

# The Impact of M&A on Financial Performance from the Perspective of Life Cycle

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<https://doi.org/10.5755/j01.ee.37.3.40482>

*Based on the theory of enterprise life cycle and the theory of M&A synergy, this paper selects the successful cases of M&A of A-share listed companies in Shanghai and Shenzhen from 2000 to 2020 as the research object, and takes their financial data from 2000 to 2023 as the research sample, and empirically examines the association between M&A and the financial performance of enterprises in the growth, maturity and recession stages. The results show that M&A in the growth stage can help to enhance the market position and competitiveness of enterprises, that is, to enhance the development ability. The implementation of mergers and acquisitions by mature enterprises can significantly improve the profitability, operation and debt repayment ability of enterprises, but may suppresses the development ability. During the recession period, enterprises can improve their solvency and stabilize their financial status through asset restructuring and optimization. Therefore, it is necessary to accurately identify the life cycle of the enterprise before implementing M&A activities, and continuously monitor and evaluate it in order to seize the opportunity to grow rapidly in the wave of M&A.*

Keywords: *Life Cycle; Mergers and Acquisitions; Financial Performance; Synergies.*

## Introduction

Mergers and acquisitions (M&A) represent a crucial pathway for the scale expansion and strategic transformation of listed companies in China. Their post-merger financial performance remains a persistent focus for both practitioners and academics. Given China's unique institutional environment and market structure, the value-creation mechanism of M&A may exhibit characteristics distinct from those observed in mature economies, providing a practical foundation for localized research. Existing research on M&A performance has accumulated diverse empirical findings, with studies reaching different conclusions regarding its financial impact (Trujillo *et al.* 2020). This variation suggests that the relationship between M&A and performance may not be simple or direct, but is likely moderated by firms' intrinsic characteristics. The firm life-cycle theory offers a powerful analytical lens in this regard (Dickinson 2011). This theory posits that a firm's strategic focus and resource base undergo systematic evolution across different stages, such as growth, maturity, and recession. This evolution provides a theoretical foundation for explaining the heterogeneity in M&A performance outcomes.

Recent research has begun to incorporate the life-cycle perspective into M&A analysis (Liu 2017; Du *et al.* 2022). Building upon this foundation, this study aims to advance a more systematic understanding. While these existing studies provide valuable insights, a comprehensive framework that simultaneously examines multiple financial dimensions across all life-cycle stages remains underdeveloped. Consequently, an integrated comparative analysis across growth, maturity, and recession stages is needed to form a complete picture of how M&A outcomes depend on a firm's developmental phase.

Therefore, the core objective of this study is to develop and empirically map a contingency framework that describes how post-M&A financial performance differs for acquiring firms in the growth, maturity, and recession stages. The specific research question it seeks to answer is: How does the impact of M&A on corporate financial performance differ among acquiring firms in the growth, maturity, and recession stages? This research holds clear value on both theoretical and practical fronts. Theoretically, by testing and refining this contingency framework within a major emerging market, it contributes to building a more nuanced theory of M&A performance that accounts for firm evolution. Practically, it provides evidence-based guidance for corporate managers, enabling them to form more reasonable expectations about the potential financial consequences of an M&A, based on their firm's current developmental stage.

This study integrates firm life-cycle theory with M&A research, employing a large-sample longitudinal dataset of Chinese A-share listed companies. Its contributions are threefold. First, it develops and validates a stage-contingent framework that clarifies how life-cycle stage moderates M&A financial outcomes, advancing a conditional understanding of M&A effectiveness and offering a theoretical basis for stage-specific strategies. Second, it reveals the mechanisms and constraints shaping post-M&A performance across stages, deepening the understanding of synergy realization and enriching the theoretical drivers of M&A outcomes. Third, it identifies the financial dimensions most likely to benefit from M&A at each stage, providing actionable guidance for managers and integrating classical M&A motives with the dynamic life-cycle perspective into a more refined explanatory framework.

The remainder of this paper is structured as follows. Section 2 systematically reviews the literature and proposes

research hypotheses. Section 3 details the research design, including data, and variable measurement. Section 4 reports the empirical results. Section 5 concludes by summarizing the findings and discussing their theoretical implications, practical significance, and research limitations.

## **Literature Review and Research Hypotheses**

### **Literature Review**

#### **Mergers and Acquisitions Inhibit Firm Performance**

Dickinson (2011) examined the financial performance of all mergers and acquisitions involving publicly traded companies that took place in the US generic drug industry from 1996 to 2017 and showed that there is no significant change in profit levels after mergers and acquisitions but total revenues decline after mergers and acquisitions. Thompson & Kim (2020) supported the overdue hypothesis by arguing that spending too much time on implementing mergers and acquisitions is indicative of post-merger performance poorly. Godfred & Imhotep (2020) found that executive compensation triggered by mergers and acquisitions in Africa negatively affects the performance of listed companies. Zhang (2021) found that in intra-industry mergers and acquisitions (M&A), the performance of retail firms is affected by the nature of the retail firms; the performance of retail firms is significantly and negatively affected by the size of the M&A transaction. Tong et al. (2021) empirical study examines the relationship between economic policy uncertainty and mergers and acquisitions, and the results show that the stronger the period of economic policy uncertainty, the less desirable the long-term market response of the main merger party after mergers and acquisitions, which is significantly negative. Wang & Fu (2023) analyzed the situation after the merger and acquisition of the company through the financial indicator analysis method, and found that from the subject company performance commitment to complete the situation, corporate mergers and acquisitions is a positive impact, but from the point of view of the annual various financial indicators, on the contrary, there is a situation of unsatisfactory financial performance.

#### **Mergers and Acquisitions for Business Performance**

Sahu & Agarwal (2017) using propensity score matching technique concluded that mergers and acquisitions have a positive impact on profitability in post-merger scenarios. Marieta et al. (2021) found a direct and positive link between the merger and acquisition process and the evolution of firm performance. Akhtar fintech and bank mergers and acquisitions have a significant positive impact (Quratulain & Safia 2022). Zheng & Zhong (2020) analyzed the relationship between merger and acquisition motives, executive turnover and corporate financial performance based on principal-agent theory and operational synergy theory, and the results of the study showed that bona fide mergers and acquisitions play a favorable role in improving corporate financial performance. Jiang & Wang (2022) revealed the mechanism of the impact of M&A behavior on M&A performance of technology-acquiring firms from the aspects of M&A frequency and M&A scale, and finds that the long-term impact of M&A frequency and M&A scale on

M&A performance of technology-acquiring firms is positive. Wang (2024) empirically found that digitally transformed firms initiated more M&A activities and achieved higher M&A performance.

#### **Mergers and Acquisitions Do Not Affect Business Performance**

Baburam et al. (2023) assessed the impact of mergers and acquisitions on the financial performance of two commercial banks and found that the second commercial bank did not have a significant impact on the financial ratios of the post-merger period, except for the pre-merger dividend per share. Domestic scholars Wang & Pei (2013) used data to empirically corroborate the mergers and acquisitions events of listed companies, exploring the moderating role of mergers and acquisitions performance by adding merger and acquisition scale, research and development investment cross-multiplier terms, and the results proved that mergers and acquisitions could not bring about good business performance for the main merger and acquisition enterprises, i.e., there is no sign of significant enhancement of the improvement of the performance of the enterprises before and after mergers and acquisitions through mergers and acquisitions.

#### **A Study of the Impact of Firm Life Cycle on Merger and Acquisition Performance**

Canina et al. (2013) found that horizontal mergers and acquisitions of firms in the decline stage are preferable to diverse mergers and acquisitions that incorporate multiple approaches. Ames et al. (2020) found that different life cycle stages of acquiring firms affect the changes in merger and acquisition performance. Liu (2017) analyzed the listed companies in Shanghai and Shenzhen that had mixed mergers and acquisitions as the object and found that when the enterprises were in different life cycle stages, the performance achieved by different types of corporate mergers and acquisitions was different.

### **Literature Synthesis**

Existing research presents mixed findings on the financial outcomes of M&A, suggesting its impact is contingent on firm-specific factors. The firm life-cycle theory provides a compelling lens to explain this heterogeneity, as strategic resources and priorities differ across growth, maturity, and recession stages.

However, the literature remains fragmented. Most studies focus on a single stage or performance dimension, lacking a systematic comparative analysis across all life-cycle stages. Furthermore, an integrated framework that simultaneously examines multiple financial metrics and is empirically tested in major emerging markets like China is underdeveloped.

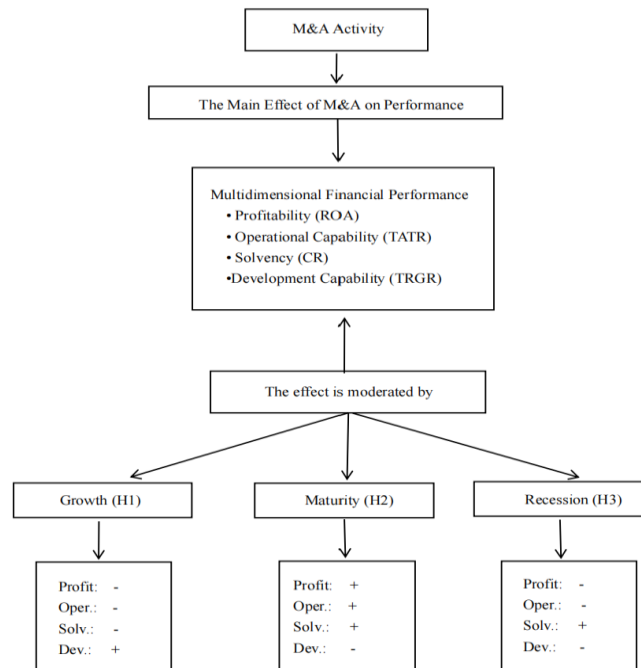
To address these gaps, this study develops a contingency framework to answer the core research question: How does the impact of M&A on financial performance differ for acquiring firms in the growth, maturity, and recession stages? Using a large-sample longitudinal dataset of Chinese A-share listed companies, this research contributes by: (1) clarifying the moderating

role of the life-cycle stage on M&A financial outcomes, (2) revealing the distinct mechanisms and constraints at each stage, and (3) providing stage-specific, actionable insights for managerial practice.

**Research Hypotheses**

Building upon the theoretical foundations reviewed above, the core thesis of this study is that the association between corporate M&A activities and multidimensional financial performance is not uniform but is systematically

moderated by the firm’s life-cycle stage. This contingency perspective forms the theoretical framework of this research, as depicted in Figure 1. Specifically, we posit that the associations between M&A and various dimensions of financial performance (profitability, operational capability, solvency, and development capability) will exhibit predictable, differential patterns across the growth, maturity, and recession stages. Following this framework, we next elaborate on the theoretical rationale for M&A at each respective stage and then formalize the corresponding research hypotheses.



**Figure 1.** Theoretical Framework: The Moderating Role of Firm Life-Cycle Stage

Note: This framework illustrates how the firm’s life-cycle stage moderates the association between M&A activity and multidimensional financial performance. The table summarizes the hypothesized direction of associations (“+” for positive, “-” for negative) for growth-, maturity-, and recession-stage firms as posited in the research hypotheses (H1–H3). In the table, “Profit.” = Profitability; “Oper.” = Operational Capability; “Solv.” = Solvency; “Dev.” = Development Capability

*Theoretical Analysis and Assumptions of M&A on the Financial Performance of Enterprises in the Growth Period are Proposed*

For growth-stage businesses, it takes time for the combined business to adjust and integrate the business to achieve the desired synergies. This can involve redesigning processes, optimizing resource allocation, integrating technology systems, etc., all of which can take time to complete, and the operations and profitability of the business may be affected to some extent during this time. After the completion of the merger, due to the uncertainty in the above-mentioned integration process, the performance of the enterprise may fluctuate, which will affect the company’s stock price and financing ability. Although M&A may not immediately improve profitability in the short term, successful M&A can help companies expand market share, reduce business risks, increase stability, improve competitiveness, expand into new business areas, etc., thereby laying the foundation for long-term growth (Deng & Li 2018). From an economics perspective, firms in the growth

stage are typically characterized by abundant investment opportunities yet face resource constraints. Their M&A activity can thus be interpreted as a form of strategic investment aimed at accelerating the acquisition of critical resources like market access or technologies to capture emerging opportunities. Consequently, the observed short-term pressure on profitability and operational efficiency reflects the necessary costs of integration and the amortization of these strategic investments. In contrast, the enhancement in development capability, measured by total asset growth, signifies the deliberate accumulation of strategic assets for future value creation. This pattern aligns with the core economic rationale of prioritizing growth and resource acquisition over immediate profitability during a firm’s expansion phase.

Based on this, the first hypothesis is proposed.

**H1:** Compared to acquirers in the maturity and recession stages, M&A activity in growth-stage firms is positively associated with development capability, but negatively associated with short-term profitability, operational efficiency, and solvency.

### *Theoretical Analysis and Assumptions of Mature M&A on the Financial Performance of Enterprises*

Mature companies often engage in mergers and acquisitions with the aim of expanding market share, increasing sales channels, or achieving cost advantages. The scale advantage and integration benefits obtained through mergers and acquisitions can significantly reduce the production cost per unit of product or service, improve operational efficiency, and thus increase profitability. Mature companies typically have abundant resources and capital, which allows them to better integrate existing resources and optimize capital allocation. However, mature companies are often in relatively mature markets with limited growth rates. As a result, despite the scale of mergers and acquisitions, companies may not be able to significantly improve their ability to grow. Even if new technologies or products are acquired through mergers and acquisitions, enterprises may not be able to effectively integrate and apply these innovations, thus limiting the improvement of development capabilities. The economic context of mature firms is often marked by strong operating cash flows alongside a narrowing set of high-return growth opportunities. M&A at this stage may therefore be driven by the pursuit of operational synergies to achieve economies of scale and scope, as well as financial synergies to optimize the capital structure. Furthermore, insights from agency theory suggest that managerial motives for empire-building may also play a role when free cash flow is abundant. The predicted improvement in profitability and operational capacity stems primarily from the efficiency gains and cost reductions realized through consolidation. The expected lack of significant improvement in development capability, however, reflects the underlying economic constraints of operating in saturated core markets where the marginal returns on further investment are diminishing.

Based on the above analysis, the second hypothesis is proposed.

**H2:** Compared to acquirers in the growth and recession stages, M&A activity in mature-stage firms is positively associated with profitability, operational efficiency, and solvency, but negatively associated with development capability.

### *Theoretical Analysis and Assumptions of M&A on the Financial Performance of Enterprises During the Recession Period are Proposed*

Businesses in recessions are often in a sluggish market, with reduced consumer purchasing power and weak demand. In this case, it is difficult for companies to quickly improve profitability through mergers and acquisitions, because the market size is limited, competition is fierce, price wars may intensify, and it is difficult to achieve profit growth. In the context of economic recession, enterprises may be in a state of strategic confusion, and the mergers and acquisitions carried out may lack strategic coherence, and it is difficult to clearly bring substantial help to the long-term development of the enterprise. Despite the challenges of M&A in recession, M&A has the potential to improve a company's ability to repay its debts. Because through mergers and acquisitions, companies can acquire new assets or businesses, thereby expanding scale, increasing revenue streams, improving

balance sheet stability, and enhancing debt servicing ability (Du et al. 2022). The economics of mergers and acquisitions for firms in the recession stage can be understood through the lens of strategic adaptation under financial distress. For these firms, M&A or asset restructuring often represents a strategic option to reorganize the business portfolio, divest non-core assets, and reduce financial leverage to mitigate distress costs and avoid bankruptcy. Thus, any improvement in solvency is a direct outcome of deliberate de-risking and balance sheet repair. The anticipated inability to enhance profitability or development capability fundamentally mirrors the challenging economic reality of operating in a declining industry, where eroded competitive advantages and weak market demand severely limit the potential for near-term value-creating growth.

Based on the above analysis, a third hypothesis is proposed.

**H3:** Compared to acquirers in the growth and maturity stages, M&A activity in recession-stage firms is positively associated with solvency, but negatively associated with profitability, operational efficiency, and development capability.

## **Empirical Design**

### **Empirical Sample Selection**

In order to ensure their credibility and reliability, this paper uses the successful M&A success cases of the China M&A database in the financial terminal of Wind Consulting, combined with the official website of the Shanghai Stock Exchange, the official website of the Shenzhen Stock Exchange and the CSMAR database of Guotaian.

This paper selects A-share listed companies that implemented mergers and acquisitions in the Chinese market from 2000 to 2020, and the M&A cases of M&A changes at the time of the final completion of the M&A as the research object, and the financial data range is from 2000 to 2023. In order to derive the effect of the change in performance through M&A, the following filter criteria are listed and screened again:

(1) Exclude M&A samples that do not have control of the target company.

(2) Exclude outstanding M&A transactions, including ongoing and failed M&A transactions.

(3) It does not include PT and ST companies and companies that have been delisted, because the operating performance of these companies generally fluctuates greatly, which will affect the real business situation of the enterprise (Hou et al. 2017).

(4) Exclude financial companies.

Due to the complex integration process after M&A, the difficulty of cultural integration and strategic adjustment, the time required to realize synergies, and the combined effect of changes in the external environment, the impact of M&A on the financial performance of enterprises lags behind. Therefore, this paper draws on the research method of Jiang (2022) to analyze the financial performance of the acquiring company in the current year and the three years after the merger. Through screening, this paper finally roughly selected 8,212 mergers and acquisitions, and 2,788 listed companies in the year of mergers and acquisitions and the financial data of the three years after the merger.

**Empirical Variable Design**

*Dependent Variables*

In order to evaluate and accurately measure the performance of Chinese listed companies more objectively, this paper draws on the evaluation indicators used by scholars in the past and selects four capability indicators, namely: profitability index, operating ability index, debt solvency index and development ability index, which can be classified as follows:

(1) An indicator that reflects profitability

Following the approach in studies on M&A performance in China (Jiang 2022), we select Return on Assets (ROA) to reflect profitability. Return on assets is an important financial indicator to evaluate the profitability and efficiency of a business. A high return on assets indicates that a company is able to use its assets more efficiently to generate profits, indicating that the company’s operational efficiency and profitability are stronger.

(2) Indicators that reflect operational capabilities

To measure operational capability, we employ the Total Asset Turnover Ratio (TATR), a common metric in empirical studies of M&A efficiency (Cao & Wang 2022). The total asset turnover ratio shows how a business uses its total assets for production and sales by measuring the ratio of sales revenue to total assets. A high total asset turnover ratio means that a business is using its assets efficiently to generate revenue, and vice versa, it may indicate inefficient asset utilization.

(3) An indicator of solvency

We use the Current Ratio (CR) to assess short-term solvency, following the practice in financial analyses of M&A case (Jiang 2014). The current ratio is a positive indicator used in financial analysis to evaluate the short-term solvency of a company. This ratio reflects the level of liquidity of the company’s assets, and a higher current ratio indicates that the company has sufficient liquid assets to pay off its upcoming debts, reducing the risk of short-term default. A current ratio that is too low can mean that the business is under financial pressure in the short term and is unable to repay its liabilities in a timely manner, increasing the risk of bankruptcy or restructuring. A current ratio between 1.5 and 2 is generally considered ideal.

(4) Indicators that reflect developmental capacity

The Growth Rate of Total Assets (TRGR) is selected to capture development capacity and growth potential,

aligning with the measurement of expansionary outcomes in M&A research (Tang *et al.*, 2022). Economically, this metric transcends mere scale measurement. It serves as a proxy for the intensity of a firm’s investment in future-oriented, growth-generating assets. It captures the commitment of resources toward seizing market opportunities and building long-term competitive advantage, thereby reflecting the firm’s growth potential and strategic posture beyond its current profitability profile. The growth rate of total assets reflects the expansion of the company’s asset size over a period of time. A higher growth rate in total assets indicates that a company is expanding its asset base, which may mean that the company is expanding production capacity, increasing investment, or increasing market share. This indicator serves as an important reference to measure the future development potential of enterprises. Sustained growth in total assets is usually accompanied by business expansion and increased market competitiveness, which is a positive sign for the healthy development of the enterprise (Jing & Wang 2022).

*Explanatory Variables*

The life cycle theory believes that there is a certain similarity between the development of enterprises and the life cycle of animals, which is reflected in the process of change from establishment, growth, maturity, decline to elimination, and the life cycle of enterprises also reflects the financial characteristics of large differences. In this paper, we use the cash flow portfolio discrimination method established by Dickinson (2011) to divide the life cycle of enterprises, and refer to the practice of scholar Hou *et al.* (2017), which can understand that listed companies have passed the start-up period and merged the phase-out period into the recession period. Therefore, the explanatory variables in this paper are: growth period, maturity period and decline stage. The economic rationale underpinning this cash flow pattern method is that the systematic combination of signs from operating, investing, and financing activities captures the dominant economic imperative at each life-cycle stage. It distinguishes phases of investing for growth from phases of harvesting and sustaining in maturity, and from patterns indicative of strategic contraction or restructuring in recession. This approach offers a more dynamic and economically grounded classification than static measures based on firm age or size alone (See Table 1).

Table 1

**Types of Cash Flow Portfolios at Different Stages of the Enterprise Life Cycle**

Judge the results in the life cycle stage	Direction of operating cash flow	Investment cash flow direction	Direction of cash flow for financing
Start-up stage	-	-	+
Growth period	+	-	+
Maturity	+	-	-
Recession (phase-out)	-	-	-
Recession (phase-out)	+	+	+
Recession (phase-out)	+	+	-
Recession period	-	+	+
Recession period	-	+	-

In this paper, the explanatory variables are set as dummy variables, as follows: when the life cycle of the research firm is the growth stage, the growth period is 1, and the maturity and decline stages are 0; When the life cycle of the research enterprise is the mature stage, the maturity period is 1, and the growth and decline stages are 0. When the life cycle of the study firm is in the recession period, the recession period is 1, and the growth and maturity phases are 0.

*Control Variables*

In order to ensure the reliability, objectivity and effectiveness of the research and prevent the occurrence of bias results caused by other related variables, this paper selects equity multiplier, working capital ratio, net profit margin, current asset ratio, current liability ratio, operating profit ratio, enterprise size, and establishment period as the control variables of the study (See Table 2).

Table 2

**Names, Symbols, and Measurement Methods of Major Variables**

Variable type	The name of the variable	Symbol	Variable measurement methods
Explanatory variables	Return on assets	Roa	Net Profit/Average Balance of Total Assets
	Total Asset Turnover	TATR	Operating Income/Average Total Assets
	liquidity ratio	Cr	Total Current Assets/Total Current Liabilities
	Total asset growth rate	TRGR	The growth of total assets during the year/the total assets at the beginning of the year
Explanatory variables	Growth period	LC <sub>1</sub>	The growth period is a dummy variable: the growth period is 1, and the maturity and decline phases are 0
	Maturity	LC <sub>2</sub>	The maturity period is a dummy variable: the maturity period is 1, and the growth and decline stages are 0
	Recession period	LC <sub>3</sub>	The recession period is a dummy variable: the recession period is 1, and the growth and maturity phases are 0
Control variables	Equity multiplier	Em	Total Assets/Equity Capital
	Working capital ratio	Wcr	(Current Assets - Current Liabilities) / Total Assets
	Net profit margin	Npm	Net profit/main business income
	Current asset ratio	Car	Total Current Assets/Total Assets
	Current debt ratio	Cdr	Total Current Liabilities/Total Liabilities
	Percentage of operating profit	POP	Operating profit/gross profit
	The size of the enterprise	Size	The natural logarithm of the acquirer’s total assets in the year prior to the acquisition
	Years of establishment	Age	The natural logarithm of the year of the merger and acquisition minus the time of establishment, the time of establishment of the enterprise is approximately the end of the year

**Empirical Model Building**

Based on the previous research, this paper uses multiple regression to analyze the impact of M&A on financial performance in different life cycles. To test hypotheses H1, H2 and H3, the following models are constructed:

$$y_{it} = \beta_0 + \beta_1 LC1_{it} + \beta_2 Em_{it} + \beta_3 Wcr_{it} + \beta_4 Npm_{it} + \beta_5 Car_{it} + \beta_6 Cdr_{it} + \beta_7 POP_{it} + \beta_8 Size_{it} + \beta_9 Age_{it} + \alpha_i + \gamma_t + \varepsilon_{it} \quad (1)$$

$$y_{it} = \mu_0 + \mu_1 LC1_{it} + \mu_2 Em_{it} + \mu_3 Wcr_{it} + \mu_4 Npm_{it} + \mu_5 Car_{it} + \mu_6 Cdr_{it} + \mu_7 POP_{it} + \mu_8 Size_{it} + \mu_9 Age_{it} + \alpha_i + \gamma_t + \varepsilon_{it} \quad (2)$$

$$y_{it} = \gamma_0 + \gamma_1 LC1_{it} + \gamma_2 Em_{it} + \gamma_3 Wcr_{it} + \gamma_4 Npm_{it} + \gamma_5 Car_{it} + \gamma_6 Cdr_{it} + \gamma_7 POP_{it} + \gamma_8 Size_{it} + \gamma_9 Age_{it} + \alpha_i + \gamma_t + \varepsilon_{it} \quad (3)$$

Among them, Equation (1) tests the impact of M&A on financial performance for firms in the growth stage, thereby validating Hypothesis H1. Equation (2) examines this impact for mature-stage firms, corresponding to Hypothesis H2, and Equation (3) does so for recession-stage firms, relating to Hypothesis H3.

The variables in the models are defined as follows. The dependent variable, denoted as  $y_{it}$  represents the financial performance of firm  $i$  in year  $t$ . It is measured by four indicators: Return on Assets (ROA) for profitability, Total Asset Turnover (TATR) for operational capability, Current Ratio (CR) for solvency, and Total Asset Growth Rate

(TRGR) for development capability. The core explanatory variables are the life-cycle stage dummies:  $LC1_{it}$ ,  $LC2_{it}$  and  $LC3_{it}$ . Each dummy equals 1 if firm  $i$  is classified as being in the growth, maturity, or recession stage, respectively, in year  $t$ , and 0 otherwise. A statistically significant coefficient on these dummies ( $\beta_1, \mu_1$  or  $\gamma_1$ ) would indicate that the financial effect of M&A differs across the specified life-cycle stage. The model also includes a set of control variables: the Equity Multiplier ( $Em_{it}$ ), Net Profit Margin ( $Npm_{it}$ ), Working Capital Ratio ( $Wcr_{it}$ ), Current Asset Ratio ( $Car_{it}$ ), Current Debt Ratio ( $Cdr_{it}$ ), Proportion of Operating Profit ( $POP_{it}$ ), firm size ( $Size_{it}$ ), and firm age ( $Age_{it}$ ).  $\varepsilon$  represents the random error term.  $\alpha_i$  denotes firm fixed effects to control for time-invariant firm characteristics.  $\gamma_t$  denotes year fixed effects to control for common shocks and time trends.  $\beta_0, \gamma_0$ , and  $\gamma_0$  represent the intercept term (Liu 2017).

**Note on Research Design and Interpretation**

It is important to note that the sample of this study consists exclusively of firms that completed M&A transactions. This research design is observational and aims to map the systematic differences in post-M&A financial outcomes among acquiring firms across different life-cycle stages. The estimated coefficients primarily capture cross-sectional variation—that is, how post-M&A performance

indicators differ for acquirers in one life-cycle stage relative to others—within the population of M&A-active firms. While firm and year fixed effects are employed to control for time-invariant heterogeneity and common temporal shocks, this approach does not constitute a causal identification strategy (e.g., difference-in-differences with a non-acquiring control group). Therefore, the findings are best interpreted as revealing robust associative patterns and stage-contingent performance profiles following M&A, which provide a foundational empirical landscape and generate hypotheses for future causal inquiry.

**Empirical Testing and Analysis**

**Descriptive Statistics**

*Sample Distribution*

As shown in Table 3, the total sample size of enterprises in this paper is 8212, and the sample is divided into three life cycle stages according to the cash flow combination principle analysis in Table 1. Among them, there are 2,522 enterprises in the growth stage, accounting for 30.71 %; There were 4,261 mature enterprises, accounting for 51.89 %; There were 1,429 enterprises in the recession period, accounting for 17.40 %. From the specific values, it can be seen that the number of mergers and acquisitions carried out by enterprises in the growth stage is more than that of enterprises in the mature stage, and the number of enterprises in the mature stage of mergers and acquisitions is more than that of enterprises in the decline stage.

Table 3

**Life Cycle Sample Distribution**

Enterprise lifecycle	Sample size	Percentage of volume
Growth period	4261	51.89%
Maturity	2522	30.71%
Recession period	1429	17.40%
Total	8212	100%

**Descriptive Statistical Analysis**

Before performing regression analysis, a basic descriptive statistical analysis was performed for each of the variables covered in this chapter, listing the total observations, the mean of the variables, the standard deviation, the minimum, and the maximum values of the sample. The descriptive statistical results on variables in the three years after the merger and acquisition are similar to those in the year of the merger and acquisition, so they will not be repeated here. Therefore, this paper only lists the descriptive statistical results of the explanatory variables, explanatory variables and control variables in the year of the M&A, as shown in Table 4:

As can be seen from Table 4, there are a total of 8212 observations, and the mean values of the explanatory variables M&A performance return on assets (Roa), total asset turnover (TRAR), current ratio (Cr) and total asset growth rate (TRGR) are 0.0523, 0.631, 2.148 and 0.252, respectively, and the mean results are all positive, indicating that the M&A activities are conducive to improving the business performance of enterprises. The standard deviation of the current ratio (Cr) is larger than that of other explanatory variables, indicating that M&A has a large fluctuation on the short-term asset flow of enterprises (Tong *et al.*, 2021).

Table 4

**Descriptive Statistical Results of Variables**

Variable	N	Mean	SD	Min	Max
Roa	8212	0.0523	0.0651	-0.240	0.243
TATR	8212	0.631	0.435	0.0804	2.607
Cr	8212	2.148	1.956	0.325	12.52
TRGR	8212	0.252	0.426	-0.341	2.592
LC <sub>1</sub>	8212	0.519	0.500	0	1
LC <sub>2</sub>	8212	0.307	0.461	0	1
LC <sub>3</sub>	8212	0.174	0.379	0	1
Em	8212	0.450	0.413	0.00173	28.55
Wcr	8212	0.192	0.253	-0.504	0.765
Npm	8212	0.0804	0.146	-0.702	0.486
Car	8212	0.556	0.199	0	0.999
Cdr	8212	0.824	0.174	0.0935	1.161
POP	8212	0.876	0.406	-1.943	1.641
Size	8212	9.588	0.547	7.231	12.40
Age	8212	1.183	0.184	0	1.716

*Note: This table only lists the descriptive statistical results of all variables in the sample in the year of M&A.*

**Results of Variance Inflation Factor Test**

Variable	VIF	1/VIF
LC <sub>2</sub>	2.16	0.463724
LC <sub>1</sub>	2.03	0.493774
Cr	1.64	0.608561
Cdr	1.61	0.620615
Car	1.58	0.631335
Size	1.35	0.741307
TRGR	1.24	0.809067
Em	1.22	0.817925
TATR	1.22	0.821061
Npm	1.20	0.835201
Age	1.06	0.944954
Wcr	1.06	0.946951
POP	1.01	0.986460
MeanVIF	1.41	

In order to ensure the rigor of the study and further prevent the variables from being biased by the multicollinearity problem, the variance expansion factor is selected to test whether the variables have collinearity problems, and the results are shown in Table 5. The VIF values of the variables are less than 2.2, and the average value is 1.41, which is enough to indicate that there is no serious multicollinearity problem among the variables studied in this paper, and the model has a good effect.

### Multiple Regression Analysis

This paper uses Stata 17.0 software to conduct an empirical study, and uses the data as unbalanced panel data to analyze the impact of M&A on the financial performance of enterprises in the growth, maturity and recession stages. Since this paper studies the financial performance of enterprises in the year of mergers and acquisitions and the three-year lag of mergers and acquisitions, the data of mergers and acquisitions for four years is grouped. Based on the theoretical analysis and the experience of previous researchers, it is preliminarily determined that the empirical study uses the fixed-effect regression model for regression analysis (Wang & Pei 2013).

To enhance conciseness and readability, this section summarizes the core empirical findings in Tables 6 through 8. These synthesized tables present the cross-period impact of the firm life-cycle stages (growth, maturity, and recession) on the four financial performance dimensions following M&A. Complete regression results, including the coefficients for all control variables, are provided in Appendix A (Tables A1–A6) for readers who wish to examine the full model estimations.

### *Association between M&A and Financial Performance in the Growth Stage*

The results in Table 6 reveal a clear, differentiated pattern of associations between M&A activity by growth-stage firms and the four financial performance indicators.

In the M&A year and the three subsequent years, the life-cycle variable LC1 shows significantly negative associations with Profitability (ROA), Operational Capability (TATR), and Solvency (CR). This indicates that, in cross-sectional comparisons among M&A-active firms, growth-stage acquirers tend to exhibit lower short-term profit efficiency, asset turnover, and liquidity ratios relative to acquirers in other life-cycle stages. Economically, this pattern reflects the treatment of M&A as a strategic investment by growth-stage firms to accelerate the acquisition of critical resources—such as market access or technologies—for capturing emerging opportunities. The observed short-term pressures on profitability and operational efficiency represent the necessary costs of integration and the amortization of these strategic investments.

In sharp contrast, LC1 shows a significantly positive association with Development Capability (TRGR) across all observed years. This suggests that, among firms that engage in M&A, growth-stage firms demonstrate a significantly faster pace of asset scale expansion. This positive link underscores the core strategic priority at this stage: the deliberate accumulation of strategic assets for future value creation over immediate profitability.

In summary, the empirical results provide strong support for Hypothesis H1, uncovering a typical financial profile for growth-stage acquirers: linked to stronger long-term development potential but also to weaker short-term financial performance.

Table 6

**Regression Results: M&A and Financial Performance -Growth-Stage Firms**

Financial Dimension	Year0	Year1	Year2	Year3
ROA	-0.004*** (-4.62)	-0.004*** (-4.12)	-0.005*** (-5.55)	-0.005*** (-5.18)
TATR	-0.034*** (-3.72)	-0.017* (-1.83)	-0.022** (-2.35)	-0.017* (-1.84)
CR	-0.477*** (-13.76)	-0.388*** (-12.71)	-0.364*** (-11.95)	-0.325*** (-10.63)
TRGR	0.285***	0.057***	0.035***	0.014***

Financial Dimension	Year0	Year1	Year2	Year3
	(33.15)	(10.56)	(6.82)	(2.94)
Controls & Year FE	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208
Adj. R <sup>2</sup> Range	0.662–0.721	0.109–0.140	0.269–0.375	0.124–0.162

*Note: This table reports coefficients with t-statistics in parentheses for the growth-stage dummy (LC1). Financial performance is measured by four indicators: Return on Assets (ROA) for Profitability; Total Asset Turnover (TATR) for Operational Capability; Current Ratio (CR) for Solvency; Total Asset Growth Rate (TRGR) for Development Capability. \*\*\*, \*\*, \* denote significance at 1%, 5%, 10%. All models include controls & year fixed effects. Full results in Appendix.*

*Association between M&A and Financial Performance in the Maturity Stage*

Table 7 presents the financial performance profile associated with maturity-stage acquirers. The results show that the life-cycle variable LC2 has significantly positive associations with Profitability (ROA), Operational Capability (TATR), and Solvency (CR) across all post-M&A periods.

This indicates that, cross-sectionally, maturity-stage M&A firms generally exhibit higher return on assets, stronger asset turnover efficiency, and more robust short-term liquidity. This pattern of association aligns closely with the motive of mature firms to pursue operational synergies through M&A to achieve economies of scale and scope. The efficiency gains and cost reductions realized through consolidation are primary drivers of the observed links to improved profitability and operational capacity.

Concurrently, LC2 shows a significantly negative association with Development Capability (TRGR) in

the M&A year and the following two years, with a negative but insignificant coefficient in the third year. This suggests that maturity-stage M&A firms are less associated with rapid asset growth. This fundamentally mirrors the underlying economic constraints of operating in saturated core markets, where the marginal returns on further investment are diminishing, thereby severely limiting the enhancement of development capability through M&A. Even when new technologies are acquired, their effective integration and application may be constrained.

Thus, the pattern of financial performance associations for maturity-stage acquirers is characterized by: strong positive associations with operational efficiency and financial stability indicators, but a weak or negative association with growth potential indicators. This result fully aligns with the expectations of Hypothesis H2.

Table 7

**Regression Results: M&A and Financial Performance -Maturity-Stage Firms**

Financial Dimension	Year0	Year1	Year2	Year3
ROA	0.012*** (12.82)	0.010*** (10.37)	0.010*** (9.61)	0.010*** (9.36)
TATR	0.101*** (10.41)	0.069*** (7.09)	0.063*** (6.36)	0.055*** (5.58)
CR	0.315*** (8.38)	0.302*** (9.19)	0.309*** (9.45)	0.277*** (8.48)
TRGR	-0.239*** (-25.24)	-0.038*** (-6.52)	-0.023*** (-4.24)	-0.008 (-1.53)
Controls & Year FE	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208
Adj. R <sup>2</sup> Range	0.668–0.723	0.112–0.149	0.265–0.366	0.116–0.140

*Note: Reports coefficients with t-statistics in parentheses for the maturity-stage dummy (LC2). Variable measurement and model specification are identical to Table 6. \*\*\*, \*\*, \* denote significance at 1%, 5%, 10%.*

*Association between M&A and Financial Performance in the Recession Stage*

The results in Table 8 depict the financial performance profile associated with recession-stage acquirers. A prominent feature is the consistently significantly positive association between the life-cycle variable LC3 and Solvency (CR) across post-M&A periods.

This indicates that, among firms undertaking M&A, those in the recession stage are associated with relatively stronger balance sheet structures and short-term liquidity positions. This can be understood through the lens of

strategic adaptation under financial distress. For these firms, M&A or asset restructuring often represents a strategic option to reorganize the business portfolio and divest non-core assets to reduce financial leverage, aiming to mitigate distress costs. Any positive link to solvency is a direct outcome of deliberate de-risking and balance sheet repair.

However, LC3 exhibits significantly negative associations with Profitability (ROA), Operational Capability (TATR), and Development Capability (TRGR). This suggests that recession-stage M&A firms are weakly associated with high profitability, efficient operations, and rapid asset growth. This, in essence, mirrors the challenging

economic reality of operating in a declining industry, where eroded competitive advantages and weak market demand severely limit the potential for near-term value-creating growth through M&A. Firms may be in a state of strategic confusion, and the M&A undertaken may lack strategic coherence.

In summary, the pattern of financial performance associations for recession-stage acquirers is characterized by: a strong positive association with the objectives of financial restructuring and risk mitigation (solvency), alongside negative associations with the objectives of profitability creation and growth drive. This pattern validates Hypothesis H3.

Table 8

### Regression Results: M&A and Financial Performance-Recession-Stage Firms

Financial Dimension	Year0	Year1	Year2	Year3
ROA	-0.011*** (-9.51)	-0.009*** (-7.23)	-0.006*** (-4.46)	-0.006*** (-4.66)
TATR	-0.093*** (-7.79)	-0.075*** (-6.26)	-0.057*** (-4.70)	-0.054*** (-4.43)
CR	0.354*** (7.70)	0.214*** (5.32)	0.161*** (4.01)	0.139*** (3.46)
TRGR	-0.135*** (-11.28)	-0.041*** (-5.80)	-0.025*** (-3.72)	-0.012** (-1.97)
Controls & Year FE	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208
Adj. R <sup>2</sup> Range	0.665–0.721	0.111–0.144	0.260–0.365	0.064–0.140

Note: Reports coefficients with t-statistics in parentheses for the recession-stage dummy (LC3). Variable measurement and model specification are identical to Table 6. \*\*\*, \*\*, \* denote significance at 1%, 5%, 10%.

### Robustness Test

#### Exclude State-Owned Enterprises

China's state-owned enterprises are affected by the policy and institutional environment, and their governance structures are often more complex and more affected by government policies and administrative interventions, which may lead to their behavior and performance being different from market-oriented non-state-owned enterprises. There may be more extreme values or outliers in the data of state-owned enterprises, which may affect the robustness of the regression analysis and the reliability of the results. The exclusion of state-owned enterprises can avoid the inconsistency between the model assumptions and the actual data, reduce the interference of these factors on the analysis results, and improve the applicability of the model and the explanatory power of the results (Canina et al. 2013). This approach of validating findings on a subsample excluding firms with unique governance structures is consistent with robustness checks in related literature (Fang & Zhu 2024). Therefore, this paper excludes the state-owned enterprises in the sample data for robustness test. Among them, there were 910 state-owned enterprises, 2,788 total sample enterprises, 1,878 sample sizes after excluding state-owned enterprises, and 5,277 mergers and acquisitions.

To mitigate potential estimation bias arising from the unique governance and policy roles of state-owned enterprises (SOEs), this section re-conducts the regression analysis after excluding SOE samples. The results (see

Appendix Tables B1 to B6) show that in the sub-sample of non-SOEs, the sign, statistical significance, and the differentiated patterns across profitability, operational capability, solvency, and development capability of the firm life-cycle dummy variables (LC1, LC2, LC3) are highly consistent with the full-sample baseline regression results (Tables 6-8). This confirms that the core findings of this paper are not driven by the SOE sample and are robust.

#### Substitution of Explanatory Variables

Through the previous analysis, this paper concludes the impact of corporate M&A on financial performance in the growth, maturity and decline periods. In order to improve the reliability and persuasiveness of the results, this paper uses the method of replacing the explanatory variables to conduct the robustness test again. This method of employing alternative measures for key constructs to verify robustness is a standard practice in empirical studies on M&A financial performance (Dickinson 2011). As shown in Table 9, the explanatory variables financial indicator Return on Assets (Roa), which measures profitability, is replaced with Return on Net Assets (Roe); financial indicator Total Asset Turnover Ratio (TATR), which measures operating capacity, is replaced with Inventory Ratio (Ir); financial indicator Current Ratio (Cr), which measures solvency, is replaced with Debt-to-Liability Ratio (Dr); and financial indicator Development Capacity Total Asset Growth Rate (TRGR) was replaced with Operating Income Growth Rate (OIGR).

**Replace the Evaluation Index of the Explanatory Variable**

Assessment content	Original financial indicators	Replacement of financial indicators	Formula
Profitability	Return on Assets (Roa)	Return on net assets (Roe)	Net profit/average balance of shareholders' equity
Operating ability	Total Asset Turnover Ratio (TATR)	Inventory Ratio (Ir)	Net inventories/total assets
Solvency	Current Ratio (Cr)	Gearing ratio (Dr)	Total liabilities at the end of the year/total assets at the end of the year
Development capacity	Total Asset Growth Rate (TRGR)	Operating Income Growth Rate (OIGR)	Increase in operating income/total operating income of the previous year

The financial indicator reflecting profitability is replaced by the return on net assets. The return on net assets directly reflects the ability of an enterprise to utilize shareholders' investment to generate net profit. A high return on net assets indicates that an enterprise is able to effectively utilize shareholders' investment to generate more profits, which indicates that the enterprise's operating efficiency and profitability are strong. One of the objectives of an enterprise is to maximize shareholder value. As an important indicator of return on shareholders' equity, return on net assets can help enterprises formulate strategies to optimize resource allocation and enhance shareholder value. The indicator can also be used to assess the performance of a company's management. A higher ratio usually means that management has performed well in utilizing shareholders' equity for operational management, and the indicator can be used internally to motivate management to improve operational efficiency and profitability.

The financial indicator reflecting operational capacity is replaced by the inventory ratio. The ratio of inventory to total assets can help an enterprise assess the efficiency of its inventory management. Higher ratios may indicate problems in inventory management, such as backlogs or poor sales. On the contrary, a lower ratio may indicate that the company is managing its inventory more efficiently and reducing inventory holding costs. Inventories are relatively illiquid and cannot be quickly converted into cash. Therefore, a high ratio of inventories to total assets may mean that the enterprise faces greater liquidity risk in the short term, as these assets cannot be quickly realized for repayment of short-term debts. By monitoring this ratio, a firm can adjust its inventory management strategy. For example, if the ratio is too high, an enterprise may need to reduce the amount of inventory and speed up inventory turnover in order to release more funds for other operating activities.

The financial indicator reflecting solvency is replaced by the gearing ratio. Unlike the current ratio, the gearing ratio focuses more on the long-term solvency of an enterprise. The gearing ratio reflects a company's level of financial leverage and demonstrates the relationship between liabilities and assets in a company's capital structure. By analyzing this negative ratio, a business can understand how much of its total assets are liabilities. A higher gearing ratio implies that a firm is using more debt to finance its operations, which, while it may improve the firm's earnings, also increases financial risk, especially in a downturn or rising interest rate environment may limit the firm's ability to raise capital and growth potential in the

future as a high level of debt may lead to higher interest expenses and greater financial stress. Lower gearing ratios are generally viewed as a lower credit risk, as the business has more assets to support its debt and a greater ability to service its debt. While this may indicate soundness, it may also reflect a lack of financial leverage to drive growth. The range of reasonable gearing ratios varies across industries. Capital-intensive industries (e.g. manufacturing and infrastructure) typically have high gearing, while service industries typically have low gearing.

The financial indicator reflecting the ability to grow has been replaced with the growth rate of operating income. An increase in the rate of growth of operating income usually indicates the success of the enterprise in expanding its market share, increasing its sales volume, and increasing the price of its products or services. This indicator demonstrates the competitiveness of the business in the marketplace. Sustained revenue growth usually means that a business is able to respond effectively to market competition, attract more customers and increase sales revenue. A moderate revenue growth rate indicates that the business is growing steadily, with both growth potential and controlled risk.

By substituting core financial indicators (e.g., using ROE instead of ROA) for recalculation, the detailed regression results are presented in Appendix Tables B7 to B12. The results show that after using alternative variable measurements, the sign, significance, and the revealed heterogeneous performance patterns of the life-cycle stage dummy variables (LC1, LC2, LC3) remain fundamentally unchanged, further confirming the robustness of the baseline conclusions.

## Conclusions and Implications

### Main Findings

Drawing on empirical evidence from Chinese A-share listed companies (2000-2023), this study systematically examines the heterogeneity of M&A financial performance from the dynamic perspective of the firm life cycle. The results indicate that a firm's life-cycle stage serves as a key contingency factor in understanding the financial outcomes of M&A. As comprehensively shown in Tables 6, 7, and 8, the association patterns between M&A and corporate financial performance differ significantly across stages, providing support for all our research hypotheses (H1-H3).

For growth-stage firms, M&A activity exhibits a distinct "growth-oriented" characteristic. While its implementation exerts short-term pressure on profitability (ROA), operational efficiency (TATR), and solvency (CR),

it significantly enhances development capability (TRGR). This suggests that M&A at this stage functions primarily as a strategic investment aimed at capturing future growth potential.

For mature-stage firms, M&A activity demonstrates a clear “efficiency-oriented” characteristic. Its implementation effectively improves profitability (ROA), operational efficiency (TATR), and solvency (CR), reflecting the successful pursuit of operational and financial synergies, while its impact on development capability (TRGR) is relatively limited.

For recession-stage firms, M&A activity presents a more “defense-oriented” characteristic. Its primary financial effect is to optimize the balance sheet through asset restructuring, thereby improving solvency (CR) and enhancing financial stability, whereas its role in improving profitability (ROA), operational efficiency (TATR), or driving development capability (TRGR) is weaker.

In conclusion, this study finds that the firm life-cycle stage systematically moderates the relationship between M&A activity and multidimensional financial performance. This contingency perspective offers an integrative analytical framework for understanding the complexity and context-dependency of M&A performance, illuminating how the logic of value creation in M&A evolves with a firm’s internal developmental dynamics.

### **Theoretical Implications**

The findings of this study offer several important implications for theories related to M&A and corporate strategy.

First, the results substantiate the firm life-cycle theory as a critical framework for explaining the heterogeneity in M&A outcomes. The financial impact of M&A is not uniform but varies systematically depending on the acquirer’s life-cycle stage, confirming that a firm’s strategic priorities and resource constraints evolve dynamically with its development.

Second, the findings elucidate the dominant forms of M&A synergies at different stages. Growth-stage firms primarily pursue growth synergies through market and resource acquisition; maturity-stage firms focus on operational and financial synergies aimed at efficiency gains and cost savings; while recession-stage firms shift towards defensive synergies centered on risk mitigation and financial restructuring. This discovery deepens the understanding of the dynamic realization paths of synergies.

Third, the study integrates traditional M&A motives such as growth and efficiency motives with the dynamic life-cycle perspective, constructing a more nuanced explanatory framework. This framework helps explain why similar M&A activities lead to divergent performance outcomes across different developmental phases.

### **Practical Implications**

The conclusions of this study provide clear practical guidance for various market participants.

For corporate managers and decision-makers, the key takeaway is the necessity of adopting a life-cycle-based mindset in M&A strategy. Before initiating an M&A, firms should accurately diagnose their developmental stage and set corresponding strategic objectives and performance expectations. Specifically, growth-stage firms should focus on accumulating long-term strategic assets while managing short-term financial pressures; maturity-stage firms should rigorously identify and integrate targets that offer tangible operational synergies; and recession-stage firms must carefully weigh the risks of using M&A as a financial rescue tool.

For investors and analysts, the analytical framework developed in this study can serve as a valuable tool for evaluating M&A transactions. Incorporating the acquirer’s life-cycle stage as a core factor in their analysis can lead to more accurate forecasts of post-M&A financial performance.

For regulators and policymakers, understanding the life-cycle heterogeneity of M&A performance can inform the design of more targeted policies. For instance, when reviewing transactions or guiding industrial consolidation, differentiated considerations based on a firm’s developmental stage could be applied.

### **Limitations and Future Research**

This study has several limitations, which also indicate directions for future research.

The primary limitation lies in the research design. As noted in Section 3.4, the sample consists exclusively of firms that completed M&A, making this an observational study. Although firm and year fixed effects are employed to control for unobserved heterogeneity, the design lacks a control group of non-acquiring firms and does not employ standard causal inference designs such as the difference-in-differences method. Consequently, the results primarily reveal cross-sectional differences in financial performance among M&A-active firms across life-cycle stages, serving as evidence of association rather than definitive causal effects. Endogeneity issues, including reverse causality or omitted variables, may persist.

In light of these limitations, future research could proceed in the following directions. First, more rigorous causal identification strategies could be adopted, such as leveraging exogenous policy shocks or constructing matched control samples, combined with difference-in-differences models, to estimate the treatment effects of M&A across life-cycle stages more accurately. Second, the dimensions for measuring performance could be expanded to include non-financial indicators such as innovation output and market share. Finally, cross-country or cross-industry comparative studies could be conducted to test the generalizability and boundary conditions of the patterns uncovered in this study.

Appendix

Table A1

Regression Results of M&A Profitability and Financial Performance of Operating Capacity in the Growth Stage

	Roa				TATR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>1</sub>	-0.004*** (-4.62)	-0.004*** (-4.12)	-0.005*** (-5.55)	-0.005*** (-5.18)	-0.034*** (-3.72)	-0.017* (-1.83)	-0.022** (-2.35)	-0.017* (-1.84)
Em	-0.008*** (-7.85)	-0.015*** (-12.96)	-0.001*** (-2.61)	-0.000 (-1.17)	0.060*** (5.34)	0.059*** (5.27)	0.021*** (6.62)	0.003 (0.98)
Wcr	-0.001 (-0.51)	-0.004** (-2.31)	-0.003 (-1.49)	-0.001 (-0.30)	0.005 (0.25)	0.008 (0.43)	-0.014 (-0.79)	-0.027 (-1.47)
Npm	0.355*** (119.62)	0.326*** (127.03)	0.344*** (141.87)	0.341*** (142.32)	-0.347*** (-11.04)	-0.116*** (-4.51)	-0.050** (-2.11)	-0.005 (-0.22)
Car	0.013*** (5.51)	0.012*** (4.83)	0.005* (1.80)	0.001 (0.49)	0.241*** (9.56)	0.214*** (8.45)	0.216*** (8.38)	0.212*** (8.25)
Cdr	0.045*** (15.60)	0.038*** (12.56)	0.041*** (13.20)	0.036*** (11.47)	0.730*** (24.13)	0.748*** (25.02)	0.714*** (23.87)	0.689*** (23.34)
pop	0.009*** (8.33)	0.008*** (7.66)	0.008*** (7.80)	0.006*** (5.69)	0.037*** (3.35)	0.021** (2.02)	0.019* (1.93)	0.024** (2.50)
Size	0.002*** (2.89)	0.005*** (5.10)	0.005*** (5.01)	0.006*** (6.01)	0.141*** (15.81)	0.133*** (15.03)	0.130*** (14.68)	0.123*** (14.08)
Age	-0.009*** (-3.10)	-0.017*** (-5.43)	-0.016*** (-4.44)	-0.013*** (-3.26)	0.012 (0.42)	-0.009 (-0.29)	-0.019 (-0.55)	-0.048 (-1.29)
_cons	-0.035*** (-3.67)	-0.032*** (-3.17)	-0.041*** (-3.88)	-0.049*** (-4.48)	-1.489*** (-14.73)	-1.399*** (-13.79)	-1.302*** (-12.67)	-1.181*** (-11.49)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.662	0.694	0.718	0.721	0.140	0.124	0.117	0.109
F	1790	2077	2327	2363	151.2	132.4	123.6	115.0

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table A2

Regression Results of M&A Debt Repayment and Development Capacity of Enterprises in the Growth Stage

	Cr				TRGR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>1</sub>	-0.477*** (-13.76)	-0.388*** (-12.71)	-0.364*** (-11.95)	-0.325*** (-10.63)	0.285*** (33.15)	0.057*** (10.56)	0.035*** (6.82)	0.014*** (2.94)
Em	-1.270*** (-29.59)	-1.165*** (-30.99)	-0.134*** (-12.77)	-0.114*** (-12.55)	-0.010 (-0.95)	0.014** (2.04)	-0.005*** (-2.70)	-0.002 (-1.48)
Wcr	0.126* (1.80)	0.124** (2.02)	0.310*** (5.17)	0.239*** (4.01)	0.029 (1.64)	0.032*** (2.99)	0.028*** (2.79)	0.013 (1.40)
Npm	2.581*** (21.49)	1.322*** (15.43)	1.455*** (18.83)	1.483*** (19.88)	0.607*** (20.39)	0.409*** (26.95)	0.392*** (30.50)	0.366*** (32.04)
Car	3.689*** (38.31)	3.281*** (38.69)	3.007*** (35.47)	2.985*** (35.13)	0.044* (1.86)	0.142*** (9.43)	0.136*** (9.64)	0.133*** (10.19)
Cdr	-2.833*** (-24.48)	-2.631*** (-26.33)	-2.313*** (-23.47)	-2.349*** (-24.09)	0.074*** (2.58)	-0.083*** (-4.70)	-0.046*** (-2.80)	-0.074*** (-4.94)
pop	0.062 (1.47)	0.037 (1.08)	0.040 (1.22)	0.055* (1.75)	0.031*** (2.99)	0.036*** (5.94)	0.019*** (3.49)	0.020*** (4.25)
Size	-1.023*** (-29.93)	-0.915*** (-30.84)	-0.937*** (-32.27)	-0.922*** (-32.04)	-0.015* (-1.80)	0.022*** (4.14)	0.032*** (6.59)	0.025*** (5.74)
Age	-0.758*** (-6.74)	-0.521*** (-4.86)	-0.517*** (-4.49)	-0.384*** (-3.13)	-0.123*** (-4.41)	-0.148*** (-7.79)	-0.142*** (-7.45)	-0.134*** (-7.14)
_cons	13.669*** (35.34)	12.413*** (36.62)	11.986*** (35.41)	11.708*** (34.45)	0.233** (2.43)	0.017 (0.28)	-0.087 (-1.55)	-0.017 (-0.33)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.375	0.355	0.279	0.269	0.162	0.124	0.133	0.140
F	550.9	506.3	356.8	338.4	180.0	132.0	143.6	151.9

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table A3

**Regression Results of M&A Profitability and Operating Capacity Financial Performance of Mature Enterprises**

	Roa				TATR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>2</sub>	0.012*** (12.82)	0.010*** (10.37)	0.010*** (9.61)	0.010*** (9.36)	0.101*** (10.41)	0.069*** (7.09)	0.063*** (6.36)	0.055*** (5.58)
Em	-0.008*** (-7.50)	-0.014*** (-12.75)	-0.001** (-2.46)	-0.000 (-1.02)	0.064*** (5.71)	0.062*** (5.53)	0.021*** (6.76)	0.003 (1.09)
Wcr	-0.001 (-0.41)	-0.004** (-2.22)	-0.003 (-1.56)	-0.001 (-0.37)	0.006 (0.35)	0.010 (0.55)	-0.015 (-0.81)	-0.027 (-1.49)
Npm	0.352*** (119.62)	0.324*** (126.92)	0.343*** (141.70)	0.340*** (142.38)	-0.366*** (-11.72)	-0.127*** (-4.94)	-0.059** (-2.52)	-0.013 (-0.59)
Car	0.016*** (6.72)	0.014*** (5.65)	0.007** (2.56)	0.003 (1.18)	0.265*** (10.53)	0.228*** (8.98)	0.228*** (8.85)	0.222*** (8.63)
Cdr	0.041*** (14.60)	0.035*** (11.82)	0.039*** (12.76)	0.035*** (11.05)	0.703*** (23.31)	0.730*** (24.41)	0.702*** (23.47)	0.679*** (23.01)
pop	0.008*** (7.92)	0.007*** (7.26)	0.008*** (7.66)	0.006*** (5.55)	0.033*** (2.97)	0.017* (1.72)	0.018* (1.82)	0.023** (2.38)
Size	0.002** (2.45)	0.004*** (4.75)	0.004*** (4.58)	0.005*** (5.60)	0.138*** (15.55)	0.132*** (14.91)	0.128*** (14.58)	0.121*** (14.03)
Age	-0.008*** (-2.82)	-0.016*** (-5.15)	-0.014*** (-4.03)	-0.011*** (-2.86)	0.020 (0.69)	-0.005 (-0.15)	-0.013 (-0.37)	-0.042 (-1.13)
_cons	-0.037*** (-3.87)	-0.034*** (-3.37)	-0.044*** (-4.20)	-0.052*** (-4.81)	-1.502*** (-14.96)	-1.408*** (-13.93)	-1.320*** (-12.87)	-1.198*** (-11.67)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.668	0.698	0.720	0.723	0.149	0.129	0.120	0.112
F	1838	2110	2351	2387	163.4	138.4	128.0	118.5

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table A4

**Regression Results of the Financial Performance of Mature Enterprises in M&A Debt Repayment and Development Capacity**

	Cr				TRGR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>2</sub>	0.315*** (8.38)	0.302*** (9.19)	0.309*** (9.45)	0.277*** (8.48)	-0.239*** (-25.24)	-0.038*** (-6.52)	-0.023*** (-4.24)	-0.008 (-1.53)
Em	-1.275*** (-29.47)	-1.173*** (-31.05)	-0.133*** (-12.65)	-0.114*** (-12.46)	-0.010 (-0.92)	0.015** (2.26)	-0.005*** (-2.70)	-0.002 (-1.48)
Wcr	0.100 (1.41)	0.107* (1.74)	0.300*** (4.99)	0.225*** (3.77)	0.042** (2.35)	0.035*** (3.23)	0.029*** (2.87)	0.013 (1.47)
Npm	2.555*** (21.08)	1.302*** (15.11)	1.454*** (18.72)	1.496*** (19.99)	0.634*** (20.72)	0.411*** (26.90)	0.390*** (30.30)	0.365*** (31.90)
Car	3.772*** (38.73)	3.359*** (39.35)	3.082*** (36.16)	3.053*** (35.79)	-0.017 (-0.68)	0.131*** (8.69)	0.130*** (9.18)	0.130*** (10.00)
Cdr	-2.805*** (-23.99)	-2.625*** (-26.08)	-2.310*** (-23.33)	-2.353*** (-24.04)	0.076*** (2.58)	-0.086*** (-4.84)	-0.048*** (-2.91)	-0.075*** (-4.99)
pop	0.045 (1.05)	0.027 (0.79)	0.034 (1.03)	0.053* (1.69)	0.044*** (4.05)	0.037*** (6.09)	0.019*** (3.57)	0.020*** (4.24)
Size	-1.055*** (-30.68)	-0.945*** (-31.80)	-0.968*** (-33.35)	-0.951*** (-33.13)	0.004 (0.50)	0.026*** (4.97)	0.035*** (7.21)	0.027*** (6.05)
Age	-0.640*** (-5.67)	-0.413*** (-3.85)	-0.407*** (-3.53)	-0.281** (-2.29)	-0.193*** (-6.77)	-0.164*** (-8.62)	-0.153*** (-8.01)	-0.138*** (-7.39)
_cons	13.444*** (34.54)	12.247*** (35.99)	11.827*** (34.83)	11.577*** (33.98)	0.366*** (3.72)	0.041 (0.68)	-0.073 (-1.30)	-0.012 (-0.24)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.366	0.349	0.275	0.265	0.118	0.116	0.130	0.140
F	530.2	493.2	348.6	332.2	125.8	123.3	140.0	151.1

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table A5

**Regression Results of M&A Profitability and Financial Performance of Operating Capacity During Recession**

	Roa				TATR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>3</sub>	-0.011*** (-9.51)	-0.009*** (-7.23)	-0.006*** (-4.46)	-0.006*** (-4.66)	-0.093*** (-7.79)	-0.075*** (-6.26)	-0.057*** (-4.70)	-0.054*** (-4.43)
Em	-0.008*** (-7.97)	-0.015*** (-13.28)	-0.001*** (-2.63)	-0.000 (-1.18)	0.059*** (5.29)	0.058*** (5.14)	0.021*** (6.65)	0.003 (1.01)
Wcr	-0.002 (-0.96)	-0.005*** (-2.64)	-0.003* (-1.65)	-0.001 (-0.57)	-0.002 (-0.10)	0.004 (0.23)	-0.017 (-0.91)	-0.030* (-1.65)
Npm	0.354*** (119.67)	0.326*** (127.08)	0.344*** (142.40)	0.343*** (143.42)	-0.356*** (-11.35)	-0.121*** (-4.73)	-0.048** (-2.04)	-0.001 (-0.02)
Car	0.016*** (6.65)	0.015*** (5.72)	0.006** (2.40)	0.003 (1.13)	0.265*** (10.46)	0.233*** (9.16)	0.230*** (8.90)	0.226*** (8.74)
Cdr	0.045*** (15.89)	0.038*** (12.81)	0.042*** (13.59)	0.037*** (11.71)	0.734*** (24.42)	0.748*** (25.16)	0.718*** (24.08)	0.689*** (23.43)
pop	0.008*** (7.82)	0.008*** (7.41)	0.008*** (7.68)	0.006*** (5.71)	0.032*** (2.91)	0.018* (1.78)	0.018* (1.82)	0.024** (2.48)
Size	0.001* (1.73)	0.004*** (4.02)	0.004*** (3.98)	0.005*** (4.90)	0.133*** (14.86)	0.126*** (14.21)	0.123*** (13.91)	0.116*** (13.33)
Age	-0.005* (-1.81)	-0.014*** (-4.35)	-0.013*** (-3.51)	-0.009** (-2.37)	0.043 (1.48)	0.016 (0.51)	0.005 (0.13)	-0.025 (-0.68)
_cons	-0.031*** (-3.28)	-0.029*** (-2.83)	-0.040*** (-3.73)	-0.047*** (-4.25)	-1.456*** (-14.42)	-1.363*** (-13.45)	-1.278*** (-12.42)	-1.155*** (-11.21)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observat ions	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.665	0.696	0.718	0.721	0.144	0.128	0.118	0.111
F	1813	2090	2322	2361	157.2	137.0	125.6	117.0

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table A6

**Regression Results of the Financial Performance of M&A Debt Repayment and Development Capacity of Enterprises in Recession**

	Cr				TRGR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>3</sub>	0.354*** (7.70)	0.214*** (5.32)	0.161*** (4.01)	0.139*** (3.46)	-0.135*** (-11.28)	-0.041*** (-5.80)	-0.025*** (-3.72)	-0.012** (-1.97)
Em	-1.294*** (-29.93)	-1.188*** (-31.39)	-0.136*** (-12.89)	-0.116*** (-12.66)	0.004 (0.32)	0.017** (2.53)	-0.004** (-2.55)	-0.002 (-1.42)
Wcr	0.100 (1.41)	0.099 (1.60)	0.303*** (5.02)	0.227*** (3.79)	0.047** (2.57)	0.036*** (3.29)	0.028*** (2.82)	0.013 (1.43)
Npm	2.674*** (22.07)	1.375*** (15.92)	1.526*** (19.63)	1.557*** (20.83)	0.562*** (17.84)	0.400*** (26.23)	0.385*** (29.96)	0.363*** (31.91)
Car	3.609*** (36.93)	3.253*** (37.82)	2.992*** (34.81)	2.979*** (34.65)	0.073*** (2.86)	0.148*** (9.75)	0.139*** (9.83)	0.134*** (10.26)
Cdr	-2.667*** (-22.95)	-2.512*** (-25.01)	-2.217*** (-22.39)	-2.279*** (-23.27)	-0.020 (-0.68)	-0.101*** (-5.72)	-0.055*** (-3.38)	-0.077*** (-5.17)
pop	0.075* (1.75)	0.049 (1.44)	0.042 (1.27)	0.062* (1.94)	0.028** (2.48)	0.034*** (5.54)	0.019*** (3.41)	0.020*** (4.18)
Size	-1.025*** (-29.67)	-0.926*** (-30.86)	-0.956*** (-32.56)	-0.940*** (-32.39)	-0.009 (-0.97)	0.023*** (4.26)	0.033*** (6.75)	0.026*** (5.78)
Age	-0.723*** (-6.37)	-0.471*** (-4.36)	-0.454*** (-3.91)	-0.328*** (-2.66)	-0.162*** (-5.50)	-0.152*** (-7.97)	-0.145*** (-7.58)	-0.134*** (-7.14)
_cons	13.241*** (33.93)	12.138*** (35.47)	11.795*** (34.52)	11.567*** (33.76)	0.447*** (4.41)	0.063 (1.04)	-0.064 (-1.13)	-0.008 (-0.14)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observat ions	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.365	0.345	0.268	0.260	0.0644	0.115	0.130	0.140
F	528.3	483.7	337.5	323.2	65.97	122.2	139.4	151.3

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B1

**Regression Results of M&A Profitability and Operating Capacity of SOEs in the Growth Period**

	Roa				TATR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>1</sub>	-0.004*** (-3.63)	-0.005*** (-3.67)	-0.006*** (-4.10)	-0.006*** (-3.98)	-0.017 (-1.58)	-0.011 (-1.08)	-0.016 (-1.52)	-0.014 (-1.32)
Em	-0.007*** (-5.64)	-0.014*** (-10.95)	-0.001 (-1.61)	-0.000 (-0.27)	0.055*** (4.95)	0.049*** (4.59)	0.018*** (6.13)	0.002 (0.87)
Wcr	-0.002 (-0.84)	-0.004* (-1.70)	-0.002 (-0.62)	-0.002 (-0.61)	0.001 (0.06)	0.028 (1.29)	0.022 (1.06)	0.002 (0.09)
Npm	0.352*** (103.35)	0.315*** (106.56)	0.340*** (118.06)	0.348*** (118.31)	-0.152*** (-4.68)	0.004 (0.17)	0.060*** (2.70)	0.061*** (2.75)
Car	0.015*** (4.59)	0.012*** (3.19)	0.001 (0.23)	-0.002 (-0.48)	0.201*** (6.30)	0.225*** (7.11)	0.224*** (7.15)	0.235*** (7.44)
Cdr	0.036*** (9.44)	0.033*** (7.83)	0.030*** (6.77)	0.026*** (5.86)	0.518*** (14.07)	0.582*** (16.29)	0.506*** (14.65)	0.471*** (13.77)
pop	0.014*** (7.84)	0.013*** (6.86)	0.011*** (6.11)	0.008*** (3.91)	0.047*** (2.77)	0.031* (1.95)	0.009 (0.60)	0.038** (2.47)
Size	0.000 (1.04)	0.007*** (5.00)	0.007*** (4.79)	0.010*** (6.77)	0.000*** (3.46)	0.132*** (11.04)	0.121*** (10.48)	0.117*** (10.21)
Age	0.000 (0.04)	-0.014*** (-3.34)	-0.010** (-1.97)	-0.006 (-1.02)	-0.000 (-0.28)	-0.044 (-1.21)	-0.059 (-1.54)	-0.100** (-2.44)
_cons	-0.020*** (-4.57)	-0.058*** (-3.77)	-0.065*** (-3.93)	-0.095*** (-5.62)	0.006 (0.14)	-1.254*** (-9.61)	-1.034*** (-8.14)	-0.941*** (-7.39)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,277	5,276	5,277	5,274	5,277	5,276	5,277	5,274
Adj_R <sup>2</sup>	0.688	0.712	0.732	0.738	0.0693	0.0857	0.0796	0.0743
F	1298	1453	1607	1650	46.89	58.13	53.94	50.25

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B2

**Regression Results of the Financial Performance of SOEs Excluding M&A Debt Repayment and Development Capacity During the Growth Period**

	Cr				TRGR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>1</sub>	-0.707*** (-13.64)	-0.492*** (-11.55)	-0.451*** (-10.81)	-0.398*** (-9.36)	0.314*** (24.59)	0.054*** (7.14)	0.029*** (4.08)	0.015** (2.30)
Em	-1.128*** (-21.06)	-0.947*** (-21.86)	-0.116*** (-10.05)	-0.102*** (-10.02)	-0.009 (-0.67)	0.016** (2.05)	-0.004* (-1.87)	-0.001 (-0.48)
Wcr	0.388*** (3.68)	0.167* (1.94)	0.406*** (4.92)	0.333*** (4.02)	0.029 (1.10)	0.022 (1.45)	0.042*** (3.00)	0.019 (1.54)
Npm	2.483*** (15.87)	1.289*** (12.84)	1.297*** (14.59)	1.483*** (16.44)	0.621*** (16.09)	0.393*** (21.87)	0.376*** (24.75)	0.362*** (26.90)
Car	4.568*** (29.75)	3.589*** (28.07)	3.349*** (26.65)	3.357*** (26.21)	-0.038 (-1.00)	0.093*** (4.05)	0.097*** (4.54)	0.097*** (5.07)
Cdr	-2.667*** (-15.06)	-2.763*** (-19.18)	-2.448*** (-17.64)	-2.506*** (-18.09)	0.018 (0.42)	-0.123*** (-4.77)	-0.058** (-2.46)	-0.096*** (-4.65)
pop	0.021 (0.26)	0.032 (0.50)	0.015 (0.26)	-0.009 (-0.15)	0.052*** (2.61)	0.051*** (4.46)	0.032*** (3.27)	0.032*** (3.36)
Size	-0.000*** (-8.11)	-1.138*** (-23.67)	-1.068*** (-23.13)	-1.029*** (-22.20)	-0.000 (-0.01)	0.057*** (6.64)	0.070*** (8.86)	0.054*** (7.74)
Age	-0.011** (-2.26)	-0.283* (-1.93)	-0.179 (-1.16)	0.042 (0.25)	-0.002** (-2.01)	-0.148*** (-5.66)	-0.122*** (-4.65)	-0.114*** (-4.59)
_cons	2.868*** (14.22)	14.227*** (27.03)	12.872*** (25.25)	12.275*** (23.79)	0.079 (1.58)	-0.249*** (-2.65)	-0.440*** (-5.05)	-0.276*** (-3.59)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,277	5,276	5,277	5,274	5,277	5,276	5,277	5,274
Adj_R <sup>2</sup>	0.289	0.321	0.257	0.247	0.145	0.121	0.138	0.154
F	241.7	280.4	206.0	195.8	102.8	84.21	96.71	109.8

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B3

**Regression Results of M&A Profitability and Operating Capacity of SOEs in the Maturity Period**

	Roa				TRAR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>2</sub>	0.011*** (9.08)	0.010*** (7.37)	0.010*** (6.62)	0.010*** (6.88)	0.100*** (8.57)	0.068*** (6.02)	0.056*** (5.01)	0.053*** (4.70)
Em	-0.006*** (-5.35)	-0.014*** (-10.83)	-0.001 (-1.49)	-0.000 (-0.14)	0.059*** (5.35)	0.052*** (4.84)	0.018*** (6.26)	0.002 (0.98)
Wcr	-0.002 (-0.77)	-0.004* (-1.65)	-0.002 (-0.67)	-0.002 (-0.63)	0.004 (0.19)	0.030 (1.43)	0.021 (1.04)	0.002 (0.12)
Npm	0.349*** (103.08)	0.314*** (106.24)	0.339*** (117.68)	0.347*** (118.06)	-0.173*** (-5.33)	-0.006 (-0.25)	0.052** (2.33)	0.053** (2.36)
Car	0.018*** (5.32)	0.014*** (3.71)	0.003 (0.69)	-0.000 (-0.06)	0.220*** (6.92)	0.236*** (7.46)	0.233*** (7.45)	0.243*** (7.69)
Cdr	0.034*** (8.88)	0.031*** (7.43)	0.029*** (6.54)	0.025*** (5.63)	0.489*** (13.36)	0.564*** (15.82)	0.496*** (14.36)	0.462*** (13.53)
pop	0.013*** (7.44)	0.012*** (6.57)	0.011*** (6.01)	0.008*** (3.69)	0.040** (2.38)	0.027* (1.70)	0.008 (0.54)	0.036** (2.28)
Size	0.000 (0.89)	0.007*** (4.88)	0.007*** (4.61)	0.010*** (6.64)	0.000*** (3.36)	0.132*** (11.18)	0.121*** (10.56)	0.117*** (10.33)
Age	0.000 (0.23)	-0.013*** (-3.09)	-0.008* (-1.69)	-0.004 (-0.73)	-0.000 (-0.24)	-0.040 (-1.12)	-0.055 (-1.44)	-0.096** (-2.34)
_cons	-0.024*** (-5.79)	-0.062*** (-4.03)	-0.069*** (-4.20)	-0.099*** (-5.92)	-0.014 (-0.34)	-1.278*** (-9.82)	-1.059*** (-8.35)	-0.968*** (-7.61)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,277	5,276	5,277	5,274	5,277	5,276	5,277	5,274
Adj_R <sup>2</sup>	0.692	0.714	0.734	0.739	0.0817	0.0917	0.0836	0.0779
F	1323	1468	1618	1663	55.40	62.42	56.71	52.70

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B4

**Regression Results of Financial Performance of SOEs Excluding M&A Debt Repayment and Development Capacity in the Maturity Period**

	Cr				TRGR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>2</sub>	0.475*** (8.35)	0.396*** (8.55)	0.405*** (8.98)	0.350*** (7.60)	-0.280*** (-19.83)	-0.041*** (-4.99)	-0.024*** (-3.08)	-0.015** (-2.26)
Em	-1.134*** (-20.92)	-0.955*** (-21.93)	-0.115*** (-9.92)	-0.102*** (-9.92)	-0.010 (-0.73)	0.017** (2.17)	-0.004* (-1.90)	-0.001 (-0.50)
Wcr	0.359*** (3.37)	0.147* (1.70)	0.397*** (4.79)	0.322*** (3.88)	0.039 (1.46)	0.025 (1.60)	0.043*** (3.04)	0.019 (1.57)
Npm	2.384*** (15.03)	1.246*** (12.31)	1.277*** (14.28)	1.485*** (16.38)	0.679*** (17.23)	0.397*** (22.01)	0.377*** (24.73)	0.363*** (26.89)
Car	4.731*** (30.45)	3.705*** (28.82)	3.452*** (27.38)	3.442*** (26.80)	-0.122*** (-3.16)	0.080*** (3.49)	0.091*** (4.24)	0.094*** (4.90)
Cdr	-2.564*** (-14.32)	-2.745*** (-18.92)	-2.436*** (-17.49)	-2.507*** (-18.03)	-0.003 (-0.06)	-0.126*** (-4.86)	-0.060** (-2.52)	-0.096*** (-4.62)
pop	-0.017 (-0.21)	0.011 (0.17)	0.005 (0.08)	-0.018 (-0.28)	0.074*** (3.62)	0.053*** (4.63)	0.033*** (3.34)	0.032*** (3.41)
Size	-0.000*** (-8.34)	-1.179*** (-24.46)	-1.107*** (-24.01)	-1.066*** (-23.10)	0.000 (0.61)	0.062*** (7.18)	0.072*** (9.22)	0.055*** (7.98)
Age	-0.007 (-1.32)	-0.163 (-1.11)	-0.062 (-0.40)	0.152 (0.91)	-0.004*** (-3.58)	-0.161*** (-6.16)	-0.130*** (-4.95)	-0.118*** (-4.77)
_cons	2.147*** (10.90)	14.036*** (26.50)	12.684*** (24.78)	12.145*** (23.45)	0.401*** (8.19)	-0.229** (-2.43)	-0.429*** (-4.92)	-0.270*** (-3.50)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,277	5,276	5,277	5,274	5,277	5,276	5,277	5,274
Adj_R <sup>2</sup>	0.274	0.313	0.252	0.243	0.113	0.117	0.136	0.154
F	224.0	270.7	200.6	191.4	78.00	80.93	95.79	109.8

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B5

**Regression Results of M&A Profitability and Operating Capacity of SOEs During the Recession Period**

	Roa				TATR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>3</sub>	-0.009*** (-6.14)	-0.007*** (-4.07)	-0.005*** (-2.64)	-0.006*** (-3.10)	-0.116*** (-8.26)	-0.081*** (-5.87)	-0.055*** (-4.08)	-0.054*** (-3.96)
Em	-0.007*** (-5.73)	-0.014*** (-11.21)	-0.001 (-1.63)	-0.000 (-0.29)	0.055*** (5.01)	0.048*** (4.50)	0.018*** (6.18)	0.002 (0.91)
Wcr	-0.002 (-1.07)	-0.005* (-1.93)	-0.002 (-0.70)	-0.002 (-0.75)	-0.003 (-0.14)	0.024 (1.14)	0.020 (0.99)	0.000 (0.00)
Npm	0.350*** (102.61)	0.314*** (106.17)	0.340*** (118.16)	0.349*** (119.04)	-0.176*** (-5.43)	-0.005 (-0.20)	0.058*** (2.63)	0.063*** (2.83)
Car	0.018*** (5.48)	0.014*** (3.80)	0.003 (0.67)	-0.000 (-0.01)	0.236*** (7.39)	0.248*** (7.81)	0.239*** (7.62)	0.249*** (7.86)
Cdr	0.038*** (10.01)	0.034*** (8.13)	0.032*** (7.11)	0.027*** (6.06)	0.528*** (14.52)	0.583*** (16.44)	0.511*** (14.83)	0.472*** (13.84)
pop	0.013*** (7.43)	0.012*** (6.67)	0.011*** (6.01)	0.008*** (3.92)	0.038** (2.25)	0.026* (1.68)	0.007 (0.50)	0.037** (2.40)
Size	0.000 (0.77)	0.006*** (4.30)	0.006*** (4.11)	0.009*** (5.96)	0.000*** (3.16)	0.124*** (10.46)	0.114*** (9.95)	0.110*** (9.65)
Age	0.000 (0.83)	-0.012*** (-2.71)	-0.007 (-1.44)	-0.003 (-0.46)	0.001 (0.54)	-0.021 (-0.59)	-0.041 (-1.06)	-0.082** (-1.98)
_cons	-0.024*** (-5.77)	-0.055*** (-3.56)	-0.062*** (-3.77)	-0.090*** (-3.35)	-0.015 (-0.36)	-1.212*** (-9.30)	-1.005*** (-7.91)	-0.906*** (-7.11)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,277	5,276	5,277	5,274	5,277	5,276	5,277	5,274
Adj_R <sup>2</sup>	0.690	0.712	0.732	0.737	0.0808	0.0914	0.0821	0.0767
F	1307	1454	1603	1647	54.77	62.20	55.68	51.93

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B6

**Regression Results of the Financial Performance of SOEs Excluding M&A Debt Repayment and Development Capacity During the Recession Period**

	Cr				TRGR			
	Year 0	Year 1	Year2	Year 3	Year 0	Year 1	Year2	Year 3
LC <sub>3</sub>	0.524*** (7.61)	0.261*** (4.65)	0.175*** (3.18)	0.166*** (2.97)	-0.132*** (-7.49)	-0.033*** (-3.27)	-0.015 (-1.59)	-0.002 (-0.28)
Em	-1.161*** (-21.43)	-0.971*** (-22.21)	-0.118*** (-10.16)	-0.104*** (-10.12)	0.005 (0.35)	0.019** (2.38)	-0.004* (-1.78)	-0.001 (-0.44)
Wcr	0.356*** (3.33)	0.134 (1.54)	0.401*** (4.82)	0.319*** (3.82)	0.046* (1.68)	0.026* (1.67)	0.043*** (3.01)	0.020 (1.59)
Npm	2.590*** (16.29)	1.340*** (13.18)	1.360*** (15.16)	1.564*** (17.27)	0.595*** (14.61)	0.387*** (21.41)	0.372*** (24.45)	0.360*** (26.78)
Car	4.501*** (28.76)	3.586*** (27.60)	3.360*** (26.35)	3.368*** (26.00)	-0.037 (-0.92)	0.094*** (4.07)	0.098*** (4.52)	0.096*** (4.98)
Cdr	-2.408*** (-13.52)	-2.615*** (-18.02)	-2.328*** (-16.66)	-2.430*** (-17.43)	-0.100** (-2.19)	-0.139*** (-5.41)	-0.066*** (-2.79)	-0.099*** (-4.79)
pop	0.054 (0.66)	0.049 (0.76)	0.015 (0.26)	0.009 (0.15)	0.045** (2.14)	0.049*** (4.26)	0.032*** (3.26)	0.031*** (3.30)
Size	-0.000*** (-7.96)	-1.169*** (-24.05)	-1.106*** (-23.72)	-1.066*** (-22.88)	0.000 (0.10)	0.060*** (6.97)	0.072*** (9.12)	0.055*** (8.00)
Age	-0.010* (-1.90)	-0.231 (-1.56)	-0.108 (-0.69)	0.101 (0.60)	-0.004*** (-2.98)	-0.153*** (-5.81)	-0.126*** (-4.78)	-0.117*** (-4.71)
_cons	2.171*** (11.01)	14.023*** (26.32)	12.766*** (24.75)	12.235*** (23.49)	0.391*** (7.75)	-0.225** (-2.37)	-0.431*** (-4.94)	-0.277*** (-3.59)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,277	5,276	5,277	5,274	5,277	5,276	5,277	5,274
Adj_R <sup>2</sup>	0.272	0.307	0.242	0.236	0.0568	0.115	0.135	0.153
F	222.2	262.4	190.3	184.3	38.50	79.14	94.90	109.1

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B7

The Regression Results of M&A on Profitability and Operating Ability of the Explanatory Variable are Replaced by the Growth Period

	Roe				Ir			
	Year 0	Year 1	Year 2	Year 3	Year 0	Year 1	Year 2	Year 3
LC <sub>1</sub>	0.001 (0.53)	0.000 (0.20)	-0.001 (-0.47)	-0.003 (-1.28)	0.005* (1.91)	0.008*** (3.17)	0.009*** (3.71)	0.009*** (3.82)
Em	0.015*** (8.36)	0.018*** (8.33)	-0.002** (-2.29)	-0.000 (-0.49)	0.016*** (5.48)	0.013*** (4.60)	-0.001 (-1.10)	-0.001 (-0.96)
Wcr	-0.001 (-0.30)	-0.005 (-1.56)	-0.008* (-1.69)	-0.001 (-0.22)	-0.012** (-2.44)	-0.013*** (-2.72)	-0.016*** (-3.44)	-0.012** (-2.47)
Npm	0.475*** (94.95)	0.481*** (98.75)	0.625*** (101.89)	0.657*** (99.31)	-0.057*** (-6.93)	-0.028*** (-4.13)	-0.020*** (-3.31)	-0.024*** (-4.08)
Car	0.049*** (12.12)	0.047*** (9.83)	0.045*** (6.70)	0.031*** (4.05)	0.377*** (57.54)	0.389*** (58.88)	0.405*** (60.94)	0.413*** (61.48)
Cdr	0.045*** (9.39)	0.036*** (6.26)	0.050*** (6.38)	0.038*** (4.34)	-0.066*** (-8.45)	-0.070*** (-9.00)	-0.078*** (-10.06)	-0.086*** (-11.11)
pop	0.013*** (7.12)	0.009*** (4.80)	0.007*** (2.69)	0.002 (0.82)	0.010*** (3.31)	0.009*** (3.24)	0.007*** (2.84)	0.005* (1.89)
Size	0.020*** (13.94)	0.020*** (11.74)	0.027*** (11.84)	0.025*** (9.93)	0.034*** (14.67)	0.031*** (13.25)	0.030*** (13.31)	0.030*** (13.14)
Age	0.002 (0.48)	-0.019*** (-3.09)	-0.011 (-1.19)	-0.008 (-0.75)	0.081*** (10.55)	0.085*** (10.21)	0.085*** (9.46)	0.087*** (8.97)
_cons	-0.239*** (-14.82)	-0.205*** (-10.63)	-0.303*** (-11.26)	-0.272*** (-9.02)	-0.447*** (-16.99)	-0.428*** (-16.19)	-0.423*** (-15.95)	-0.420*** (-15.67)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.545	0.564	0.572	0.561	0.322	0.330	0.337	0.341
F	1097	1184	1223	1169	437.5	452.0	468.0	474.5

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B8

The Regression Results of M&A on the Debt Repayment and Development Ability of the Explanatory Variable Substitution in the Growth Period

	Dr				OIGR			
	Year 0	Year 1	Year 2	Year 3	Year 0	Year 1	Year 2	Year 3
LC <sub>1</sub>	0.033*** (10.64)	0.033*** (10.55)	0.041*** (11.54)	0.041*** (11.43)	0.122*** (5.34)	0.067*** (8.66)	0.033*** (4.69)	0.020** (2.33)
Em	0.182*** (47.50)	0.182*** (47.28)	0.022*** (17.72)	0.019*** (17.41)	0.092*** (3.25)	0.031*** (3.27)	-0.004 (-1.52)	-0.003 (-1.21)
Wcr	-0.039*** (-6.17)	-0.037*** (-5.93)	-0.066*** (-9.35)	-0.060*** (-8.45)	-0.053 (-1.15)	0.045*** (2.86)	0.009 (0.69)	0.027* (1.65)
Npm	-0.357*** (-33.31)	-0.270*** (-30.70)	-0.305*** (-33.75)	-0.302*** (-34.01)	0.721*** (9.09)	0.464*** (21.27)	0.377*** (21.40)	0.426*** (20.46)
Car	0.108*** (12.61)	0.120*** (13.77)	0.147*** (14.83)	0.154*** (15.21)	0.261*** (4.11)	0.058*** (2.69)	0.070*** (3.64)	0.061** (2.57)
Cdr	-0.111*** (-10.72)	-0.105*** (-10.21)	-0.145*** (-12.55)	-0.144*** (-12.41)	0.085 (1.11)	-0.024 (-0.96)	-0.006 (-0.26)	-0.035 (-1.30)
pop	-0.021*** (-5.68)	-0.020*** (-5.64)	-0.030*** (-7.70)	-0.029*** (-7.76)	0.046 (1.64)	0.034*** (3.89)	0.017** (2.34)	0.016* (1.80)
Size	0.131*** (43.14)	0.129*** (42.28)	0.138*** (40.55)	0.137*** (40.16)	0.110*** (4.86)	0.004 (0.59)	0.028*** (4.27)	0.030*** (3.76)
Age	0.110*** (10.93)	0.106*** (9.63)	0.120*** (8.94)	0.125*** (8.59)	0.245*** (3.29)	-0.142*** (-5.20)	-0.134*** (-5.13)	-0.057* (-1.68)
_cons	-0.961*** (-27.88)	-0.956*** (-27.52)	-0.965*** (-24.35)	-0.976*** (-24.18)	-1.377*** (-5.39)	0.204** (2.36)	-0.026 (-0.34)	-0.129 (-1.36)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.512	0.494	0.343	0.329	0.0182	0.0683	0.0632	0.0536
F	959.1	892.3	479.7	450.0	20.17	70.09	64.75	54.91

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B9

**The Regression Results of M&A on Profitability and Operating Ability of the Explanatory Variable Substitution in the Maturity Period**

	Roe				Ir			
	Year 0	Year 1	Year 2	Year 3	Year 0	Year 1	Year 2	Year 3
LC <sub>2</sub>	0.012*** (7.83)	0.010*** (5.28)	0.007*** (2.84)	0.011*** (3.71)	-0.008*** (-3.24)	-0.012*** (-4.62)	-0.013*** (-5.27)	-0.015*** (-5.79)
Em	0.016*** (8.76)	0.018*** (8.61)	-0.002** (-2.23)	-0.000 (-0.42)	0.016*** (5.40)	0.013*** (4.54)	-0.001 (-1.18)	-0.001 (-1.05)
Wcr	-0.000 (-0.09)	-0.005 (-1.41)	-0.008* (-1.69)	-0.001 (-0.23)	-0.012** (-2.44)	-0.013*** (-2.72)	-0.016*** (-3.40)	-0.011** (-2.41)
Npm	0.472*** (94.53)	0.479*** (98.37)	0.624*** (101.55)	0.656*** (99.12)	-0.055*** (-6.74)	-0.026*** (-3.91)	-0.019*** (-3.09)	-0.023*** (-3.88)
Car	0.051*** (12.82)	0.049*** (10.19)	0.046*** (6.89)	0.032*** (4.30)	0.375*** (57.03)	0.387*** (58.40)	0.402*** (60.44)	0.410*** (61.03)
Cdr	0.041*** (8.43)	0.032*** (5.66)	0.048*** (6.15)	0.036*** (4.11)	-0.065*** (-8.22)	-0.068*** (-8.75)	-0.076*** (-9.85)	-0.084*** (-10.87)
pop	0.012*** (6.88)	0.009*** (4.55)	0.007*** (2.64)	0.002 (0.75)	0.010*** (3.43)	0.009*** (3.42)	0.008*** (2.94)	0.005** (1.99)
Size	0.020*** (13.92)	0.020*** (11.76)	0.027*** (11.86)	0.025*** (9.89)	0.034*** (14.86)	0.031*** (13.57)	0.031*** (13.70)	0.031*** (13.56)
Age	0.002 (0.42)	-0.019*** (-3.13)	-0.011 (-1.16)	-0.007 (-0.64)	0.080*** (10.44)	0.083*** (10.00)	0.083*** (9.20)	0.084*** (8.69)
_cons	-0.238*** (-14.84)	-0.205*** (-10.67)	-0.304*** (-11.33)	-0.275*** (-9.14)	-0.445*** (-16.94)	-0.425*** (-16.09)	-0.419*** (-15.78)	-0.415*** (-15.48)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.549	0.566	0.573	0.562	0.323	0.331	0.339	0.342
F	1112	1191	1225	1172	438.6	453.9	470.3	477.7

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B10

**The Regression Results of M&A on the Debt Repayment and Development Ability of the Explanatory Variable Substitution in the Maturity Period**

	Dr				OIGR			
	Year 0	Year 1	Year 2	Year 3	Year 0	Year 1	Year 2	Year 3
LC <sub>2</sub>	-0.026*** (-7.90)	-0.031*** (-9.32)	-0.042*** (-10.90)	-0.043*** (-11.04)	-0.099*** (-4.03)	-0.086*** (-10.39)	-0.047*** (-6.28)	-0.033*** (-3.58)
Em	0.182*** (47.36)	0.183*** (47.30)	0.022*** (17.59)	0.019*** (17.28)	0.092*** (3.25)	0.031*** (3.22)	-0.004 (-1.61)	-0.003 (-1.27)
Wcr	-0.037*** (-5.90)	-0.036*** (-5.75)	-0.065*** (-9.20)	-0.058*** (-8.22)	-0.047 (-1.02)	0.046*** (2.95)	0.010 (0.75)	0.028* (1.69)
Npm	-0.354*** (-32.88)	-0.267*** (-30.29)	-0.304*** (-33.49)	-0.302*** (-33.98)	0.732*** (9.20)	0.474*** (21.71)	0.381*** (21.62)	0.429*** (20.59)
Car	0.101*** (11.74)	0.112*** (12.84)	0.138*** (13.82)	0.144*** (14.22)	0.236*** (3.69)	0.038* (1.78)	0.060*** (3.12)	0.055** (2.30)
Cdr	-0.111*** (-10.68)	-0.103*** (-10.04)	-0.143*** (-12.38)	-0.141*** (-12.19)	0.085 (1.10)	-0.014 (-0.55)	-0.001 (-0.03)	-0.031 (-1.15)
pop	-0.020*** (-5.30)	-0.019*** (-5.31)	-0.029*** (-7.50)	-0.029*** (-7.64)	0.051* (1.82)	0.037*** (4.28)	0.018** (2.45)	0.016* (1.86)
Size	0.134*** (43.81)	0.131*** (43.19)	0.141*** (41.70)	0.141*** (41.42)	0.118*** (5.24)	0.010 (1.32)	0.031*** (4.70)	0.032*** (3.99)
Age	0.101*** (10.12)	0.097*** (8.81)	0.108*** (8.04)	0.112*** (7.70)	0.215*** (2.90)	-0.161*** (-5.91)	-0.144*** (-5.53)	-0.064* (-1.88)
_cons	-0.946*** (-27.37)	-0.942*** (-27.09)	-0.946*** (-23.85)	-0.958*** (-23.71)	-1.320*** (-5.17)	0.234*** (2.72)	-0.009 (-0.11)	-0.117 (-1.24)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.509	0.492	0.342	0.328	0.0168	0.0720	0.0652	0.0545
F	947.7	887.0	477.3	448.6	18.78	73.99	66.82	55.78

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B11

**The Regression Results of M&A on Profitability and Operating Ability of the Explanatory Variable Substitution in the Recession Period**

	Roe				Ir			
	Year 0	Year 1	Year 2	Year 3	Year 0	Year 1	Year 2	Year 3
LC <sub>3</sub>	-0.019*** (-10.29)	-0.015*** (-6.72)	-0.009*** (-2.87)	-0.010*** (-2.88)	0.004 (1.45)	0.005 (1.50)	0.005 (1.59)	0.007** (2.10)
Em	0.015*** (8.53)	0.018*** (8.32)	-0.002** (-2.26)	-0.000 (-0.47)	0.016*** (5.54)	0.014*** (4.78)	-0.001 (-1.07)	-0.001 (-0.94)
Wcr	-0.002 (-0.54)	-0.006* (-1.70)	-0.008* (-1.75)	-0.002 (-0.34)	-0.011** (-2.32)	-0.012** (-2.56)	-0.016*** (-3.35)	-0.011** (-2.30)
Npm	0.472*** (94.95)	0.479*** (98.69)	0.625*** (102.15)	0.658*** (99.93)	-0.056*** (-6.90)	-0.028*** (-4.17)	-0.021*** (-3.55)	-0.026*** (-4.46)
Car	0.053*** (13.33)	0.051*** (10.56)	0.047*** (6.99)	0.033*** (4.38)	0.376*** (56.95)	0.388*** (58.25)	0.404*** (60.29)	0.410*** (60.78)
Cdr	0.044*** (9.17)	0.035*** (6.12)	0.050*** (6.40)	0.038*** (4.37)	-0.068*** (-8.61)	-0.072*** (-9.26)	-0.080*** (-10.34)	-0.087*** (-11.32)
pop	0.012*** (6.62)	0.009*** (4.52)	0.007*** (2.63)	0.002 (0.81)	0.010*** (3.39)	0.009*** (3.27)	0.007*** (2.88)	0.005* (1.86)
Size	0.018*** (13.04)	0.019*** (11.03)	0.026*** (11.45)	0.024*** (9.43)	0.035*** (14.87)	0.032*** (13.60)	0.032*** (13.79)	0.031*** (13.73)
Age	0.007 (1.46)	-0.015** (-2.41)	-0.008 (-0.85)	-0.004 (-0.35)	0.078*** (10.23)	0.082*** (9.78)	0.081*** (8.96)	0.082*** (8.43)
_cons	-0.228*** (-14.22)	-0.196*** (-10.19)	-0.298*** (-11.08)	-0.267*** (-8.84)	-0.447*** (-16.97)	-0.428*** (-16.15)	-0.424*** (-15.92)	-0.422*** (-15.70)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.551	0.566	0.573	0.561	0.322	0.329	0.337	0.340
F	1123	1195	1225	1170	437.2	450.7	466.1	472.8

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

Table B12

**The Regression Results of M&A on the Debt Repayment and Development Ability of the Explanatory Variable Substitution in the Recession Period**

	Dr				OIGR			
	Year 0	Year 1	Year 2	Year 3	Year 0	Year 1	Year 2	Year 3
LC <sub>3</sub>	-0.017*** (-4.28)	-0.010** (-2.39)	-0.008* (-1.72)	-0.007 (-1.41)	-0.063** (-2.09)	0.014 (1.33)	0.014 (1.55)	0.015 (1.34)
Em	0.183*** (47.67)	0.184*** (47.56)	0.022*** (17.76)	0.019*** (17.44)	0.098*** (3.45)	0.036*** (3.72)	-0.004 (-1.47)	-0.003 (-1.20)
Wcr	-0.037*** (-5.80)	-0.035*** (-5.52)	-0.065*** (-9.14)	-0.058*** (-8.11)	-0.045 (-0.97)	0.051*** (3.23)	0.011 (0.79)	0.029* (1.75)
Npm	-0.362*** (-33.60)	-0.273*** (-30.92)	-0.313*** (-34.39)	-0.311*** (-34.96)	0.701*** (8.82)	0.459*** (20.95)	0.371*** (21.12)	0.422*** (20.32)
Car	0.112*** (12.88)	0.120*** (13.64)	0.147*** (14.57)	0.152*** (14.85)	0.275*** (4.28)	0.051** (2.32)	0.065*** (3.35)	0.056** (2.35)
Cdr	-0.122*** (-11.76)	-0.114*** (-11.12)	-0.155*** (-13.39)	-0.152*** (-13.06)	0.044 (0.58)	-0.042* (-1.65)	-0.013 (-0.60)	-0.038 (-1.41)
pop	-0.022*** (-5.77)	-0.020*** (-5.82)	-0.030*** (-7.66)	-0.030*** (-7.89)	0.044 (1.57)	0.033*** (3.83)	0.018** (2.38)	0.016* (1.78)
Size	0.132*** (42.97)	0.130*** (42.40)	0.141*** (40.97)	0.141*** (40.71)	0.112*** (4.95)	0.010 (1.36)	0.032*** (4.85)	0.033*** (4.14)
Age	0.105*** (10.44)	0.099*** (8.96)	0.110*** (8.11)	0.114*** (7.78)	0.229*** (3.07)	-0.165*** (-5.99)	-0.149*** (-5.65)	-0.068** (-1.99)
_cons	-0.936*** (-26.95)	-0.938*** (-26.77)	-0.949*** (-23.72)	-0.964*** (-23.65)	-1.282*** (-5.01)	0.223** (2.57)	-0.024 (-0.32)	-0.134 (-1.41)
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,212	8,211	8,212	8,208	8,212	8,211	8,212	8,208
Adj_R <sup>2</sup>	0.506	0.487	0.333	0.318	0.0153	0.0599	0.0609	0.0532
F	937.7	869.4	458.0	429.0	17.43	61.40	62.43	54.49

Note: \*\*\*, \*\*, and \* indicate significant at the levels of 1%, 5%, and 10%, respectively; t-statistics are reported in parentheses.

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The article has been reviewed.

Received in February 2025; accepted in February 2026.



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