang, J. G., & Wang, L. J. (2014). A study on the economic institutions and OFDI. *World Economy Studies*, 01, 59–65.
- Li, F., Liang, T., & Zhou, X. (2021). How does intellectual property protection in the host country affect outward foreign direct investment? *Research in International Business and Finance*, 58, 101476. <https://doi.org/10.1016/j.ribaf.2021.101476>

- Li, X., & Zeng, K. (2019). To join or not to join? State ownership, commercial interests, and China's Belt and Road Initiative. *Pacific Affairs*, 92(1), 5–26. <https://doi.org/10.5509/20199215>
- Li, S., Zhao, L., & Shen, H. (2021). Foreign direct investment and institutional environment: The impact of bilateral investment treaties. *Applied Economics*, 53(30), 3514–3535. <https://doi.org/10.1080/00036846.2021.1883535>
- Luo, Y., Xue, Q., & Han, B. (2010). How emerging market governments promote outward FDI: Experience from China. *Journal of World Business*, 45(1), 68–79. <https://doi.org/10.1016/j.jwb.2009.04.003>
- Lv, Y., Lou, C. R., Lv, Y. L., & Wang, Y. (2019). Financial development and “one belt, one road” greenbelt investment: heterogeneity analysis based on the characteristics of home country and target market. *World Economic Papers*, 02, 37–55.
- Qiao, P., Lv, M., & Zeng, Y. (2020). R&D intensity, domestic institutional environment, and SMEs' OFDI in emerging markets. *Management International Review*, 60(6), 939–973. <https://doi.org/10.1007/s11575-020-00432-9>
- Ramamurti, R., & Hillemann, J. (2018). What is “Chinese” about Chinese multinationals? *Journal of International Business Studies*, 49(1), 34–48. <https://doi.org/10.1057/s41267-017-0128-2>
- Ren, B., Liang, H., & Zheng, Y. (2012). *An institutional perspective and the role of the state for Chinese OFDI*. Palgrave Macmillan.
- Saikia, M. (2021). Foreign direct investment and institutions: A case of Indian firms. *The Journal of International Trade & Economic Development*, 1–14.
- Soh, K. L., Wong, W. P., & Tang, C. F. (2021). The role of institutions at the nexus of logistic performance and foreign direct investment in Asia. *The Asian Journal of Shipping and Logistics*, 37(2), 165–173. <https://doi.org/10.1016/j.ajsl.2021.02.001>
- Tripathi, V. and Thukral, S. (2018). Determinants of financing of outward foreign direct investment by Indian MNEs: A three-level analysis. *International Journal of Emerging Markets*, 13(5), 1154–1181. <https://doi.org/10.1108/IJoEM-12-2016-0333>
- Wan, W. P., & Hopkinson, R. E. (2003). Home country environments, corporate diversification strategies, and firm performance. *The Academy of Management Journal*, 46(1), 27–45.
- Wang, B., & Gao, K. (2019). Forty years development of China's outward foreign direct investment: Retrospect and the challenges ahead. *China & World Economy*, 27(3), 1–24. <https://doi.org/10.1111/cwe.12278>
- Wu, X. J., & Tan, X. X. (2018). Influence of home country's intra-national institution quality on overseas market's entry mode for Chinese private enterprise. *Journal of Management Science*, 31(04), 120–134.
- Yamakawa, Y., Peng, M. W., & Deeds, D. L. (2007). What drives new ventures to internationalize from emerging to developed economies? *Entrepreneurship: Theory and Practice*, 32(1), 59–82.
- Yang, Y., & Li, X. (2021). The quality of host government and China's OFDI: Construction of micro-evaluation model of government quality. *Journal of Asian Economics*, 74, 101313. <https://doi.org/10.1016/j.asieco.2021.101313>
- Zhang, X. W., Huang, Z. M., & Jiang, S. H. (2021). The impact of twoway FDI on total factor productivity in China and countries of the belt and road initiative. *Economic Research-Ekonomska Istraživanja*, 1–21. <https://doi.org/10.1080/1331677X.2021.1984268>