

The Impact of Supply Chain Shareholding on Corporate Strategy Aggressiveness: Evidence from China

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Abstract. Employing a sample of Chinese A-share listed companies from 2007 to 2023, this study investigates the impact of supply chain shareholding on corporate strategy aggressiveness. The empirical results demonstrate that supply chain shareholding significantly and negatively constrains a firm's strategy aggressiveness. This conclusion remains robust across various tests, including adjustments for sample periods and variable restructuring. The heterogeneity analysis demonstrates that the constraining influence of supply chain equity participation on firms' strategy aggressiveness is more salient for enterprises situated in eastern provinces and for those embedded in high-technology sectors, suggesting that regional marketization levels and industry technological attributes moderate this relationship. Mechanism tests indicate that supply chain shareholding primarily enhances corporate financial stability through two pathways: accelerating cash turnover and alleviating debt financing constraints. Consequently, companies lack sufficient incentives for high-uncertainty aggressive investments and adopt more conservative strategy postures. This study contributes to research on factors influencing corporate strategy and the economic consequences of supply chain equity ownership, providing empirical evidence for understanding the strategic transmission mechanisms of supply chain capital linkages.

Keywords: supply chain shareholding, strategy aggressiveness, cash turnover, cost of debt

1. Introduction

Supply chain shareholding refers to a novel form of capital linkage whereby upstream and downstream enterprises establish equity stakes in one another. Its core characteristic lies in achieving stable cooperation, resource integration, and risk mitigation through equity ties. Based on the direction of shareholding, it can be categorized as vertical or horizontal. Vertical shareholding occurs when a specific enterprise is held by upstream or downstream enterprises. Examples include retailers holding stakes in manufacturers or suppliers acquiring stakes in manufacturers. Horizontal shareholding occurs between competitors operating at the same stage within the supply chain. Increasing horizontal shareholding ratios or directly implementing horizontal mergers and acquisitions can effectively consolidate industry resources [1] and foster collaborative innovation.

Research on corporate strategy aggressiveness can be traced back to Miles et al. [2], which categorized corporate strategy into three sustainable and testable types: defenders, analyzers and prospectors. Progressing from the former to the latter, enterprises exhibit an increasing propensity

towards high-risk, high-dispersion, and high-growth strategies in market competition. Higher strategy aggressiveness correlates with stronger financial performance and enhanced innovation efficiency [3]. However, it simultaneously elevates the risk of earnings management and financial misconduct [2,4,5].

Amidst intensifying external shocks in the global trade environment, supply chain resilience, sustainability, and inherent systemic risks have progressively become focal issues for the academic political. Competition between enterprises is no longer confined to individual firms but has evolved into a contest between supply chains. If upstream and downstream enterprises establish capital linkages through shareholding arrangements, the transaction costs be reduced [6], thereby fostering strategic coordination and resource complementarity. Against this backdrop, questions arise: First, will firms gain greater competence and confidence to adopt more aggressive strategies? Second, might the non-perfect alignment of interests between supply chain shareholders and investee firms lead to equity interference in the latter's independent operational decisions? Finally, does the shareholders' risk aversion prevent the company from adopting more aggressive strategies? These require further investigation.

To address these questions, this paper utilizes a sample of Chinese A-share listed companies from 2007 to 2023 to empirically analyze the impact of supply chain shareholding on corporate strategy aggressiveness, using core variables *SCS* and *STRA*. Findings indicate that supply chain holdings exert a significant negative influence on corporate strategy aggressiveness. Robustness tests maintain statistical significance. Heterogeneity analysis reveals that the inhibitory effect of supply chain equity holdings on strategy aggressiveness intensifies for firms registered in eastern regions and those classified as high-tech enterprises. Mechanism tests indicate that supply chain equity holdings accelerate corporate cash turnover and alleviate financing constraints, leading firms to become complacent with current strategies and thereby moderating their strategy aggressiveness.

The marginal contribution of this paper is twofold: Firstly, it enriches the research on factors influencing corporate strategy aggressiveness. This paper aims to extend the scope of research on factors affecting strategy aggressiveness from the firm itself to the realm of supply chain shareholding. Second, it expands the empirical analysis of the economic consequences of supply chain shareholding. In the early stages of supply chain shareholding research, literature predominantly employed economic modelling and optimization approaches to seek optimal economic benefits and overall supply chain Pareto improvements [7], with few studies empirically examining the economic outcomes of supply chain shareholding till now.

The remainder of this paper is structured as follows: Section Two gives the literature review; Section Three outlines the theoretical analysis and research hypotheses; Section Four details the research design; Section Five analyses the empirical findings; and Section Six concludes with research findings and future directions.

2. Literature review

2.1. Economic consequences of supply chain shareholding

From an internal governance perspective, supply chain stakeholders tend to enhance inter-firm information sharing, governance oversight, and technology spillovers to safeguard their interests. This approach elevates environmental disclosure standards, reduces audit costs, and fosters corporate green innovation [8]. Simultaneously, supply chain shareholding sends a strong positive market signal, helping alleviate corporate financing constraints. Conversely, instability in supply chain relationships negatively impacts these economic outcomes [9]. However, supply chain

shareholding is not without drawbacks. Potential power imbalances may diminish the profitability of the invested firm. Furthermore, while shareholding mitigates information asymmetry, it also facilitates collusive fraud, though enhancing corporate governance standards can curb such behavior [10].

From an external competitiveness perspective, supply chain shareholding assists enterprises in mitigating risk shocks through capital endorsement and enhanced supply chain coordination. For instance, Guo et al. [11] observed that during periods of high climate policy uncertainty, supply chain equity-holding firms exhibited higher total factor productivity. Fang and Zhang [12] found that vertical equity holdings mitigated the adverse effects of supply chain disruptions, enabling firms to achieve enhanced resilience. Conversely, this interdependence is a double-edged sword: the tight connections also facilitate the spread of localized shocks across the entire network. Increased market concentration resulting from supply chain holdings can also contribute to monopolistic tendencies [13].

2.2. Influencing factors of enterprise strategy aggressiveness

From a macro-environmental perspective, firms experience heightened strategy aggressiveness when supported by industrial policies alleviating financing constraints [14] or receiving government economic subsidies boosting investment efficiency. Conversely, a strong Confucian cultural ethos in a firm's regional setting tends to inhibit strategy aggressiveness [15].

From the micro-firm perspective, research focuses on human capital, external shareholding, and corporate governance. First, executive team heterogeneity positively influences strategy aggressiveness [16]. However, the impact of D&O insurance depends on the net effect of the "incentive effect" (elevating risk-taking) and the "opportunistic effect" (moral hazard issues), which exerts a negative influence [17,18]. Secondly, a decline in external shareholding reduces corporate strategy aggressiveness [19]. Finally, high-quality corporate governance, such as robust internal controls [20], enhances strategy aggressiveness by improving investment efficiency.

3. Theoretical analysis and research hypotheses

3.1. Theoretical analysis

Academic work has extensively covered aggressive strategies from micro-firm and macro-environmental views, but few explore the consequences through supply chain ownership. Amidst external shocks, competition has evolved into a contest between supply chains, pushing decision-making toward collective approaches. However, coordinated development still faces obstacles.

First, to mitigate costs from information asymmetry and opportunistic behavior, firms replace market transactions with stable cooperative relationships [21]. Supply chain equity, as a capital linkage, helps reduce transaction costs. Second, the Resource-Based View [22] suggests that shareholding allows firms to acquire critical resources via spillover effects, promoting strategic synergy and complementarity. Third, the agency problem [23] arises because supply chain shareholders prioritize stable sales or procurement over maximizing the investee firm's value. They use their rights to influence strategic decisions, steering the company away from high-uncertainty, high-risk initiatives.

Firms with minimal transactional expenses and ample capital are generally unwilling to pursue aggressive strategies that involve extra risk, instead settling for cautious models. Therefore, this study hypothesizes:

H1: Shared ownership within the supply chain acts as a restraining factor on the aggressiveness of a corporation's strategy.

3.2. Conceptual framework: mediating and moderating influences

3.2.1. Postulated moderating variables

The relationship between supply chain equity and a firm's strategy aggressiveness is likely to be contingent upon the external operating environment, specifically the characteristics of the firm's industry and the context of its registered location. First, from the perspective of regional heterogeneity, the eastern regions feature a more developed market economy and fiercer market competition, exposing enterprises to higher operational uncertainty and competitive pressures. Against this backdrop, the stability and risk-averse tendencies brought about by supply chain holdings may be further amplified, thereby more significantly curbing corporate strategy aggressiveness. In contrast, central and western regions offer greater market development potential. Firms there may be more inclined to leverage resources acquired through supply chain holdings to pursue more aggressive strategies and seize market opportunities. Consequently, the restraining effect of supply chain holdings on strategy aggressiveness may be relatively weaker in these areas.

Secondly, considering industry differences, technology-intensive firms deal with elevated levels of uncertainty and risks associated with R&D. While supply chain equity provides complementary resources, it also strengthens the shareholders' ability to intervene in and influence technological roadmaps. To ensure stability, these shareholders tend to steer portfolio companies toward refining existing technologies rather than pursuing disruptive, high-risk innovations. This dynamic may amplify the restraining effect. For non-high-tech enterprises, the negative impact is comparatively weaker. In summary, we propose the following hypothesis:

H2: The constraining impact of supply chain shareholding on corporate strategy aggressiveness is amplified when the subject firm is located in Eastern China and operates as a high-technology entity.

3.2.2. Hypotheses regarding the mechanism of mediation

Within supply chains, the flow of goods accompanies the reverse flow of capital. Equity partnerships enhance information transparency, optimizing operational decisions and integrating business processes [24]. The trust fostered helps shorten accounts receivable collection periods and inventory turnover days, reducing both the operating and cash cycles, and thus improving cash turnover rates.

The two primary funding avenues are bank credit and commercial credit. Supply chain equity holdings lead creditors to perceive the invested company's debt-repayment capacity as superior due to smoother internal capital flows. The firm also gains easier access to trade credit financing. This is because equity endorsement provides implicit credit assurance. Stakeholder theory suggests supply chain shareholders will offer implicit support (e.g., extending trade credit during crises) to safeguard their interests, thereby alleviating corporate financing constraints.

Simon's "satisficing" theory [25] posits that executives in successful or steady organizations remain content and avoid new risks, pursuing radical changes only during crises. Supply chain equity accelerates cash turnover and alleviates financing constraints, generating stable cash flow. This financial "comfort zone" fosters satisficing behavior. Given stable returns, management lacks incentives to disrupt the status quo through high-uncertainty investments.

In summary, we propose:

H3a: Shared ownership within the supply chain expedites cash conversion, consequently curbing strategy aggressiveness.

H3b: Shared ownership within the supply chain reduces debt financing expenditures, resulting in a dampening effect on strategy aggressiveness.

4. Research design

4.1. Sample selection and data sources

Our research sample comprises Chinese A-share publicly traded companies spanning the fiscal years from 2007 to 2023. The period starts in 2007 due to the implementation of new accounting standards. We process the sample by: (1) excluding financial industry firms; (2) removing observations with missing financial or strategy-related data; and (3) winsorizing all continuous variables at the 1% level. The final sample yields 31,532 firm-year observations. All data are sourced from the China Stock Market & Accounting Research (CSMAR) Database.

4.2. Variable definition and measurement

(1) Supply Chain Shareholding (SCS).

Following existing literature [26,27], we quantitatively measure the level of corporate supply chain shareholding. The steps are as follows: (1) Obtain the top ten shareholders (names and shareholding ratios) from CSMAR. (2) Obtain the top five customers and suppliers (names and transaction proportions) from CSMAR. (3) Match the top ten shareholders with the top five customers or suppliers. (4) Calculate the aggregated shareholding ratio of the matched top five suppliers or customers within the firm's top ten shareholders. This aggregated ratio represents the Supply Chain Shareholding Level (SCS). We also retain a dummy variable (SCS_{Type}) for robustness testing.

(2) Corporate Strategy Aggressiveness ($STRA$).

This paper references Bently et al. [4] to construct the following six continuous variables measuring corporate strategy aggressiveness: ① Ratio of research and development expenditures to sales($S01$); ② Ratio of employees to sales($S02$) (in millions); ③ Historical growth rate of operating revenue($S03$); ④ Ratio of sale expenses and financial expense to sales($S04$); ⑤ Employee fluctuations($S05$); ⑥ Ratio of net fixed assets to total assets($S06$). These six variables are computed over a rolling five-year average. For the first five variables, each “company-year” sample is grouped into five equal-sized groups based on their values, with the smallest group receiving 0 points, the next smallest 1 point, and so on, up to 4 points for the largest group. For the sixth variable, the grouping is reversed: the smallest group receives 4 points, the largest group receives 0 points. For each “company-year” sample, the grouped scores of the six variables are summed to yield the $STRA$ metric ranging from 0 to 24 points. A higher $STRA$ value indicates a more aggressive corporate strategy, while a lower $STRA$ value suggests a more conservative strategy. Following Bently et al. (2013), companies with $STRA$ scores ≤ 6 are classified as defenders, those ≥ 18 as prospectors, and those between these thresholds as analyzers.

4.3. Modeling

We use a multiple regression analysis to examine the impact of supply chain shareholding on strategy aggressiveness. We incorporate year and industry fixed effects and cluster all standard

errors at the year-industry level. The model constructed is:

$$STRA_{it} = \alpha_0 + \beta_1 SCS_{it} + \beta_2 CVs + \mu_{year} + \mu_{ind} + \varepsilon_{it} \quad (1)$$

Where i and t denote firm and year, respectively; μ_{year} and μ_{ind} represent the fixed effects for year and industry, respectively; and ε_{it} is the error term.

Explanatory variable $STRA_{it}$: Company strategy aggressiveness level, with values ranging from 0 to 24. Higher values indicate greater strategy aggressiveness.

Dependent variable SCS_{it} : The proportion of supply chain shareholding is calculated by aggregating the equity stakes held by the five largest suppliers or customers appearing within the firm's top ten investor list.

Related control variables CVs :Based on relevant literature [6,17,27], this study controls for the following variables: debt-to-asset ratio(lev), firm size($size$), dual role of chairman and CEO($Dual$), board size($Board$), $TobinQ$, and ownership structure(SOE).

5. Empirical results and analyses

5.1. Descriptive statistics and correlation analysis

Table 1 indicates high variation in Supply Chain Shareholding (SCS) and a uniform distribution for Strategy Aggressiveness ($STRA$). The study also finds a significant negative correlation between SCS and $STRA$ from correlation analysis. Multicollinearity is not a concern (all coefficients < 0.5).

Table 1. Variable definition and descriptive statistics

VAR	Definition and calculation	(1) N	(2) mean	(3) sd	(4) min	(5) p50	(6) max
STRA	The higher the value, the more aggressive the company's strategy	31,532	12.016	4.419	0.000	12.000	24.000
SCS	Supply chain shareholding ratio	31,532	0.368	3.095	0.000	0.000	28.870
SCS_{type}	Equals to 1 if has supply chain shareholding	31,532	0.017	0.130	0.000	0.000	1.000
SOE	Equals to 1 if state-owned enterprise, otherwise equals to 0	31,532	0.319	0.466	0.000	0.000	1.000
lev	Ratio of total liabilities to total assets.	31,532	0.425	0.201	0.052	0.417	0.998
ROE	Ratio of net profit to average shareholders' equity.	31,532	0.053	0.158	-0.939	0.069	0.405
size	The natural logarithm of total assets.	31,532	22.218	1.276	19.268	22.045	26.104
Dual	Equals to 1 if the CEO chairs the board and 2 otherwise.	31,532	1.702	0.457	1.000	2.000	2.000
TobinQ	Ratio of market value to total assets.	31,532	2.068	1.301	0.845	1.658	8.764
Board	The natural logarithm of board members	31,532	2.119	0.196	1.609	2.197	2.708

5.2. Regression result analysis

5.2.1. Basic regression analysis

Table 2 presents the regression results for supply chain stock ownership and corporate strategic aggressiveness. The results indicate that the coefficient for SCS was -0.121 before controlling for variables. After incorporating a series of control variables, the absolute value of the regression coefficient decreased slightly, but both remained significantly negative at the 1% level. This

demonstrates that supply chain shareholding negatively impacts corporate strategic aggressiveness, validating Hypothesis H1. This finding can be interpreted as supply chain shareholding behavior influencing corporate strategic choices, leading them toward a more conservative stance.

Table 2. Main regression analysis

	(1)	(2)
VARIABLES	<i>STRA</i>	<i>STRA</i>
<i>SCS</i>	-0.121*** (-7.69)	-0.057*** (-5.40)
<i>lev</i>		-2.313*** (-6.92)
<i>ROE</i>		1.064*** (3.90)
<i>size</i>		-0.510*** (-5.04)
<i>Dual</i>		-0.591*** (-5.95)
<i>TobinQ</i>		0.658*** (9.72)
<i>Board</i>		-0.456** (-2.40)
<i>SOE</i>		-1.540*** (-4.87)
Observations	31,532	31,532
Adjusted R ²	0.007	0.175
IND	Yes	Yes
YEAR	Yes	Yes

Robust t-statistics in parentheses * p<0.01, ** p<0.05, * p<0.1

5.2.2. Robustness test

To further examine the robustness of the benchmark results, we conduct several tests.

(1) Partial Sample Deletion. First, we removed the 2009–2010 samples, and then separately extracted only the 2011–2014 samples for re-examination (Columns (1) and (2) of Table 3). Empirical findings consistently show a significant negative correlation between supply chain shareholding and corporate strategy aggressiveness, confirming our conclusions.

(2) Modifying the Measurement Method for the Dependent Variable. We adjusted the measurement of corporate strategy aggressiveness in two ways. First, we reduced the dimensions from six to five by excluding employee headcount volatility, and adjusted the scoring range to 5–25 (Column (3) of Table 3). Second, we replaced the continuous strategy variable with indicator variables representing Defenders (scores ≤ 6) and Prospectors (scores ≥ 18). This analysis (Columns (4) and (5) of Table 3) revealed that supply chain shareholding positively influences Defender orientation but negatively influences Prospector orientation. These results align with and support our primary findings.

(3) Modifying the Measurement Method of the Explanatory Variable. Following prior research, we substituted the continuous supply chain shareholding variable with a dummy variable in the

regression analysis. The results (Column (6) of Table 3) similarly show that supply chain ownership suppresses the aggressiveness of corporate strategy initiatives.

Table 3. Robustness tests

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>STRA</i>	<i>STRA</i>	<i>STRA-</i>	<i>DE</i>	<i>PR</i>	<i>STRA</i>
<i>SCS</i>	-0.057*** (-5.34)	-0.046** (-2.46)	-0.046*** (-4.73)	0.005*** (3.12)	-0.001** (-2.46)	
<i>SCS_{type}</i>						-1.082*** (-6.82)
<i>CVs</i>	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes	Yes
N	30,406	9,594	31,532	31,532	31,532	31,532
Adjusted R ²	0.176	0.188	0.012	0.083	0.058	0.175

Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.2.3. Further analysis

(1)Heterogeneity Analysis

First, we divided the sample into two groups based on the firm's registered region: Eastern (Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan) and Middle-West (remaining 20). The results (Columns (1) and (2) of Table 4) show that supply chain shareholding negatively impacts corporate strategy aggressiveness in both regions. However, the inhibitory effect is more pronounced in the Eastern region. This difference may stem from the East's saturated market and intensified competition, where aggressive strategies carry higher failure costs.

Second, we conducted an industry-specific verification. Firms were classified as high-tech or non-high-tech based on CSRC industry codes. The results (Columns (3) and (4) of Table 4) show that the strategy aggressiveness of non-high-tech enterprises is less influenced by supply chain shareholding than that of high-tech enterprises. This likely reflects the fixed strategic paths and limited room for aggressiveness inherent in non-high-tech firms, weakening the influence of shareholding. Hypothesis H2 is validated.

Table 4. Heterogeneity analysis

	(1)	(2)	(3)	(4)
	<i>East Area</i>	<i>Middle&West Area</i>	<i>High Tec</i>	<i>NO-High Tec</i>
<i>SCS</i>	-0.0744***(-4.708)	-0.0341**(-2.291)	-0.0743***(-9.159)	-0.0380**(-2.628)
<i>CVs</i>	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes
N	22479	9050	18948	12584
Adjusted R ²	0.161	0.216	0.183	0.183

t statistics in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01

(2)Mechanism Tests

Table 5. Mechanism tests

	(1)	(2)	(3)	(4)	(5)
	<i>STRA</i>	<i>CT</i>	<i>STRA</i>	<i>Cost Of Debt</i>	<i>STRA</i>
<i>SCS</i>	-0.0765***(-7.585)	0.0823***(-2.945)	-0.0689***(-7.263)	-0.0066**(-2.194)	-0.0759***(-7.428)
<i>CT</i>			-0.0928***(-12.720)		
<i>Cost Of Debt</i>					-0.2107***(-4.081)
<i>CVs</i>	Yes	Yes	Yes	Yes	Yes
<i>Year</i>	Yes	Yes	Yes	Yes	Yes
<i>Ind</i>	Yes	Yes	Yes	Yes	Yes
<i>N</i>	31532	31532	31532	30719	30719
<i>Adjusted R²</i>	0.158	0.134	0.195	0.149	0.169

t statistics in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01

First, we tested whether supply chain shareholding influences strategy aggressiveness through the cash turnover rate. The results (Columns (2) and (3) of Table 5) confirm that supply chain ownership enhances cash turnover rate, thereby inhibiting strategy aggressiveness, validating Hypothesis H3a. Second, using debt financing cost as a mediating variable (calculated based on financial charges divided by total liabilities), the regression results (Columns (4) and (5) of Table 5) confirm that supply chain equity participation alleviates debt financing constraints, which consequently inhibits corporate strategy aggressiveness, validating Hypothesis H3b.

6. Conclusions

This study, analyzing Chinese A-share data (2007–2023), reveals that supply chain shareholding significantly suppresses corporate strategy aggressiveness. The stability derived from these equity ties enhances financial health (faster cash turnover, easier borrowing), causing firms to favor consolidating existing operations over pursuing uncertain ventures. This dampening effect is more pronounced in eastern regions and high-tech enterprises. Mechanism tests confirm that supply chain shareholding fosters satisficing behavior by accelerating cash turnover and alleviating financing constraints. Future research should address complex agency conflicts beyond the manager-shareholder relationship and explore the moderating role of external policy shocks.

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