



The Effects of Financial Openness on FDI in China: Evidence from Provincial Data

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Abstract. This study examines the impact of financial openness on foreign direct investment (FDI) across Chinese provinces and whether this relationship changes with local institutional quality. Using provincial panel data from 2000 to 2023, the paper estimates two-way fixed-effects models with province and year effects. Financial openness is measured from a de facto perspective, while institutional quality is proxied by the Fan Gang marketization index. The results suggest that the effect of financial openness on FDI is not uniform. Instead, financial openness is more likely to attract FDI when it is supported by stronger institutions. The findings point to a practical policy message: provinces cannot rely on financial openness alone; institutional improvement and basic investment conditions, especially infrastructure, remain important complements.

Keywords: financial openness, FDI inflows, institutional quality, China, provincial panel data

1 Introduction

Foreign direct investment (FDI) has been one of the main channels through which China has received capital, technology, management experience, and links to international production networks. It has also played a role in regional industrial upgrading. At the same time, FDI is not evenly distributed across Chinese provinces. Coastal and more market-oriented provinces tend to attract more foreign investment, while many inland provinces receive less. This uneven pattern suggests that local conditions still matter, even under the same national policy framework ^[1, 2].

Financial openness is often expected to help attract foreign capital. A province that is more connected to cross-border capital flows may face fewer financing frictions and may send a clearer signal to foreign investors. However, financial openness alone may not be enough. If local institutions are weak, foreign investors may still face uncertainty, unclear rules, and higher transaction costs. For this reason, this study examines not only whether financial openness affects FDI, but also whether its effect depends on institutional quality.

The paper contributes in three ways. First, it shifts the focus from the national level to the provincial level, which is important in China because provinces differ greatly in financial openness, market development, infrastructure, and institutional environment.

Second, it studies financial openness and institutional quality in the same empirical framework. Third, it compares two de facto measures of financial openness, so the interpretation is not driven by one indicator.

2 Literature Review and Hypotheses

Financial openness refers to the extent to which an economy is connected to international capital flows and financial markets. Existing studies usually distinguish between de jure openness, which reflects formal rules and capital account restrictions, and de facto openness, which captures actual cross-border financial activity^[3-5]. For Chinese provinces, de facto measures are more suitable because capital account policy is mainly decided at the national level, while provincial differences are more visible in actual capital flows and financial linkages^[6, 7].

The expected relationship between financial openness and FDI is generally positive. More open financial conditions may make it easier for foreign investors to enter, finance projects, and operate in local markets. Empirical evidence, however, is mixed. Some studies find a positive association, while others show that the effect depends on the broader economic and institutional setting^[8, 9]. This is why a simple direct-effect model may miss an important part of the story.

Institutional quality is another major factor behind investment decisions. Strong institutions reduce uncertainty, make market rules more predictable, and lower transaction costs^[10]. Earlier research also shows that governance and institutional quality are closely related to a host economy's ability to attract FDI^[11-14]. In this paper, institutional quality is measured by the Fan Gang marketization index, which captures cross-provincial differences in market-oriented institutional development^[15].

The main argument is that financial openness and institutions work together. Financial openness may expose a province to foreign capital, but foreign investors are more likely to respond when local institutions make the market environment credible and predictable.

3 Data, Variables, and Model Specification

Following Brambor et al.'s guidance on interaction-model interpretation^[16] and Okada's application of financial openness-institution interactions to international capital flows^[17], this paper employs a two-way fixed-effects model with province and year effects. The analysis follows a three-step design: Model (1) includes only the controls, Model (2) adds financial openness and institutional quality, and Model (3) adds their interaction term. This structure separates baseline, direct, and conditional effects.

The three specifications are as follows:

$$FDI_{it} = \beta_0 + X'it\beta + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

$$FDI_{it} = \beta_0 + \beta_1 FO_{it} + \beta_2 Inst_{it} + X'it\beta + \mu_i + \lambda_t + \varepsilon_{it} \quad (2)$$

$$FDI_{it} = \beta_0 + \beta_1 FO_{it} + \beta_2 Inst_{it} + \beta_3 (FO_{it} \times Inst_{it}) + X'it\beta + \mu_i + \lambda_t + \varepsilon_{it} \quad (3)$$

Here, Y_{it} denotes provincial FDI inflow; X_{it} is the vector of controls; FO_{it} denotes financial openness; INS_{it} denotes institutional quality; and μ_i and τ_t capture province and year fixed effects. The interaction term $(FO_{it} \times Inst_{it})$ shows whether institutional quality changes the effect of financial openness on FDI inflows.

The hypotheses are therefore: H1, institutional quality is positively associated with FDI inflows; H2, financial openness is positively associated with FDI inflows; and H3, institutional quality strengthens the positive effect of financial openness on FDI inflows.

The study uses provincial panel data from 2000 to 2023. The final sample contains 611 province-year observations. The dependent variable is provincial FDI inflow, measured as actual FDI inflows in 10,000 CNY. The controls capture provincial characteristics that may affect FDI: Log GDP reflects market size; higher education proxies human capital; transport network density captures infrastructure and connectivity; and industrial structure reflects tertiary-sector development [1, 2, 18].

Financial openness is measured from a de facto perspective through actual cross-border capital activity. FO1 is the preferred baseline measure because it excludes inward FDI and reduces potential mechanical overlap with the dependent variable. FO2 is retained as a broader alternative measure but is interpreted with caution because it includes inward FDI intensity. Institutional quality is proxied by the Fan Gang marketization index. The definitions and measurement methods of the main variables are summarized in Table 1.

Table 1. Main Variables

Variable	Definition
FDI inflow	Actual provincial FDI inflows, measured in 10,000 CNY.
Financial openness (FO1)	FO1 = $1/2(OFDI_{it}/GDP_{it} + FDL_{it}/TDL_{it})$: equal-weighted index of outward FDI intensity and foreign deposit-loan exposure; excludes inward FDI.
Financial openness (FO2)	FO2 = $1/3(FDI_{it}/GDP_{it} + OFDI_{it}/GDP_{it} + FDL_{it}/TDL_{it})$: full equal-weighted index including inward FDI intensity, outward FDI intensity, and foreign deposit-loan exposure.
Institutional quality	Fan Gang marketization index, used as a proxy for provincial institutional quality.
Controls	Log GDP, higher education, transport network density, and industrial structure.

4 Empirical Results

Table 2 reports a clear three-step comparison of the fixed-effects estimates. FO1 is estimated in the baseline, main-effects, and interaction specifications. FO2 is reported for the main-effects and interaction specifications because the baseline-control model is identical when no openness measure is included. This design separates baseline effects, direct effects, and conditional effects.

Table 2. Financial Openness, Institutional Quality, and FDI Inflows

	FO1	FO1	FO1	FO2	FO2
	(1) Baseline	(2) Main effects	(3) Interaction	(4) Main effects	(5) Interaction
Log GDP	28,083	-544,788	-383,151	-368,455	-634,816
	(1,037,858)	(1,031,988)	(1,028,567)	(999,080)	(950,505)
Higher Education	-2,520	-2,430	-1,771	-2,216	-430
	(2,114)	(2,089)	(2,094)	(2,018)	(1,932)
Transport Network Density	4,127,133***	3,689,783***	3,606,448***	3,306,919***	3,406,430***
	(710,669)	(711,476)	(708,546)	(688,324)	(654,556)
Industrial Structure	-2,046,916	-2,485,834	-3,461,662	-3,067,416	-1,731,106
	(3,803,579)	(3,750,593)	(3,750,168)	(3,632,655)	(3,458,083)
FO1		-654,415	-54,259,261**		
		(6,831,557)	(21,722,667)		
FO2				52,890,816***	-111,260,220***
				(8,739,135)	(22,766,044)
Institutional Quality		752,495***	647,376***	713,882***	227,740
		(174,210)	(177,974)	(168,841)	(172,364)
FO1 × Institutional Quality			8,438,372***		
			(3,247,862)		
FO2 × Institutional Quality					25,637,548***
					(3,310,397)
_cons	1,364,751	2,311,154	1,985,229	515,025	4,632,884
	(9,180,429)	(9,055,690)	(9,010,013)	(8,768,768)	(8,353,915)
Province FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	611	611	611	611	611
Within R-squared	0.312	0.334	0.342	0.375	0.436

Notes: The dependent variable is provincial FDI inflow, measured in 10,000 CNY. Columns (1)-(3) report the FO1 specifications, and Columns (4)-(5) report the FO2 specifications. Standard errors are reported in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$.

4.1 Baseline Controls

The baseline-control specification is reported in Column (1). Transport network density is positive and statistically significant, suggesting that infrastructure remains an important locational advantage for foreign investors. Log GDP, Higher Education, and Industrial Structure are not statistically significant in the baseline specification.

4.2 Direct Effects of Financial Openness and Institutional Quality

Financial openness and institutional quality are included in Columns (2) and (4). Both direct-effects models suggest that better institutional quality is significantly associated with higher FDI inflows. However, the direct effect of financial openness is significant only when the broader FO2 measure is used. This difference should be read carefully because FO2 includes inward FDI intensity; therefore, FO1 remains the cleaner baseline measure, while FO2 serves as a broader comparison.

4.3 Interaction Effect

Columns (3) and (5) include the interaction term between financial openness and institutional quality. This is the key specification because it tests whether the effect of financial openness depends on the local institutional environment. In both the FO1 and FO2 specifications, the interaction terms are positive and statistically significant at the 1% level. The main coefficients on FO1 and FO2 should therefore be read together with the interaction terms rather than in isolation.

Figure 1 illustrates this pattern. Under FO1, the marginal effect is weak or negative at lower institutional levels but becomes positive as institutions improve. Under FO2, the marginal effect remains positive across the observed range and also increases with institutional quality. Overall, the figure supports the regression results: financial openness is more effective in attracting FDI in provinces with stronger institutional conditions.

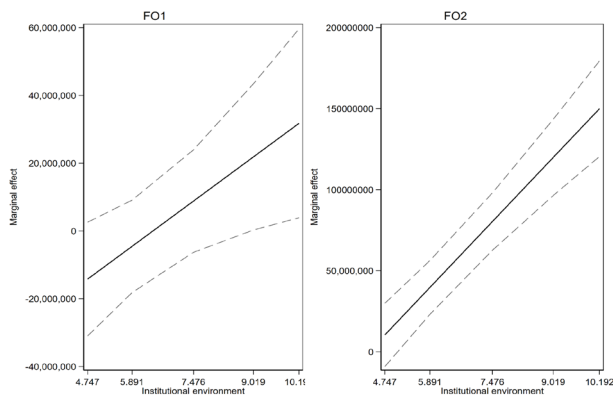


Fig. 1. Marginal Effect of Financial Openness on FDI Across Levels of Institutional Quality

Overall, the results suggest a conditional story rather than a simple openness story. A province may be more connected to international financial flows, but this does not automatically lead to higher FDI. Foreign investors still care about reliable contracts, predictable policies, and clear market rules. When institutional quality is stronger, financial openness is more likely to become a real investment advantage.

This interpretation fits China's provincial setting. Provinces share the same national framework, but they differ in marketization, administrative efficiency, legal support, and factor-market development. The comparison between FO1 and FO2 also strengthens the interpretation: FO1 avoids overlap with the dependent variable, yet it still shows a positive and significant interaction effect.

5 Conclusion and Policy Implications

This paper examines how financial openness, institutional quality, and their interaction relate to provincial FDI inflows in China from 2000 to 2023. The evidence shows that financial openness does not have a uniform direct effect. Instead, provinces with stronger market-oriented institutions are better able to translate openness into foreign investment.

The results suggest that financial openness works through local conditions. Cross-border financial links may reduce financing frictions and signal global integration, but investors respond more strongly when rules are predictable, contracts are reliable, and supporting infrastructure is in place. Thus, provincial FDI policies should combine financial opening with institutional improvement rather than relying on openness alone.

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