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The Impact of Digital Inclusive Finance on China's Outward Foreign Direct Investment— An Empirical Analysis Based on Panel Data from 31 Chinese Provinces

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ABSTRACT

This paper employs a two-way fixed effects model and uses panel data from 31 provinces of China between 2012 and 2022 to empirically analyze the impact of digital inclusive finance on China's Outward Foreign Direct Investment (OFDI). The study finds that, overall, the development of digital inclusive finance in China significantly promotes OFDI. Its sub-dimensions, including coverage breadth and usage depth, have a significant positive impact on OFDI across Chinese provinces. Further analysis reveals that the sub-dimensions of usage depth, such as credit and payment, also have a significant effect on OFDI in various provinces. In addition, the control variable of economic development level significantly positively influences OFDI in China. Regional regression results indicate that the development of digital inclusive finance in central and western China significantly promotes OFDI in these regions, while the effect is not significant in the eastern region. Policy Recommendations: China should accelerate the development of a digital inclusive finance system and promote financial innovation. It is crucial to focus on the coordinated development of various digital inclusive finance indicators, narrow the financial service gap between regions, and thus foster the long-term development of China's outward foreign direct investment.

KEYWORDS

Digital Inclusive Finance; Outward Foreign Direct Investment; Financing Constraints; Product Innovation

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1. Introduction and Literature Review

Against the backdrop of an increasingly complex and volatile global economic landscape, the rapid growth of China's outward foreign direct investment (OFDI) has become a prominent phenomenon in the global economy. With sustained rapid economic growth and rising global influence, China has gradually transformed from a capital-importing country to a major capital-exporting nation. This transformation is not only the inevitable result of domestic economic restructuring and industrial upgrading, but also reflects China's strategic positioning in actively participating in the international division of labor, resource allocation, and economic cooperation within the process of globalization.

Relevant studies in firm trade theory suggest that in underdeveloped financial markets, firms face greater financing constraints, which can hinder their ability to engage in international trade. Since outward foreign direct investment (OFDI) requires even more costs than international trade, it demands a greater amount of capital. As a result, the question of how financial development impacts firms' outward investment has become a key focus of current research.

The 2016 G20 summit first defined the concept of digital inclusive finance, which involves upgrading and transforming traditional financial services through emerging digital technologies to provide scientific, standardized, affordable, and sustainable financial services. With China's continued economic growth and structural transformation, the rapid development of financial technology, especially digital inclusive finance, is profoundly changing the internationalization strategies and foreign investment patterns of Chinese enterprises. The advancement of digital technologies has not only improved the efficiency and inclusiveness of the domestic financial system, but also provided Chinese enterprises with more financing channels and risk management tools, thereby reducing the barriers to overseas investment. Particularly under the Belt and Road Initiative, digital inclusive finance has facilitated the flow of capital and the convenience of cross-border payments, offering new momentum and guarantees for Chinese enterprises to expand overseas markets and increase foreign direct investment. Therefore, the rapid development of financial technology is closely related to the growth of foreign direct investment, and studying its impact on China's foreign direct investment from the perspective of digital inclusive finance is of great practical significance.

Research on the factors influencing outward foreign direct investment (OFDI) has primarily focused on the following aspects. Dunning (1981) pointed out that the scale of a country's OFDI is typically positively correlated with its level of economic development. Dunning (2001) suggested that the attraction of foreign investment strengthens the ownership advantages of the country's overseas investment institutions, thus promoting its OFDI. Kravis and Lipsey (1982) found that the degree of a country's foreign trade development has a significant positive impact on its OFDI level, with the scale of OFDI increasing as trade openness grows. Haq (2001) argued that R&D expenditure is a key factor influencing the outward investment behavior of U.S. manufacturing firms. Flores and Aguilera (2007) discovered that cultural differences between the U.S. and other countries significantly reduce both its OFDI and its ability to attract foreign investment. Blonigen (2005) suggested that political corruption in the host country may, to some extent, suppress OFDI from the investor's home country.

Research on the relationship between financial development and outward foreign direct investment (OFDI) has primarily focused on financial deepening. Buckley et al. (2007) found that the OFDI activities of Chinese firms are influenced by the level of capital market development and institutional quality in host countries. Mendoza et al. (2009), from the perspective of asset demand, discovered that countries with higher levels of financial development can provide more diversified insurance options, making it easier to cope with investment and endowment risks. They concluded that consumers in highly financially developed countries are more inclined to hold high-risk, high-return assets such as FDI. Manova (2013) suggested that the development of financial markets can alleviate firms' financing constraints by improving the financing environment, thereby promoting OFDI. Rajan and Zingales (1998)

pointed out that improving financial development levels can promote economic growth, expand market share, and thus attract more foreign investment.

Although existing literature widely explores the relationship between foreign direct investment (OFDI) and various economic factors (such as economic development level, foreign investment, degree of openness, etc.), research on the specific role and mechanisms of digital inclusive finance in promoting OFDI remains relatively scarce. Many studies have focused on how traditional financial systems support enterprise internationalization, but few scholars have delved into how digital financial technologies, especially digital inclusive finance, influence investment decisions and the effectiveness of outward investments in the global market. The unique contribution of this study lies in filling this gap by highlighting the key role of digital inclusive finance in OFDI and exploring how it drives the internationalization process of Chinese enterprises through mechanisms such as reducing financing constraints and fostering product innovation. This study reveals how digital inclusive finance overcomes the limitations of traditional financial systems and provides more opportunities for small and medium-sized enterprises (SMEs) in the process of globalization. Therefore, this research not only deepens the theoretical framework of the relationship between digital inclusive finance and OFDI but also provides empirical evidence for policymakers and enterprises on how to leverage financial technology to promote international investment. The study uses panel data from 31 provinces in China and employs relevant econometric models to empirically test the impact of digital inclusive finance on China’s foreign direct investment.

2. Theoretical Analysis

In recent years, an increasing number of scholars have focused on the relationship between digital inclusive finance and outward foreign direct investment (OFDI). Wang et al. (2023), using a regional digital inclusive finance index, explored the potential channels through which digital inclusive finance affects firms' OFDI. They found that firms with lower financing constraints exhibited higher levels of OFDI, and further research revealed that digital inclusive finance made it easier for firms to obtain loans, thereby promoting their OFDI levels. Demertzis et al. (2018) argued that digital inclusive finance, by matching financial resources with the risk characteristics of various business projects, allocates resources to firms with greater loan demand and investment opportunities, effectively solving the problem of credit misallocation in traditional finance, and increasing the likelihood of firms securing credit. This, in turn, provides sufficient external funding for firms' OFDI. Fan et al. (2024), using data from listed Chinese companies, studied the impact of digital inclusive finance on firms' OFDI and found that digital inclusive finance promotes OFDI, with this effect being more pronounced in non-state-owned enterprises. Further research revealed that firms increased their OFDI levels by alleviating financing constraints and promoting technological innovation. Therefore, this paper discusses the impact of digital inclusive finance on China's OFDI from the following two aspects.

2.1. The Development of Digital Inclusive Finance Affects China's OFDI Through Firms' Financing Constraints

For a long time, China’s capital markets have faced challenges such as underdevelopment, inconsistent regulations, policy restrictions, and biases in the credit market. These issues have led to varying degrees of financing obstacles for many enterprises, especially small and medium-sized enterprises (SMEs). Digital inclusive finance, by providing broader financing channels, has reduced the financing costs and barriers for enterprises, particularly SMEs. Through technologies such as big data analysis and artificial intelligence-based risk control, financial institutions can more accurately assess the credit risk of businesses, offering financial support to small enterprises that have been unable to secure funding from traditional banks. This financing accessibility directly influences

enterprises' internationalization decisions, making capital more easily accessible and thus promoting foreign direct investment (FDI). Buch et al. (2009) found that alleviating financing constraints significantly impacts enterprises' exports and outward investments. In their 2014 study, Buch et al. established a model for how financing constraints affect foreign investment decisions and used data from German companies to empirically test it. Their findings revealed that financing capacity plays a crucial role in foreign direct investment decisions. M. Lin et al. (2013) argued that digital inclusive finance can assess creditworthiness based on enterprises' online transaction data, customer reviews, patents, and other factors. The increased transparency of information directly reduces information asymmetry between enterprises and financial institutions, lowering financing costs and reducing lending risks for financial institutions. Bachas et al. (2018) suggested that digital inclusive finance can improve the financing environment, resolve information asymmetry between the financial sector and enterprises, reduce financing thresholds, and provide multi-layered financing channels, thereby alleviating enterprises' financing constraints. This development has reduced the difficulty for SMEs in accessing funds and enhanced their ability to participate in international direct investment.

2.2. The Development of Digital Inclusive Finance Affects China's OFDI Through Firms' Product Innovation

Digital inclusive finance not only provides financial support to enterprises but also encourages them to innovate and expand their markets through innovative financial products such as digital payments and smart contracts. In particular, the application of blockchain technology has made cross-border payments more efficient and transparent, reducing the friction costs of international transactions and further stimulating investment and innovation activities by enterprises on a global scale. This innovation has driven the international competitiveness of enterprises and increased their enthusiasm for foreign investment. From the perspective of international investment, the monopolistic advantage theory emphasizes that enterprises engage in foreign direct investment (FDI) based on unique product advantages. Correspondingly, the theory of uneven development suggests that enterprises are also motivated to undertake FDI in order to access innovative resources. In short, both product innovation and the pursuit of innovative resources can promote enterprises' investment motivations in international markets. HYMER (1967), based on the monopolistic advantage theory, concluded that enterprises will only engage in FDI when they possess a specific product advantage. Ozilid (2018) pointed out that digital inclusive finance can use digital technologies to help financial institutions identify high-value innovative projects, thus increasing investment in innovation for startups. Laeven et al. (2015) found that under the digital inclusive finance model, the use of big data technology to collect, organize, and analyze logistics, business flow, and capital flow data from different industries and regions enables the model to accurately identify the funding needs of long-tail small and micro enterprises. This reduces the information asymmetry caused by traditional finance and effectively alleviates the financing difficulties faced by SMEs in carrying out innovation activities.

Based on the above, the hypothesis is proposed that digital inclusive finance has a positive and significant impact on China's OFDI.

3. Econometric Model and Explanatory Variables

3.1. Empirical Model

Based on the provincial macro panel data of China from 2012 to 2022, this paper uses the latest Digital Inclusive Finance Development Index (the fifth issue) from the Peking University Digital Finance Research Center as the core explanatory variable, which comprehensively measures the development status of this index across regions. At the

same time, this paper selects the outward foreign direct investment (OFDI) flow data for each province published in the "Statistical Bulletin of China's Outward Foreign Direct Investment" as the dependent variable, aiming to explore whether the development of digital inclusive finance in each province has a positive impact on its OFDI activities. To enhance the robustness and accuracy of the model, this paper applies a natural logarithmic transformation to all variables. This step effectively avoids potential heteroscedasticity issues, ensures the independence of interactions between variables, and guarantees the reliability of the econometric analysis results. The following baseline econometric model is constructed:

$$\ln OFDI_{it} = \beta_0 + \beta_1 \ln DFI_{it} + \beta_2 \ln PGDP_{it} + \beta_3 \ln R\&D_{it} + \beta_4 \ln TZ_{it} + \beta_5 \ln MY_{it} + \lambda_i + \mu_t + \varepsilon_{it} \quad (1)$$

In this model, the dependent variable $OFDI_{it}$ is represented by the outward foreign direct investment flow of province i in year t, after taking the logarithmic transformation. This reflects the OFDI flow for province i in year t. β_0 is the intercept, and i and t represent the province and year, respectively. The core explanatory variable DFI_{it} represents the value of digital inclusive finance for province i in year t, also log-transformed. The control variable $PGDP_{it}$ represents the per capita GDP of province i in year t, reflecting the economic development level, and is log-transformed. $R\&D_{it}$ represents the technological research and development investment of province i in year t, reflecting the level of technological innovation, and is also log-transformed. TZ_{it} represents the actual foreign direct investment utilized by province i in year t, reflecting the level of foreign capital dependence, and is log-transformed. MY_{it} represents the export trade volume of goods for province i in year t, reflecting the level of trade dependence, and is log-transformed. λ_i represents the individual effect, μ_t represents the time effect, and ε_{it} is the random error term.

3.2. Variable Settings

Based on the reliability, availability, and integrity of the data, the situation of Tibet's outward foreign direct investment is relatively unique. Information was obtained by reviewing various years of the Statistical Yearbook and announcements issued by the Statistics Bureau. For certain years, data was supplemented by adjacent provinces. This study selected macroeconomic data from 31 provinces (excluding Hong Kong, Macau, and Taiwan) from 2012 to 2022 for empirical analysis.

3.2.1. Dependent Variable

This study selects the OFDI flow data of Chinese provinces from 2012 to 2022 as the dependent variable to represent the OFDI of each province within this time frame, and the logarithm is taken. The OFDI flow data is converted to the local currency using the average exchange rate of RMB to USD from 2012 to 2022. The data for the dependent variable comes from the China Outward Foreign Direct Investment Statistical Bulletin. In the bulletin, the regional OFDI data only includes non-financial data, so this study selects the non-financial flow data from the statistical report. Due to the presence of negative and zero values in the flow data for certain provinces in specific years, to avoid biases in model estimation caused by directly excluding these samples, data transformation is applied.

$$\ln(OFDI) = \ln\left(OFDI + \sqrt{OFDI^2 + 1}\right) \quad (2)$$

3.2.2. Core Explanatory Variable

This study focuses on the Digital Inclusive Finance Indicator System developed by the Digital Finance Research Center of Peking University, using it as the core explanatory variable to analyze its impact on OFDI across Chinese

provinces. This indicator system comprehensively covers three main dimensions: breadth, depth, and digitization. The depth dimension is further refined into several specific aspects, including payment, insurance, and credit, which together depict the rich connotations of digital inclusive finance. Given the limitations in data availability and the need for completeness, this study, during its in-depth analysis, focuses primarily on the impact of the three sub-dimensions—payment, insurance, and credit—on China's OFDI.

3.2.3. Control Variables

In addition to the aforementioned influencing factors, several other factors also affect China's OFDI. The control variables selected in this study are the level of economic development, technological innovation level, foreign investment dependence, and trade dependence. The level of economic development is represented by the per capita GDP of each province for the corresponding year, and the logarithm is taken (lnPGDP). The level of technological innovation is represented by the research and development expenditure of each province for the corresponding year, and the logarithm is taken (lnR&D). Foreign investment dependence is represented by the actual foreign direct investment used by each province for the corresponding year, and the logarithm is taken (lnTZ). Trade dependence is represented by the merchandise export trade value of each province for the corresponding year, and the logarithm is taken (lnMY). The data for these control variables come from the National Bureau of Statistics. Table 1 shows the descriptive results for each variable.

Table 1. Descriptive Results of Variables.

Variable Symbol	Observations	Mean	Standard Deviation	Minimum Value	Maximum Value
lnOFDI	341	11.028	1.815	0.233	17.899
lnDFI	341	5.489	0.419	4.119	6.133
lnbreadth	341	5.389	0.502	3.492	6.122
lndepth	341	5.452	0.421	3.948	6.236
lndigitization	341	5.768	0.342	4.673	6.147
lncredit	341	5.013	0.501	3.024	5.716
lnpayment	341	5.247	0.526	2.793	5.939
lninsurance	341	6.211	0.41	4.645	6.859
lnPGDP	341	1.686	0.445	0.639	2.944
lnR&D	341	4.37	1.141	1.428	7.064
lnTZ	341	7.65	1.894	0.728	11.715
lnMY	341	0.012	0.019	0.001	0.115

4. Empirical Results Analysis

4.1. Overall Regression

In exploring the effect of digital inclusive finance on China's outward foreign direct investment (OFDI), this study uses the Modified Wald and Wooldridge tests as analytical tools to identify potential issues of heteroscedasticity and serial correlation in the data. The analysis results show the presence of heteroscedasticity, but no evidence of serial correlation, which lays the foundation for further analysis. To ensure the robustness and accuracy of the regression results, this study addresses potential interference from multicollinearity between the core explanatory variables and control variables by using Hoechle's (2007) method for regression estimation. This method simultaneously deals with key issues in the model, including heteroscedasticity, serial correlation, and multicollinearity. Specifically, this study constructs a two-way fixed effects model for regression analysis, which effectively enhances the reliability of the estimation results. The regression results are presented in Table 2, where Column (1) focuses on the overall impact of digital inclusive finance on China's OFDI, Columns (2) to (4) examine the impact of three key components of the core explanatory variable—breadth of coverage, depth of usage, and

degree of digitization—on China's OFDI, and Columns (5) to (7) explore the impact of three sub-dimensions of usage depth—credit, payment, and insurance—on China's OFDI. These categorized studies aim to investigate the differentiated impact of each sub-dimension on China's OFDI. The research findings indicate that the development of digital inclusive finance in China's provinces significantly promotes outward foreign direct investment activities. Further segmentation shows that both breadth of coverage and depth of usage, as the two key sub-dimensions of digital inclusive finance development, have a significant positive effect on China's provincial OFDI. In contrast, the degree of digitization, one of the key sub-dimensions of digital inclusive finance, does not have a significant impact on China's provincial OFDI. A possible reason for this is that the digitalization of digital inclusive finance can improve the accessibility and liquidity of capital, but the capital flows involved in foreign direct investment (FDI) are more complex, encompassing factors such as capital markets, exchange rate risks, and corporate mergers and acquisitions. While digitalization improves payment and financing channels, it does not directly address key factors in cross-border investment, such as political risks, tax issues, or market demand. Among the sub-dimensions of usage depth, credit and payment have a significant positive impact on China's OFDI. In addition to the variables of interest, it is found that the logarithmic value of per capita GDP, representing the level of economic development, and the logarithmic value of total merchandise import and export, representing the level of trade dependence, both have significant coefficient values. Moreover, the logarithmic value of per capita GDP across provinces is positively significant.

Table 2. Regression Results of the Impact of Digital Inclusive Finance on OFDI - Two-Way Fixed Effects Regression.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
lnaggregate	3.438*						
	(1.994)						
lnbreadth		2.284***					
		(4.191)					
lndepth			2.702***				
			(4.009)				
lndigitization				-0.591			
				(-0.411)			
lncredit					0.951**		
					(2.814)		
lnpayment						1.729***	
						(6.669)	
lninsurance							0.488
							(0.833)
lnPGDP	4.018*	3.642**	4.244**	4.742**	4.131**	4.988**	4.894**
	(2.212)	(2.299)	(2.697)	(2.900)	(2.439)	(2.691)	(2.878)
lnR&D	0.218	0.266	0.297	0.256	0.350	0.283	0.198
	(0.716)	(0.877)	(0.949)	(1.024)	(0.970)	(0.906)	(0.661)
lnFDI	-0.135	-0.137	-0.125	-0.131	-0.107	-0.130	-0.138
	(-0.838)	(-0.872)	(-0.747)	(-0.838)	(-0.675)	(-0.768)	(-0.914)
lnTrade	-32.501**	-37.717**	-25.998**	-16.680	-26.604**	-25.492*	-14.388
	(-2.292)	(-2.837)	(-2.521)	(-1.684)	(-2.230)	(-2.127)	(-1.536)
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Provincial Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	341	341	341	341	341	341	341
R2	0.727	0.729	0.730	0.722	0.727	0.735	0.722
F	210.913	246.159	168.382	188.104	255.138	89.806	1194.842

*Note: ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.*

4.2. Regional Difference Regression

Economic policies and development levels differ across regions, so how does digital inclusive finance affect China's OFDI in different regions? This study divides China into three major regions—Western, Central, and Eastern—based on different economic and policy backgrounds to investigate the regional differences in how digital

inclusive finance influences OFDI in each province. The regional difference regression results are shown in Table 3. (1) The digital inclusive finance index significantly promotes OFDI in the Central and Western regions, with the effect being stronger in the Central region than in the Western region. However, it does not have a significant promotional effect in the Eastern region. The possible reasons are as follows: First, unlike the central and western regions, the eastern region is more economically developed and has a more mature financial market and financing channels. Enterprises in the eastern region are already able to secure ample funding through traditional banks, capital markets, and other channels, so the impact of digital inclusive finance is relatively smaller. Second, the eastern region has developed a relatively complete outward-oriented economy and industrial chain, with higher levels of outward investment and internationalization. Government policies supporting outward foreign direct investment (OFDI) are also more mature, and enterprises can already obtain the necessary funding through traditional financial channels. Therefore, the role of digital inclusive finance in the eastern region may be more of a supplementary one to existing investment methods, rather than a core driving force. Third, digital infrastructure in the eastern region is already relatively well-developed, with a high penetration rate of the internet and widespread use of electronic payments. As a result, the influence of digital inclusive finance is relatively small. Finally, foreign investment in the eastern region is mainly led by large enterprises, which have strong capital strength and market influence, enabling them to obtain the necessary funding for overseas investments through traditional banking channels, capital markets, and other means. For these enterprises, while digital inclusive finance can provide convenient payment and financing services, its role is often replaced by traditional financing channels, making its impact on OFDI in the eastern region relatively small. (2) Research on the impact of the second-level sub-dimensions of digital inclusive finance on OFDI in different regions shows that in the Western region, both the breadth of coverage and the depth of usage significantly promote outward foreign direct investment, while the degree of digitization does not have a significant impact. In the Central region, the breadth of coverage significantly promotes OFDI, while the depth of usage and the degree of digitization do not show significant effects. In the Eastern region, the impacts of breadth of coverage, depth of usage, and digitization on OFDI are not significant. (3) The impact of the three sub-dimensions of usage depth on OFDI also shows regional differences. In the Western region, both payment and credit have a significant positive effect on OFDI, with payment having a greater impact. In the Central region, insurance has a significant positive effect on OFDI. In the Eastern region, the effects of credit, payment, and insurance on OFDI are not significant.

Table 3. Regional Difference Regression of the Impact of Digital Inclusive Finance on OFDI.

	(1)	(2)	(3)
Variable	Western Region	Central Region	Eastern Region
lnaggregate	9.271*	6.293**	-1.301
	(2.200)	(2.706)	(-0.552)
lnbreadth	7.526***	3.618**	-0.903
	(3.353)	(2.444)	(-0.825)
lndepth	4.747***	1.618	0.194
	(3.732)	(1.365)	(0.187)
lndigitization	-2.823	0.351	0.441
	(-0.865)	(0.165)	(0.442)
lncredit	1.468**	-0.775	-0.604
	(2.803)	(-0.965)	(-0.463)
lnpayment	2.718***	-0.130	-0.521
	(10.088)	(-0.187)	(-1.293)
lninsurance	1.401	1.931***	0.074
	(0.627)	(10.741)	(0.127)
Control Variables	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes

Provincial Effects	Yes	Yes	Yes
Observations	132	88	121
F	3396.59	212.73	108.84

*Note: ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Due to the extensive nature of the empirical results, the results in the table above are organized after each variable is individually included in the model.*

4.3. Robustness Test

This study thoroughly examines the impact of the digital inclusive finance index and its sub-indicators in Chinese provinces on OFDI across these provinces. Therefore, the various indicators in the data are crucial to the research findings. To ensure the rigor and accuracy of this study, performing robustness tests is a critical step. The following robustness test methods were implemented in this study: (1) Dividing the time period for regression: The time period selected for the data is from 2012 to 2022, which is divided into two sub-periods: 2012 to 2016 and 2017 to 2022. The digital inclusive finance index and its sub-indicators are respectively included in Model (1) for regression analysis during these two periods to observe their impact on OFDI in Chinese provinces. As shown in Columns 2 and 3 of Table 4, the significance of each dimension in this robustness test is generally consistent with the previous findings, confirming the validity of the hypotheses tested in this study. (2) Changing the model specification: In the original model, the first-order lag of each key explanatory variable is added and regressions are conducted to observe their impact on OFDI in Chinese provinces. The coefficients of the indicators are presented in Column 4 of Table 4. In this regression, the coefficients of the indicators remain largely consistent with those in the overall regression.

In summary, the regression results demonstrate good robustness and are not significantly affected by model adjustments or changes in time. Overall, it confirms that digital inclusive finance has a positive promoting effect on OFDI across Chinese provinces.

Table 4. Robustness Test of the Impact of Digital Inclusive Finance on Outward Foreign Direct Investment (OFDI).

	Segment the time period		Change the model
Variable	2012-2016	2017-2022	
lnaggregate	1.003**	7.519	8.453***
	(3.312)	(1.354)	(3.958)
lnbreadth	1.545**	5.845	-4.361
	(4.597)	(1.815)	(-0.943)
lndepth	2.125**	-0.127	3.931**
	(2.781)	(-0.035)	(3.234)
lndigitization	-2.463	4.443	1.446*
	(-1.912)	(1.414)	(1.889)
lncredit	0.604	2.031	0.984*
	(1.694)	(1.760)	(2.026)
lnpayment	1.551***	-2.869*	-1.580
	(7.724)	(-2.484)	(-0.937)
lninsurance	1.128	0.178	2.461**
	(0.788)	(0.092)	(2.450)
Time Effects	Yes	Yes	Yes
Provincial Effects	Yes	Yes	Yes
Observations	155	186	310

*Note: ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively. Due to the extensive nature of the empirical results, the results in the table above are organized after each variable is individually included in the model.*

5. Conclusion and Recommendations

5.1. Conclusion

Digital inclusive finance has a significant positive impact on China's OFDI. The regression results are consistent with the theoretical analysis in this study, demonstrating from both theoretical and empirical perspectives that digital inclusive finance promotes China's OFDI. The robustness test confirms this conclusion. In the analysis of sub-dimensions of digital inclusive finance, it was found that both the breadth of coverage and the depth of usage have significant positive effects on OFDI in Chinese provinces. Further investigation into the depth of usage reveals that credit and payment have significant positive effects on OFDI in these provinces. Additionally, the level of economic development also has a significant positive impact on OFDI in China. The regional difference analysis examines the impact of digital inclusive finance on OFDI in different regions of China. It was found that the development of digital inclusive finance significantly promoted outward foreign direct investment in the Western and Central regions, but no significant effect was observed in the Eastern region. This result reveals the regional differences in the impact of digital inclusive finance.

5.2. Recommendations

Digital inclusive finance, with its advantages in lowering financing thresholds and stimulating product innovation, helps enterprises expand overseas. Therefore, accelerating the construction of a comprehensive digital inclusive finance ecosystem and promoting financial innovation is crucial. The goal is to provide diversified financial services for businesses, strengthen financial support for small and medium-sized enterprises (SMEs) in terms of credit, and encourage companies to go global and expand investment operations. The promoting effects of the sub-dimensions of digital inclusive finance on China's OFDI vary. Therefore, in the process of supporting enterprises in outward foreign direct investment, it is important to focus on the balanced and coordinated development of key indicators and to pay greater attention to weaker indicators. Regional differences in economic development may affect the deepening of China's OFDI. Therefore, it is necessary to promote balanced economic growth across the Western, Central, and Eastern regions, reduce the geographical gap in financial services, and strengthen the breadth, depth, and digitization of digital inclusive finance services nationwide, particularly in areas like payments, insurance, and credit, ensuring coordinated development in these fields.

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Conflict of interest

All the authors claim that the manuscript is completely original. The authors also declare no conflict of interest.

Author contributions

Conceptualization: Li, Z.; Investigation: Li, Z.; Writing – original draft: Li, Z.; Writing – review & editing: John Paredes.

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