Peer Effects in Corporate Decision Making: Mechanisms Influencing M&A Activity

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Abstract. This study investigates the mechanisms underlying the peer effect in merger and acquisition (M&A) decisions using a sample of Chinese A-share listed companies from 2014 to 2023. Employing a two-stage regression model, the analysis yields several key findings. First, there is a significant industry-level peer effect in M&A activities; a firm's probability of making an M&A decision is strongly and positively influenced by the M&A activities of its industry peers. Second, the magnitude of this effect varies by firm size. Specifically, the M&A decisions of small enterprises within an industry are substantially shaped by the actions of their peers. In contrast, for large enterprises, this peer influence is not statistically significant. Third, the intensity of market competition plays a crucial moderating role. The peer effect is pronounced and highly significant in industries characterized by intense competition while this effect becomes insignificant in industries with either low levels of competition or high levels of oligopoly. These findings provide nuanced insights into corporate investment behavior.

Keywords: Peer effect, M&A decision, Information acquisition, Market competition

1 Introduction

With the development of theoretical research in corporate and behavioral finance, enterprise decision-making is no longer viewed as a completely endogenous system. Enterprises mutually influence each other in behavioral decision-making, a phenomenon scholars refer to as peer effect. Theoretically, the peer effect was initially explained using herd theory, which interprets imitative behavior among enterprises as the outcome of managers' irrational choices. However, in practice, most enterprise managers' imitative behavior follows a certain logic. Devenow and Welch (1996) originally proposed the rational herd theory to explain imitative behavior among enterprises, arguing that the peer effect arise from managers' limited rationality [1]. Liberman and Asaba (2006) further proposed information-based and competition-based theories [2]. Increasingly, the theoretical framework for enterprise peer effect has gradually become more comprehensive.

Existing research on enterprise M&A decisions mainly focuses on pricing methods (Lan , 2015), performance (Duchin et al., 2010), influencing factors (Boone &White,

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2015; Ma & Liu, 2017), and risk management and control (Zhongming & Jingyun, 2022) [3][4][5][6][7], while the research on peer effect in corporate M&A decisions remain relatively scarce. Zaighum and Karim (2019) reviewed the industry-level peer effect in M&A decisions of listed companies, concluding that such decisions are significantly influenced by peer enterprises [8]. However, these studies mentioned have not accounted for the impact of using the average to measure the intrinsic issues arising from the peer effect. This study focuses on improving empirical research methods. Besides, this study aims to explore the mechanism of the peer effect in M&A decisions in terms of information acquisition and industry competition.

The marginal contributions of this study are as follows: Firstly, this study confirms the relationship between M&A decisions and peer effects. Secondly, this study uses a two-stage regression model to weaken the influence of the endogeneity problem on the empirical results, ensuring the reliability of the research conclusions. Third, this study clarifies the influence mechanism from Information Theory and Competition Theory respectively.

2 Literature and Hypothesis

2.1 M&A Decisions and the Peer Effect

In empirical research on the peer effect, Leary and Roberts (2014) were the first to use instrumental variables and a two-stage regression model to confirm the existence of the peer effect in the capital structure management of listed companies [9]. Park et al. (2017) demonstrated a significant peer effect in enterprise investment decisions and further argued that information acquisition and industry competition constitute the two primary channels through which the peer effect emerges [10]. As corporate M&A behavior is a major pathway for rapid enterprise development, this study holds that a significant peer effect also exists in the M&A decisions of listed companies. Furthermore, Adhikari and Agrawal (2018) found that peer influence affects both the intensity and the probability of enterprise decision-making [11]. In this study, the M&A decisions of listed companies are reflected in whether it occur or not. Therefore, the following research hypotheses are proposed:

Hypothesis 1: The higher the proportion of enterprises in the same group that carry out mergers and acquisitions, the greater the probability that the listed company will conduct mergers and acquisitions.

2.2 The Motivation of the Peer Effect in M&A Decisions

To explain the peer effect in corporate behavioral decisions, Liberman and Asaba (2006) proposed information-based theory and competition-based theory derived from the 'Herding Effect' [12]. Information-based theory states that managers of small enterprises often struggle to obtain sufficient decision-making information while managers of large enterprises typically have access to more reliable information. Therefore, managers of small enterprises tend to imitate the decisions of those in larger ones, to reduce the cost of choosing. Competition-based theory holds that all enterprises face

competitive pressure. When managers make independent decisions, they bear the risk of decision-making failure, which may weaken the enterprise's competitive position. Through imitating, managers thereby stabilize the competitive position of their enterprises within the industry. Therefore, this study proposes the following research hypotheses:

Hypothesis 2: The M&A decisions of leading enterprises in the industry are not significantly affected by their peers, while those of non-leading enterprises in the industry are significantly influenced by their peers.

Hypothesis 3: The higher the level of industry competition, the more likely enterprises' M&A decisions will be significantly influenced by their peers.

3 Data and Empirical Design

3.1 Sample and Data

All data used in the empirical analysis of this study are obtained from the CSMAR database. The sample consists of all A-share listed companies from 2014 to 2023, and the dataset includes basic information on listed companies, M&A decisions, and related financial indicators. To ensure the scientific rigor of the empirical analysis and the reliability of the conclusions, this study processes the original data as follows: (1) Eliminate enterprise samples from the financial industry; (2) Exclude enterprise samples with trading statuses of ST, *ST, and PT; (3) Remove enterprise samples with incomplete data; (4) Eliminate samples with fewer than two enterprises within an industry; (5) Apply 1% tailing to all continuous variables. A total of 9,327 enterprise-year observations from 2014 to 2023 were obtained.

3.2 Model and Variables

This study adopts the traditional investment model (Cleary, 1999) to study the peer effect in M&A decisions of listed companies. The empirical model is as follows:

$$Y_{ijt} = \alpha + \beta_1 \bar{Y}_{-ijt} + \beta_2 \bar{C}_{-ijt} + \beta_3 C_{ijt-1} + \delta\mu_j + \rho v_t + \varepsilon_{ijt} \quad (1)$$

In the formula, i, j, and t represent the company, industry, and year, respectively. The dependent variable Y_{ijt} represents whether a listed company conducts M&A (Mergers) that measured by a dummy variable. The core independent variable $\bar{Y}_{-ijt}$ represents the quantified peer effect, calculated as the arithmetic mean of Y_{ijt} for enterprises in the same industry (excluding enterprise i). Core variable definitions and descriptive statistics are presented in Table 1 and Table 2.

According to Model (1), the peer effect in this study consists of two parts. The first part is the impact generated by the M&A behavior itself, measured by the coefficient β_1; the second part is the impact generated by the performance of peers, measured by the coefficient β_2. The control variables are divided into two categories. The first category consists of firm-level controls C_{ijt-1}, including Size (Size), firm age (Fage), asset-liability ratio (Lev), book-to-market ratio (Bm), Tobin's Q (TQ), and equity

concentration (Owner). The second category consists of group-level controls $\bar{C}_{-ijt}$, which represent the arithmetic mean of X_{ijt} for other enterprises in the same industry (excluding enterprise i itself), taking the values of the current year. Finally, μ_j, v_t and ε_{ijt} represent the industry fixed effect, time fixed effect, and residual term, respectively. The residual term contains other unobservable factors that may affect the dependent variable.

Table 1. Core variables definition

Type	Name	Symbol	Calculation
Dependent variable	Whether or not happen	Merge	Merge=1 indicates that enterprise i underwent a M&A in year t. Merge=0 indicates that enterprise i did not undergo any mergers or acquisitions in year t.
Explanatory variable	M&A proportion of peers	P_Merge	The arithmetic mean of the M&A of other enterprises in industry j where enterprise i is located.
Grouped regression	Enterprise market position	Market	The top 10% of enterprises in terms of industry scale are classified as leading enterprises while the rest are not.
	Industry competition degree	HHI	The sum of the squares of the market shares of all enterprises in industry j.

Table 2 presents the descriptive statistical results of the main empirical variables in this study. The results show that the average values of Merge is 0.234 indicating that 23.4% of enterprises in the sample have conducted mergers and acquisitions.

Table 2. Core variables descriptive statistics

Variables	Observations	Mean	Standard error	Minimum	Maximum
Dependent variable:					
Merge	9327	0.234	0.423	0.000	1.000
Explanatory variable:					
P_Merge	9327	0.234	0.148	0.000	1.000

4 Empirical results

4.1 Baseline results

To test Hypothesis 1, Model (1) is used to conduct IV-Probit regression analyses on the M&A behavior of listed companies. The results are presented in Table 3. The findings show that regardless of whether same-group control variables are included, P_Merge has a significant positive effect on Merge at the 1% significance level. This indicates that the higher the proportion of companies conducting M&A within the same industry, the higher the probability that the sample company will carry out M&A.

Table 3. The existence of the peer effect in M&A decisions

	Merge (1)	Merge (2)
P_Merge	3.638***	3.446***
	(2.86)	(2.60)
Controls: peers		
Size		-0.216
		(-1.49)
Fage		-0.189
		(-0.29)
Lev		0.002
		(0.00)
Bm		0.088
		(0.25)
TQ		-0.017
		(-0.39)
Equity		0.542
		(0.77)
Controls: the firm i		
Size	0.161***	0.158***
	(7.07)	(6.45)
Fage	0.051	0.045
	(0.52)	(0.44)
Lev	-0.169	-0.176
	(-1.58)	(-1.58)
Bm	-0.326**	-0.335**
	(-2.34)	(-2.40)
TQ	-0.001	0.001
	(-0.02)	(0.03)
Equity	-0.856***	-0.846***
	(-6.06)	(-6.02)
Year FE	Yes	Yes
Industry FE	Yes	Yes

Note: The main results reported in the table are the regression coefficients and t-test values of the core independent variables. Among them, *, ** and *** represent significance levels of 1%, 5% and 10%, respectively.

4.2 The Mechanism Analysis

4.2.1. Information Acquisition — Caused by Information Theory.

To verify Hypothesis 2, this study uses industry scale as the classification standard. The top 10% of enterprises in terms of industry scale are defined as leading enterprises, and the remaining 90% are defined as non-leading enterprises. Grouped IV-Probit is conducted, and the results are shown in Table 4. Columns (1) and (2) indicate that among non-leading enterprises, the regression coefficient of P_Merge is 4.768, showing

P_Merge has a significant positive impact on Merge. But for leading P_Merge has no significant effect on Merge. One possible explanation is that leading enterprises typically possess more comprehensive information and therefore do not need to imitate others, whereas non-leading firms tend to imitate leading enterprises due to insufficient decision-making information. Thus, Hypothesis 2 is supported.

4.2.2. Competition Improvement — Caused by Competition Theory.

Referring to Liberman & Asaba (2006), the degree of industry competition (HHI) is used to conduct grouped IV-Probit analyses to test Hypothesis 3. The results are shown in columns (3) to (5) of Tables 4. Column (3) reports the results for competitive industries, indicating that in highly competitive industries, the probability of M&A is significantly positively affected by the proportion of companies conducting M&A. Columns (2) and (3) present the regression results for low-oligopoly and high-oligopoly industries, respectively, and the findings show that in both types of oligopoly industries, the probability of M&A is not significantly affected by the proportion of acquiring companies. Thus, Hypothesis 3 is supported.

Table 4. The results of mechanism analysis

	Non-leading Merge (1)	Leading Merge (2)	Competitive Merge (3)	Low-oligopolistic Merge (4)	High-oligopolistic Merge (5)
P_Merge	4.768***	1.010	3.532***	2.649	2.832
	(3.33)	(0.10)	(3.80)	(1.55)	(1.18)
Controls: peers					
Size	-0.339**	0.351	-0.388*	-0.137	-0.137
	(-2.05)	(0.97)	(-1.72)	(-0.51)	(-0.93)
Fage	-0.807	3.891	0.490	-0.478	1.210
	(-1.14)	(1.23)	(1.00)	(-0.41)	(0.96)
Lev	0.655	-1.781	0.023	0.870	-0.708
	(1.07)	(-0.34)	(0.03)	(0.62)	(-0.80)
Bm	0.034	0.867	0.323	0.574	-0.049
	(0.08)	(0.38)	(0.87)	(0.71)	(-0.07)
TQ	-0.035	0.104	-0.030	0.091	-0.054
	(-0.73)	(0.41)	(-0.44)	(0.86)	(-0.62)
Equity	0.851	2.904	-0.143	-0.107	1.625
	(1.01)	(1.14)	(-0.11)	(-0.06)	(1.26)
Controls: the firm i					
Size	0.133***	0.171	0.196***	0.099**	0.090
	(3.33)	(0.87)	(6.92)	(2.52)	(1.62)
Fage	-0.009	0.161	-0.069	0.511**	-0.068
	(-0.09)	(0.46)	(-0.55)	(2.46)	(-0.25)
Lev	-0.160	-0.661	-0.201	-0.186	-0.034
	(-1.44)	(-1.15)	(-1.54)	(-0.78)	(-0.12)
Bm	-0.248*	-1.311***	-0.511***	-0.108	0.269

	(-1.70)	(-3.05)	(-2.72)	(-0.37)	(0.86)
TQ	0.003	-0.212**	-0.010	-0.017	0.066
	(0.12)	(-1.95)	(-0.26)	(-0.34)	(1.09)
Equity	-0.881***	-0.330	-0.997***	-0.464	-0.787**
	(-5.72)	(-0.82)	(-5.79)	(-1.55)	(-2.41)
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes

Note: The main results reported in the table are the regression coefficients and t-test values of the core independent variables. Among them, *, ** and *** represent significance levels of 1%, 5% and 10%, respectively.

4.3 Robustness Test

To verify the reliability of the above conclusions, this study further optimizes the measurement method of the peer effect by using the weighted average of enterprise scale instead of the arithmetic average for the relevant regression analysis. The results are presented in Tables 5. The findings show that under a new measurement method, the original conclusion still holds true.

Table 5. The results of robustness test

	Merge	Merge	Non-leading Merge	Leading Merge	Competitive Merge	Low-oligopoly Merge	High-oligopoly Merge
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
P_Merge	6.663***	5.243***	4.624**	3.275	3.088***	3.274	2.049
	(3.73)	(2.90)	(2.07)	(1.49)	(4.12)	(1.49)	(1.01)
Controls: the peers	No	Yes	Yes	Yes	Yes	Yes	Yes
Controls: the firm i	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: The main results reported in the table are the regression coefficients and t-test values of the core independent variables. Among them, *, ** and *** represent significance levels of 1%, 5% and 10%, respectively.

5 Conclusion and Discussion

This study investigates the mechanism of the peer effect in the M&A decisions of listed companies. The findings are as follows: First, a significant industry peer effect exists in these decisions. The higher the proportion of enterprises conducting M&A within the same group, the greater the likelihood that a listed company will also undertake M&A. Second, managers of small enterprises tend to imitate the M&A decisions of peer larger firms. Third, the higher industry concentration, the more pronounced peer effect. These conclusions extend the existing literature by deepening the understanding of the mechanism, preparing for future research. However, the generation and mechanism of the peer effect are closely related to the subjective judgments of enterprise

managers, and current empirical models cannot fully capture managerial subjectivity. Future research may extend this work by drawing on interdisciplinary insights from behavioral finance.

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Disclosure of Interests

The authors have no competing interests to declare that are relevant to the content of this article.

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