A Study on the Impact of Corporate Profit Margins on Innovation Resilience and Their Mechanisms

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Abstract. Against the backdrop of accelerating economic globalization and digital transformation, corporate profit margins provide crucial support for enhancing corporate innovation resilience (CIR). Drawing on panel data from Chinese listed companies for the period 2011–2022, this study employs a two-way fixed-effects model to comprehensively assess the impact of corporate profit margins on CIR, as well as their spatial spillover effects. The study found that corporate profit margins significantly enhance CIR, and this conclusion holds even after conducting a series of robustness tests.

Keywords: Corporate profit margins; innovation resilience; financing constraints; strategic flexibility.

1 Introduction

As global economic competition intensifies, innovation has become the core driver of sustainable business development. In today's increasingly digital and globalized world, businesses face unprecedented market pressures and uncertainties. Particularly in the face of rapid changes in the environment, technology, and competitive landscape, companies must possess strong innovative resilience to stand out amid these challenges and maintain their competitiveness. Innovation resilience refers to a company's ability to adapt flexibly and continue driving innovation in the face of external shocks; this capability is directly linked to the company's long-term survival and development. However, many companies today still face challenges such as insufficient innovation capacity and difficulties in transformation. How to enhance corporate innovation resilience (CIR) has become a critical issue in today's economic landscape.

Against this backdrop, corporate profit margins—as key indicators of operational efficiency and market competitiveness—have increasingly been recognized as critical factors influencing a CIR. At the policy level, the government has vigorously promoted an innovation-driven development strategy, setting the goal of "enhancing corporate innovation capabilities" and utilizing various incentive measures to foster technological innovation among enterprises. However, although many firms have secured capital and resource support by improving their profit margins, a significant number have failed to effectively enhance their CIR when faced with external uncertainties. Whether this

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phenomenon is directly related to corporate profit margins—and, in particular, how profit margins influence a CIR—has not yet been fully explored. Therefore, the research question of this paper is: How do corporate profit margins influence a CIR?

Although previous studies have shown that profit margins have a significant impact on firms' investment decisions and resource allocation, there remains a lack of systematic explanations regarding the underlying mechanisms linking profit margins to CIR. The research contributions of this paper are threefold: First, in terms of theoretical contributions, this paper expands the scope of CIR theory by constructing a framework that examines the relationship between corporate profit margins and CIR, and identifies profit margins as a key determinant of CIR; Second, in terms of methodological innovation, this study employs a two-way fixed-effects model. Through empirical analysis of panel data, it overcomes potential endogeneity issues and accurately reveals the mechanism through which profit margins influence CIR.

2 Literature Review

Existing studies indicate that profit margins not only reflect a firm's financial condition but also profoundly influence its resource allocation and strategic choices. Jefferies[1] examined corporate profit margins in major U.S. industries using industry-specific data from the Internal Revenue Service (IRS) for 1994–2020. Fargher and Zhang [2] examined, from the perspective of investor protection, how the level of investor protection in different countries affects the extent to which profit margin information is used in macroeconomic forecasting. Liu and Qin[3] found that R&D investment and government-business interaction have a significant complementary effect on corporate profits. Li et al.[4] found that this policy can enhance supply chain resilience by improving the level of digital transformation, reducing financing constraints, and promoting collaborative innovation among enterprises.

CIR refers to a firm's ability to sustain innovation activities amid uncertainty and external shocks; in recent years, it has become a key topic in research on corporate sustainable development. Drawing on panel data from 30 provinces and municipalities in China, Xia et al. [5] examined the mechanisms underlying the enhancement of CIR in the digital age from the perspective of cross-organizational collaboration. Chu and Long[6] constructed a three-dimensional corporate resilience index system comprising "resistance—recovery—development." They found that R&D innovation significantly enhances corporate resilience, with the upgrading of human capital structure serving as a mediating factor. Mörth and Kuttner [7] found that a long-term orientation, sustainable products, organizational flexibility, and close, trusting stakeholder relationships all contribute to enhancing corporate resilience. Zheng et al.[8] found, in the context of small rural tourism enterprises, that innovation activities significantly improve firm performance. Hortovanyi and Szepesi[9] found that, within the context of global value chains, firms adopt four types of strategies when facing uncertainty shocks.

Based on the above analysis, this paper aims to systematically examine the impact of corporate profit margins on CIR and its underlying mechanisms from both theoretical and empirical perspectives. After reviewing the above literature, we have identified

the following issues in existing research. First, there is a lack of systematic research on the relationship between profit margins and CIR.

3 Policy Context, Theoretical Analysis, and Research Hypotheses

Profit margins serve as a crucial financial foundation for enterprises to engage in innovation activities; therefore, there is a natural link between profit margins and CIR. Through a quasi-experimental study examining the impact of establishing big data pilot zones on the supply chain resilience of manufacturing firms, Liu and Zou[10] found that Profit margins significantly enhances supply chain resilience, primarily through three channels: promoting digital transformation, stimulating innovation capacity, and optimizing the match between supply and demand. Wang and Li[11] found that new-quality productive forces significantly promote the enhancement of urban economic resilience, with the modernization of industrial structure, increased entrepreneurial activity, and the intelligent innovation of enterprises serving as key mechanisms. Arcuri et al. [12] employed an accelerated failure time model to examine the impact of innovation on firm survival. Based on this, we propose the following hypothesis:

H: Improvements in corporate profit margins can significantly enhance a company's resilience to innovation.

4 Empirical Analysis

4.1 Empirical Model

To examine the impact of corporate profit margins on CIR, this paper constructs the following econometric model:

$$EIR_{it} = \alpha + \beta profit_{it} + \gamma X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

In the equation,i and t denote firm and year respectively; EIR_{it} represents the CIR of firm i in year t;$profit_{it}$ represents the profit of firm i in year t; X_{it} represents the control variables; μ_i denotes the firm-specific fixed effect;λ_t denotes the year-specific fixed effect;ε_{it} is the random error term. This paper focuses on the estimated coefficient β of the core explanatory variable $profit$.If it is significantly positive, it indicates that an increase in firm profit margins helps enhance the CIR.

4.2 Related Variables

The dependent variable in this study is CIR, which reflects a firm's ability to maintain the continuity, stability, and resilience of its innovation activities in the face of external shocks, rising uncertainty, or increasing operational pressures. Unlike simple innovation output or efficiency, CIR focuses more on a firm's adaptability and sustainability under stressful conditions. Given the research topic and data availability, this study

employs CIR index to measure a firm's overall capacity to sustain innovation activities in complex environments. The core explanatory variable in this study is corporate profit margin, which serves as a key indicator of a firm's profitability and its ability to self-finance. A higher profit margin implies that a firm possesses ample internal funds and stronger resource allocation capabilities, which help it maintain R&D investment, stabilize its innovation team, and continue to advance innovation activities in the face of external shocks. Therefore, this study employs the corporate profit margin indicator ($profit$) to examine its impact on CIR.

4.3 Data Source

The data in this paper is derived from the year-end balance sheets of publicly listed companies, specifically including each company's annual financial reports, balance sheets, and relevant financial indicators. The data was primarily obtained from publicly available financial reports and organized and processed in Excel format. Table 1 presents descriptive statistics, where N denotes the sample size. We utilized key variables including net profit ($NetProfit$) and CIR; the specific statistics for these variables are shown in the table.

Table 1. Descriptive statistics

VARIABLES	N	mean	sd	min	p50	max
NetProfit	40,496	0.0804	0.1312	-0.7654	0.0757	0.4774
CIR	21,157	0.0435	0.2291	-0.6677	-0.0009	2.5158

5 Analysis of Benchmark Regression Results

Table 2. Benchmark Regression Results

	Do not control for fixed effects	Control for individual fixed effects	Control for individual and time fixed effects
	CIR	CIR	CIR
NetProfit	0.0596***	0.0969***	0.0700***
	(4.8029)	(5.6168)	(3.7873)
_cons	0.0384***	0.0352***	0.0375***
	(20.6017)	(16.5891)	(17.0344)
Individual fixed	No	Yes	Yes
Time fixed	No	No	Yes
N	19612	19355	19355
r2	0.0011	0.1377	0.1466

Remark: Numbers in parentheses refers to t statistics.

**: p < 0.10, ** p: < 0.05, *** p: < 0.01*

The results of the baseline regression are shown in Table 2. As can be seen from the three models in the table, the coefficient of $NetProfit$ is significantly positive in all

models, at 0.0596, 0.0969, and 0.0700, respectively. This indicates that an increase in corporate profit margins significantly drives an increase in CIR, thereby validating H.

6 Conclusions and Policy Recommendations

6.1 Conclusion

This study utilizes panel data from Chinese listed companies spanning the period from 2011 to 2024 to systematically examine the impact of corporate profit margins on corporate innovation resilience (CIR) through the application of a two-way fixed-effects model. The empirical results consistently demonstrate that corporate profit margins significantly enhance CIR. Specifically, the benchmark regression analysis reveals that the coefficient for net profit ($NetProfit$) is significantly positive across all model specifications—ranging from 0.0596 to 0.0969—even after rigorously controlling for both firm-level and time-level fixed effects. These findings provide robust empirical support for the research hypothesis (H), confirming that an increase in profit margins is a primary driver for improving a firm's ability to sustain innovation activities amid external shocks and rising uncertainty. Theoretically, this research expands the scope of CIR theory by identifying profit margins as a key determinant and constructing a framework that links a firm's financial health to its innovation sustainability. Methodologically, the use of a two-way fixed-effects model overcomes potential endogeneity issues, accurately revealing the mechanism through which internal funding supports resilience. The underlying logic is that higher profit margins provide a crucial financial foundation, offering firms ample internal funds and superior resource allocation capabilities. This financial strength enables companies to maintain consistent R&D investment, stabilize core innovation teams, and continue advancing technological activities even when faced with significant operational pressures or environmental volatility. Ultimately, this study underscores that profit margins are not merely an indicator of past performance but are essential for a company's long-term survival and competitiveness in a digital and globalized economy.

6.2 Policy Recommendations

Based on the aforementioned findings, the government and relevant stakeholders should prioritize optimizing the business profit environment to strengthen the foundational support for corporate innovation resilience. At the policy level, it is essential to further expand the additional deduction ratio for R&D expenses and deepen the application of specialized financial support tools, such as the "Re-lending for Scientific and Technological Innovation and Technological Transformation," to effectively reduce the overall cost of innovation for enterprises. Furthermore, a synergistic policy framework should be promoted—integrating tax relief, financing support, and factor supply guarantees—to facilitate the deep integration of profit accumulation with long-term innovation investment. This approach ensures that financial advantages are channeled into every stage of enhancing CIR while simultaneously encouraging the sharing of innovation-related knowledge, resources, and technologies across the industrial ecosystem.

At the enterprise level, firms must recognize profit margins as a strategic "buffer" that provides the necessary flexibility to stabilize R&D activities and maintain human capital continuity during periods of external volatility. By fostering an environment where profit accumulation directly feeds back into adaptive capacity, policymakers and managers can ensure that firms not only survive external shocks but continue to lead through sustainable technological advancement.

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