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The Impact of Institutional Investor Shareholding on Corporate Innovation Investment: An Empirical Study Based on Ownership and Regional Differences

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Abstract. Innovation is not only a major driving force for national economic growth but also a key driver for enterprise development, making its ability to promote enterprise innovation a hot topic. This research takes Chinese A-share listed firms from 2015 to 2024 as its subject of study, utilizing a fixed - effects model to investigate the influence of institutional investor stock ownership on corporate innovation investment, and further analyzes its differential performance under different ownership structures and regional backgrounds. Empirical evidence suggests that institutional investor ownership tends to curb corporate innovation activities. This effect appears to be particularly strong among state-owned enterprises in the eastern region. Furthermore, the results suggest that the governance role played by institutional investors varies significantly across different contexts; different institutional environments and enterprise attributes significantly influence the direction and intensity of its effect. This research broadens the scope of inquiry into the nexus between institutional investors and corporate innovation input from a heterogeneous perspective, which provides valuable insights into the role of the capital market in the innovation-driven development process.

Keywords: Institutional Investors, Corporate Innovation, Inhibitory Effect

1. Introduction

As the fundamental engine of economic growth, innovation has emerged as a critical pathway to cultivating competitive superiority. Previous studies have shown that enterprise technological innovation is not only affected by the macro-institutional environment and industry characteristics, but also closely related to the characteristics of the enterprise itself and its corporate governance structure. As an important participant in the capital market, institutional investors are becoming more and more influential in corporate governance. According to the A-share Investor Structure Panorama report, as of the third quarter of 2025, the proportion of A-share circulating market value held by institutional investors has reached 62.81%, and more than 90% of listed companies have institutional shareholders [1]. This shows that institutional investors not only play a key role in resource allocation, but are also gradually becoming an important external force affecting corporate business decisions and long-term strategies.

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Currently, there are differing opinions in academia concerning the role of institutional investors on corporate innovative activity. On the one hand, institutional investors may be constrained by performance evaluations and liquidity, thus tending to pursue short-term gains and inhibiting long-term investment in corporate innovation [2,3]. On the other hand, the information advantages and governance capabilities possessed by institutional investors may also drive corporate innovation by supervising management and alleviating financing constraints [4,5]. A dualistic function has been ascribed to institutional investors within a subset of the literature, and their impact on corporate innovation is determined by the specific institutional environment and behavioral motivations [6,7].

Current research mostly focuses on analyzing overall samples, neglecting to adequately address firm heterogeneity and regional differences. China's regional economic development exhibits an uneven trend, with state-owned enterprises and private firms differing in governance structures and institutional constraints. These factors can potentially impact the governance effectiveness of institutional investors. Therefore, based on a 2015–2024 panel of Chinese non-financial A-share firms, this paper applies a fixed-effects to empirically analyze the impact of institutional investor shareholding on firm innovation input, and further explores its differences under different ownership structures and regional backgrounds. This paper aims to reveal the mechanism by which institutional investors influence firm innovation and their context-dependent characteristics, thereby providing a reference for related research and policy formulation.

2. Theory and research hypotheses

2.1. Basic theory

2.1.1. Principal-agent theory

Agency theory posits that the divorce of ownership from control within a corporation engenders potential divergences in the interests of managers and shareholders. Institutional investors, as key external governance entities, can mitigate agency problems through shareholding oversight and participation in governance. However, the effectiveness of such governance may vary across different contexts.

2.1.2. Short-sighted institutional theory

This theory suggests that certain institutional investors, due to performance assessments and liquidity pressures, are more likely to prioritize short-term returns over long-term corporate development. Under such incentives, institutional investors may exert market pressure or governance intervention to pressure management to reduce investment in long-term innovation with high uncertainty, thereby inhibiting corporate innovation.

2.1.3. Information asymmetry theory

This theory indicates that a gap exists between internal information and external investor information, which can potentially reduce resource allocation efficiency. Institutional investors possess strong information acquisition and analysis capabilities, which can mitigate information asymmetry to some extent. However, if this information advantage is primarily used for short-term investment decisions, it may increase market focus on short-term performance, indirectly affecting corporate innovation investment decisions.

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2.2. Research hypotheses

Institutional investors, as a significant external force, are often influenced by performance pressures and liquidity constraints, leading to a short-term profit orientation. Compared to general investment projects, corporate innovation activities typically involve high investment, high risk, and long return cycles, which inherently conflict with institutional investors' pursuit of short-term returns. In this situation, institutional investors may use governance intervention or market pressure to inhibit corporate innovation activities.

Considering these factors, we propose Research Hypothesis 1:

H_1: Institutional investor shareholding has a significant inhibitory effect on corporate innovation.

The effect exerted by institutional stakeholders on innovation may be constrained by both the characteristics of corporate ownership and regional development. State-owned enterprises are relatively less reliant on external capital for innovation activities, thus limiting the scope and marginal impact of institutional investors in governance. In the more developed capital markets of eastern China, the institutional investors who seek short-term returns are more likely to constrain corporate innovation investment. In contrast, market constraints are relatively weaker in central and western regions of China, where institutional investor governance is more focused on resource support and information intermediation, resulting in a relatively limited inhibitory effect on corporate innovation.

Taking these factors into account, we put forward Research Hypothesis 2:

H_2: Relative to the central and western regions, the inhibitory effect of institutional investor shareholding on innovation in state-owned enterprises is more significant in the eastern region.

3. Research design

3.1. Sample selection and data sources

The study employs a 2015–2024 sample of Chinese A-share firms, relying on CSMAR for all financial and governance data. In response to the missing or abnormal cases of certain years or companies in the sample data, this paper implements corresponding processing measures for all sample data: (1) ST or *ST companies were removed, as the data of these companies lacks sufficient representativeness; (2) Samples with missing key variable data were removed to preserve the robustness of the regression findings; (3) Samples of the relatively special financial industry in the financial statement data were removed; (4) All continuous variables are winsorized at the 1% and 99% levels to mitigate the impact of outliers. After processing, 30,742 samples were finally obtained for empirical analysis.

3.2. Variable design and measurement

3.2.1. Dependent variable

The dependent variable—Research and Development Intensity (RDI): Calculated by taking the logarithm of the company's annual R&D investment and operating revenue as disclosed in its annual report. The smaller this value, the stronger the company's R&D intensity.

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3.2.2. Explanatory variable

The explanatory variable is the Institutional Investor Shareholding Ratio (INST), which measures the proportion of listed company shares held by institutional investors.

$$INST = \frac{\text{Total institutional holdings}}{\text{Circulating A shares}} \tag{1}$$

3.2.3. Control variables

Referring to previous research, this paper selects relevant control variables including Firm size, Leverage level, Cashflow ratio, Top1 Shareholder's shareholding ratio, SOE, Balance, and Listage.

The names, symbols, and definitions of these variables are shown in Table 1 below.

Table 1. Names, symbols, and definitions of variables

Type	Name	Symbol	Definition
Dependent Variable	R&D intensity	RDI	Ln (the ratio of a company's R&D investment in period t to its operating revenue in period t)
Explanatory variables	Institutional shareholding ratio	INST	Total institutional shareholding / Circulating A shares
Control variables	Firm size	Size	Ln (Total Assets of the Enterprise)
	Leverage level	Lev	Total Liabilities / Total Assets
	Cashflow ratio	Cashflow	Net cash flow from operating activities / Total assets
	Listage	ListAge	Ln (current year - year of listing + 1)
	Top1 Shareholder's shareholding ratio	Top1	Number of shares held by the largest shareholder / total number of shares outstanding
	State of Equity	SOE	State-owned enterprises are represented by 1, and non-state-owned enterprises by 0.
	Shareholding Concentration	Balance	The sum of the shareholding percentages of the second to fifth largest shareholders / the shareholding percentage of the largest shareholder

3.3. Model construction

This paper constructs a fixed-effects model to test the research hypotheses, after controlling for the main variables affecting the level of firm innovation:

$$\mathrm{RDI}_{i,t} = \alpha + \beta \times \mathrm{INST}_{i,t-1} + \gamma \times \mathrm{X}_{i,t-1} + \theta_i + \delta_t + \varepsilon_{i,t} \tag{2}$$

Where i represents the enterprise, t represents the year, RDI represents the enterprise's innovation and R&D investment, the core explanatory variable INST represents the institutional investor shareholding ratio, $\mathrm{X}_{i,t-1}$ are all control variables, covering the basic characteristic indicators of the enterprise, the model also introduces individual fixed effects θ_i and year fixed effects δ_t, and $\varepsilon_{i,t}$ is a random disturbance term.

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4. Regression results and analysis

4.1. Descriptive analysis

Table 2 reports the summary statistics for the primary variables. RDI registers a mean of −3.426 and a standard deviation of 1.265, suggesting that the overall level of innovation investment is generally modest and varies considerably across firms. The mean INST is 0.747%, indicating that they have become an important shareholder, albeit with pronounced heterogeneity in ownership stakes across individual firms. From the perspective of control variables, Size and Cashflow are relatively stable, while growth fluctuates to some extent. In terms of equity structure, SOE account for 28.2%, and the concentration of equity is relatively prominent, which may constrain enterprise innovation decisions.

Table 2. Descriptive statistics

Variables	Observations	Mean	S.D.	Min	Max
INST	30742	0.747	0.91	0.001	6.038
RDI	30742	-3.426	1.265	-7.824	-0.954
Size	30742	22.251	1.284	19.493	26.332
Lev	30742	0.398	0.199	0.055	0.907
Cashflow	30742	0.051	0.066	-0.144	0.249
ListAge	30742	1.984	0.97	0	3.401
Top1	30742	33.05	14.445	8.38	73.82
Ecbelt	30742	0.264	0.441	0	1
SOE	30742	0.278	0.448	0	1
Balance	30742	0.811	0.63	0	4

4.2. Benchmark regression results

Table 3. Benchmark regression

	RDI
INST	-0.043***
	(-8.110)
Size	-0.088***
	(-10.141)
Lev	-0.326***
	(-10.278)
Cashflow	-0.701***
	(-13.502)
ListAge	-0.032***
	(-2.793)

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Table 3. (continued)

Top1	0.005***
	(7.070)
Balance	0.068***
	(5.061)
Cons	-1.451***
	(-7.789)
Year	YES
i	YES
N	30427
R^2	0.901

Note: t-statistics in parentheses. ***p <0.01, **p <0.05, *p <0.1.

The baseline regression results are shown in Table 3.

Under firm and year fixed effects, INST yields a coefficient of −0.043, significant at the 1% level. This finding implies that an increase in INST is linked to a decline in firm RDI, reflecting a consistent negative association and lending support to Hypothesis H1.

Size and RDI show a significant negative correlation, indicating that larger firms are relatively more cautious about R&D investment with high uncertainty. The Lev shows a significant negative impact, indicating that highly leveraged firms are more inclined to reduce long-term investment to mitigate financial risk when facing debt repayment pressure. The Cashflow coefficient is negative and significant, reflecting that firms are more inclined to meet short-term operating needs. Overall, control variable estimates conform largely to expectations derived from prior work, consistent with a well-specified model.

4.3. Heterogeneity analysis

To further explore how the effect of institutional investors on corporate innovation varies across different economic contexts, the sample is divided by ownership type and region, and separate regressions are conducted. The corresponding results are reported in Table 4.

Table 4 shows that INST exerts an adverse influence on most subsamples, suggesting a general restraining influence on firms' R&D investment. In the SOE sample, the estimated INST coefficient within the eastern region stands at −0.054 and attains statistical significance at the 1% threshold, whereas the analogous coefficient for firms located in the central and western provinces registers at a statistically indistinguishable −0.020. This indicates that the inhibitory effect of institutional investors on innovation investment is more pronounced among eastern-based SOEs, thereby providing support for Hypothesis H2.

The capital market in the eastern region is more developed, where firms are subject to tighter market discipline and stronger investor oversight. Institutional investors can more easily influence corporate decisions through shareholder rights and market pressure, and under the short-term performance orientation, they will constrain high-risk, long-cycle innovation investment [8]. In contrast, the central and western regions are characterized by lower levels of marketization and information transparency, which weakens the governance role of institutional investors, so no obvious inhibitory effect is shown. In the Non-SOE sector, institutional investors exhibited a significant negative impact in both the eastern and central-western regions, indicating that their

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short-sighted tendencies are more prevalent in enterprises with higher levels of marketization. However, such regional disparities were far less evident among non-state firms, further illustrating that the interplay between institutional background and enterprise nature is a crucial factor influencing the governance effectiveness of institutional investors.

Table 4. Enterprise ownership and regional differences

	Non-SOE in the East	Non-SOE in the Central and Western	SOE in the East	SOE in the Central and Western
	RDI	RDI	RDI	RDI
INST	-0.023***	-0.045***	-0.054***	-0.020
	(-4.076)	(-3.122)	(-3.350)	(-0.789)
Size	-0.083***	-0.087***	-0.147***	-0.043
	(-8.641)	(-3.660)	(-5.267)	(-1.155)
Lev	-0.215***	-0.429***	-0.465***	-0.282**
	(-6.051)	(-5.329)	(-4.450)	(-2.225)
Cashflow	-0.716***	-0.841***	-0.784***	-0.442**
	(-12.720)	(-6.011)	(-5.048)	(-2.215)
ListAge	0.088***	0.047	-0.175***	-0.111
	(7.176)	(1.544)	(-3.647)	(-1.595)
Top1	0.003***	0.000	-0.002	0.006**
	(2.907)	(0.137)	(-1.158)	(2.015)
Balance	0.069***	-0.054	-0.044	0.112*
	(4.577)	(-1.451)	(-0.973)	(1.775)
Cons	-1.493***	-1.348***	0.338	-2.880***
	(-7.184)	(-2.629)	(0.551)	(-3.686)
Year	YES	YES	YES	YES
i	YES	YES	YES	YES
N	17257	4635	5112	3373
R2	0.906	0.889	0.906	0.862

Note: t-statistics in parentheses. ***p <0.01, **p <0.05, *p <0.1.

5. Conclusion

This paper explores the impact of institutional investor shareholding on corporate innovation investment, analyzing its heterogeneous characteristics from the perspectives of corporate ownership and regional differences. The main conclusions are as follows:

First, institutional investor shareholding exerts a negative effect on firms' innovation investment. Empirical evidence suggests that, under the current capital market conditions, institutional investors generally exhibit a certain short-term orientation.

Second, this effect is disproportionately concentrated among SOEs in eastern China, implying that both the institutional environment and the level of marketization play important moderating roles.

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Despite these findings, several limitations should be acknowledged. For example, it lacks further differentiation between different types of institutional investors and the use of instrumental variables or quasi-natural experiment methods to mitigate potential endogeneity issues.

Future research could extend this study in several directions: First, further subdivide institutional investor types to explore their differentiated governance effects; second, combine policy shocks or institutional changes with more rigorous identification strategies to improve causal inference capabilities; third, introduce indicators such as patent quality to better assess corporate innovation behavior.

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