

Research on the Impact of Host Country's Digital Economy Development on China's OFDI

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Abstract: In the era of global digitalization, the digital economy of host countries has become a key driver of China's outward foreign direct investment (OFDI). Drawing on China's investment flows to 100 countries from 2013 to 2021, this study employs an extended gravity model incorporating the TIMG Digital Economy Index and its four dimensions—technology, infrastructure, market, and governance. The results show that host countries' digital economy levels significantly enhance China's OFDI, with the findings remaining robust under variable substitution and sub-sample regressions. Among the four dimensions, digital technology exerts the strongest marginal effect, followed by infrastructure, market, and governance. Furthermore, high-income economies and Belt and Road countries demonstrate greater attractiveness for Chinese capital due to the combined effects of digital dividends and policy coordination. Overall, the expansion of host countries' digital economies not only enlarges the scale of China's OFDI but also improves its locational distribution.

Keywords: digital economy, Chinese OFDI, TIMG

1. Introduction

UNCTAD (2025)[1] reports two-year FDI contraction amid surging data-driven digitalization. While extant work centers on home-country factors, evidence on how host digitalization shapes Chinese OFDI is scarce. Using 2013-2021 data and an augmented gravity model with the TIMG index, we ask: (1) does host digitalization raise OFDI? (2) how do technology, infrastructure, market, and governance differ in impact? (3) do effects vary by income or Belt and Road membership?

2. Selection of Variables

2.1 Model Setting

The gravity model was initially used to analyse the impact of GDP and distance variables on trade volume, and with the depth of the research, more variables have been included in the gravity model to extend its application scope. This paper combines the influence factors of China's outward FDI in the host country to construct the investment gravity model as follows:

$$\ln\text{OFDI}_{ijt} = \hat{\alpha}_0 + \beta_1 \ln\text{TIMG}_{jt} + \beta_2 \ln\text{POP}_{jt} + \beta_3 \ln\text{FTD}_{jt} + \beta_4 \text{ID}_{jt} + \mu_{ij} \quad (1)$$

2.2 Data description

(1) Explained Variables.

Outward foreign direct investment (OFDI). This paper takes OFDI flows as the core indicator, and the data are obtained from the Statistical Bulletin of China's Outward Foreign Direct Investment for the calendar years of 2013-2021.

(2) Core explanatory variables.

Building on the TIMG index developed by Wang et al. (2021)[2], the digital-economy TIMG index — constructed from four dimensions (digital technology, infrastructure, market, and governance)[3]. Missing observations are removed and data timeliness is enhanced, yielding a balanced panel of 100 economies for 2013–2021.

(3) Control Variables.

Host-country population (POP) is employed as a proxy for market size; larger markets are expected to exert greater pull on foreign capital.

Foreign Trade Dependence (FTD) is measured by total imports scaled to GDP, and higher FTD is anticipated when foreign capital serves as a key driver of economic growth[4].

Institutional distance (ID) denotes the divergence in formal and informal institutions between home and host nations; larger distances are associated with elevated cross-border investment risk. Within the gravity-model framework, ID functions

as a non-physical “distance” determinant of capital flows.

3. The Empirical Results of the Analysis

3.1 Benchmark regression

According to the data in Table 1, the sign of the coefficients of each explanatory variable is consistent with the theoretical expectation, except for the institutional distance, the population size and total exports have passed the significance test. The coefficient of TIMG is 2.971, which is significant at 1% significance level, which indicates that the development of the digital economy has a significant positive effect on the promotion of OFDI.

Table 1. Benchmark regression results

Var	(1)	(2)	(3)	(4)
Ln_TIMG	2.971*** (12.723)	2.148*** (7.274)	2.222*** (6.892)	2.294*** (6.984)
Ln_POP		3.156*** (4.464)	3.233*** (4.282)	3.018*** (3.879)
Ln_FTD			0.737** (2.137)	0.751** (2.176)
ID				-0.390 (-1.139)
N	898	898	808	808
adj. R^2	0.065	0.086	0.098	0.098

Note: t-values in parentheses; * p<0. 1, ** p<0. 05, *** p<0. 01.

3.2 Robustness test

The results show that all four indicators of digital economy are positively significant at 1% significance level, and the robustness of the benchmark regression can be verified. (1) Digital technology has the largest impact, highlighting the key role of innovation capacity and human capital in promoting investment activities. (2) The impact of digital infrastructure on foreign investment is also significant, indicating that countries along the route should vigorously strengthen the breadth of coverage and construction quality of digital infrastructure. (3) The positive effects of digital market and digital governance are also significant, so host countries need to support the development of digital trade, as well as strengthen the construction of digital government if they want to attract Chinese OFDI.

Table 2. Robustness test results

Replacement Var	(1)	(2)	(3)	(4)
Technology	2.094 *** (6.095)			
Infrastructure		2.005*** (13.227)		
Market			1.720*** (11.790)	
governance				1.662*** (8.106)
Control variables	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
N	898	898	898	895

3.3 Heterogeneity test

(1) Distinguishing between income types.

Comparing the coefficients of the regression results in Table 3, except for the low-income countries, all the other groups are positive and significant, and compared with the lower-middle-income and upper-middle-income countries, the facilitating effect of the development of the digital economy on capital inflows to China from high-income countries is significant. The reason for this difference lies in the fact that digital technology and rules are still dominated by high-income countries on the one hand, and on the other hand, emerging economies are constrained by the dual constraints of capital and capacity, and digital infrastructure generally lags behind[5].

Table 3. Heterogeneity test by “income type”

	(1) High-income	(2) Upper middle-income	(3) Lower middle-income	(4) Low-income
Ln_TIMG	5.413*** (11.099)	2.360*** (4.616)	2.266*** (12.536)	0.813 (1.137)
Control Var	Yes	Yes	Yes	Yes
N	403	261	198	36

(2) Belt and Road versus Non-Belt and Road Economies.

The heterogeneity tests reported in Table 4 were conducted. (1) Irrespective of Initiative membership, host-country digital advancement significantly enhances Chinese capital inflows^[6]. (2) The digital-economy elasticity of OFDI is larger in Belt-and-Road countries (3.286) than in non-Belt-and-Road countries (2.574). This disparity likely reflects the prevalence of developing economies — characterized by fragile digital infrastructure — within the Belt and Road sample, allowing Chinese firms to generate higher marginal returns through digital-enabled investments.

Table 4. Heterogeneity test of “Belt and Road”

	(1) Along the Belt and Road	(2) Countries not along the route
Ln_TIMG	3.286*** (9.377)	2.574*** (8.223)
Control Variables	Yes	Yes
N	396	520

4. Conclusion and Countermeasure Suggestion

4.1 Main conclusions

Nine-year panel evidence from 100 countries shows that host-country digitalization — measured by the TIMG index — significantly raises Chinese OFDI, with technology contributing most, followed by infrastructure, market and governance. High-income economies attract more capital via superior digital-regulatory advantages, while low-income hosts remain insignificant. Belt-and-Road countries, combining policy incentives with infrastructure gaps, display the highest elasticity.

4.2 Policy Recommendations

Firms should embed the host-country TIMG index ex ante in digital-location assessments and prioritize asset-light, platform-based entry into Belt-and-Road economies that combine advanced digital technologies with large infrastructure gaps. Bilateral investment-treaty upgrades should codify rules on cross-border data flows and digital taxation; a dedicated Silk Road Fund–ADB facility should deploy blended finance to BRI members with weak digital backbones but strong cooperation incentives; and periodic Country-Specific Digital-Economy Risk Maps should be issued to guide outbound investors. Through public–private coordination, host-country digital dividends can be leveraged to sustain high-quality Chinese OFDI.

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