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TROIS ESSAIS SUR L'INVESTISSEMENT ET LA GOUVERNANCE D'ENTREPRISE AU VIETNAM

JURY

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CHAPTER 1
GENERAL INTRODUCTION

This dissertation comprises three empirical essays situated within the Vietnamese emerging market context, collectively addressing the overarching research question: *How do information embedded in stock prices and corporate governance mechanisms shape managerial decision-making, particularly in fostering learning from market signals within an under-researched institutional setting**?*** While each chapter is methodologically distinct, they converge on examining the interplay between stock price informativeness, corporate governance structures, and firm-level outcomes, with a unifying focus on how managers in emerging markets internalize and act upon external market information. The first essay investigates how stock price informativeness influences the sensitivity of corporate investment to stock prices, probing whether Vietnamese managers leverage market signals to optimize capital allocation—a phenomenon well-documented in developed markets but underexplored in environments with weaker information efficiency. The second essay analyses market reactions to M&A announcements and the likelihood of deal completion, introducing stock price informativeness as a mediating mechanism that bridges investor expectations and managerial execution. The third essay revisits the impact of CEO duality and other governance determinants (e.g., board diversity, CEO educational specialization) on M&A performance, contextualizing how governance frameworks modulate the translation of market signals into strategic decisions.

1.1. Background and Research Motivation

Vietnam has appeared as one of Southeast Asia's most dynamic economy, attracting significant investors from both domestic and international[1]. Since "ĐỔI MỚI"[2], Vietnam has witnessed major economic and legal transformation, which have enhanced its investment

[1] *Vietnam ranks in the top 40 worldwide in terms of the market capitalization and attracts a huge number of international investments. Notably, one-third of Vietnamese total market capitalization belongs to foreign investors. Two exchange-traded funds specializing in Vietnam are listed in the London and New York stock exchanges*

[2] *"ĐỔI MỚI" is the official term given to the economic system in the Socialist Republic of Vietnam (I will use Vietnam for shorten). It is an attempt to renovate a market economy by pursuing the competitiveness and openness to provide the more appropriate conditions to achieve modernization.*

environment and boosted financial market development. The considerably evolving of Vietnam market offer better access to capital by using equity and debt instruments. However, Vietnam seems to be a counterexample to find out new practical and theoretical existing literature because of its characteristics.

Firstly, Vietnam is an emerging country with ongoing financial market development. The establishment of the Ho Chi Minh City Stock Exchange (HoSE) in 2000 and the Hanoi Stock Exchange (HNX) in 2005 marked a milestone for Vietnam's financial sector. In 2005, there are 44 listed firms with a total market capitalization of $300 million. In the period from 2005 to 2007, the market boomed. By virtue of the country's favourable economic conditions, the market capitalization rises rapidly to nearly $20 billion at the end of 2007 (Figure 1.1). Vietnam's market capitalization has increased significantly over the years from 2007 to 2019 before slightly decline because of Covid-19 effect, reflecting growing investor interest and corporate expansion. From a limited market capitalization of about $33 billion in 2009, the total market capitalization reaches a peak roughly $277 billion at the end of 2021, which takes account for more than 68% of the national GDP. With the modern trading system and applications, the liquidity of Vietnamese stock market is also enhanced significantly. About 90% of transactions are conducted by automated order-matching systems. The growth of technologies also contributes to the corporate investment activities in Vietnam. Online trading platforms, mobile banking services and other digital payment solutions enhance the convenience and accessibility of investment capital, reducing costs and improving efficiency.

Unit: thousand USD

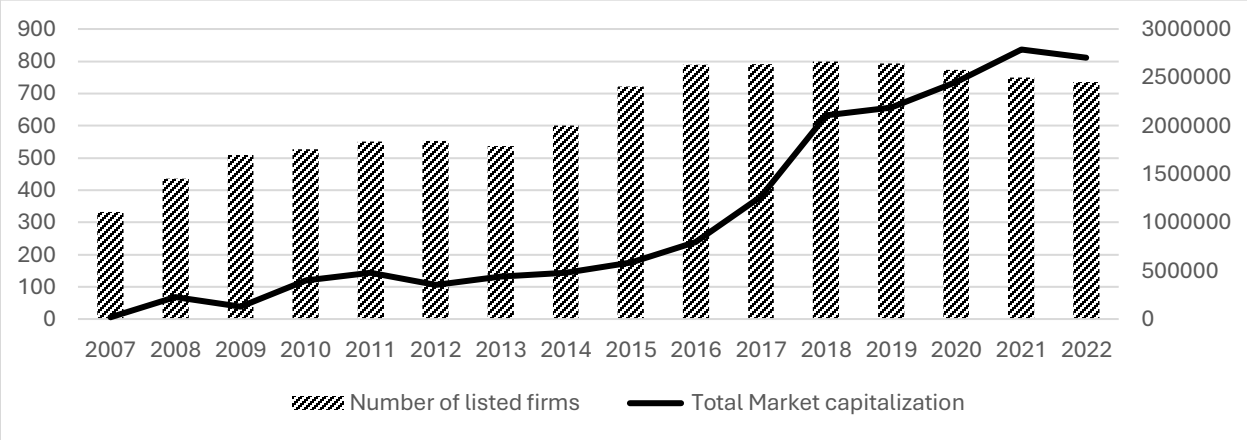

Figure 1.1: The scale of Vietnam stock market and market capitalization from 2007-2022

At the present, Vietnamese stock market is categorized as one of 23 emerging and frontier markets in the Morgan Stanley Capital International (MSCI). Vietnam ranks in the top 40 worldwide in terms of the market capitalization of domestic listed stocks according to the World Bank data. The Vietnamese capitalization is higher than several European markets such as Poland and Austria as well as New Zealand, a developed Pacific market. However, Vietnam is still in the process of improving its financial reporting standards to align with international best practices, such as the International Financial Reporting Standards (IFRS). Many companies, especially smaller firms, may not meet the international standards of financial reporting, resulting in incomplete or inaccurate information being provided to the market. Moreover, the limited coverage by professional analysts leads to information scarcity and market participants have fewer sources of analysis and research to base their investment decisions on.

Secondly, the market with information asymmetry. Despite the positive changes in Vietnam's investment environment, several challenges continue to affect corporate investment decision, including limited disclosure and transparency. It refers to the unequal accessibility of investors and other market participants to the important financial information, leading to inefficiencies or unfair competitiveness. When information is not equally accessible, securities might be mispriced, and the market are unable to estimate the right value of firm's assets. For emerging market like Vietnam, the primary causes of information asymmetry are the inconsistency in corporate disclosure practices, e.g. information about operational challenges, debt levels or market conditions. Even though there are several requirements for listed companies to disclose financial and operational information, the quality and quantity of these disclosures are limited. It possibly leads to unfairness between investors by providing an environment for market manipulation [3] and insider trading (Tran and Luu, 2024). Moreover, corporate governance standards of Vietnamese firms are still under-going and unclarity, leading to the potential misinterpretations (Pham et al., 2015), reducing investor confidence in the market and creating a vicious circle where fewer investors are willing to participate and making it harder for firms to

[3] *In Vietnam, there have been instances where insiders with privileged access to undisclosed information have manipulated stock prices for personal gain. Trinh Van Quyet, former Chairman of FLC, was sentenced for 26 years in prison for his stock price manipulation behaviour (illegal gaining 176.2 million USD).*

raise capital. In some cases, the absence of quality Boards and auditors could intensify these problems in comparison with other companies who have strict reporting standards.

Thirdly, Vietnam is lack of a standardized legal and governance system. Vietnam's legal system is still evolving with the introduction and update of various vital law [4]. However, the lack of clarity and uniform enforcement make it difficult to navigate the regulatory environment. For example, different provinces may interpret and apply the same law in divergent. Moreover, too frequent changes in law and other regulations could make confusion to investors and managers when they participate in investment activities. Vietnam's stock market is still in the early stages of development compared to more developed markets in the region such as Singapore or Hong Kong. The regulatory framework governing the stock market is fragmented and there is a lack of consistency, transparency and stability. Moreover, weak corporate governance practices along with the absence of comprehensive legal protection such as anti-takeover provisions can lead to poor decision making by managers when they provide important decisions such as Merger and Acquisition (M&A) or long-term investment. Vietnam's stock market also suffers from weak corporate governance standards. Many firms, the dominant of state-owned enterprises (SOEs) and family-owned enterprises (POEs) in the early stage of stock market create a unique status where the concentration of ownership in the hands of few controlling shareholders or Government entities. This concentration can lead to decisions that do not satisfy the interests of majority shareholders, reducing the attractiveness of the market to foreign investors.

Fourthly, the centralization of Government control. Although emerging economies exhibit structural economic similarities, the role of state involvement in their equity markets varies markedly, reflecting divergent governance frameworks and regulatory philosophies. In India, although the government retains influence over key sectors, its stock market is largely market-driven. The Securities and Exchange Board of India (SEBI) ensures transparency and enforces strict regulations to protect investors, making India's market more resilient. However, occasional policy-driven disruptions such as demonetization in 2016 and taxation on capital markets, indicate that regulatory influence remains significant. In contrast, Indonesia follows a hybrid model, where

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[4] Different version of laws related to stock market and investment activities in Vietnam includes: The Law on investment 2005,2014 and 2020; The Law on Enterprises 2005,2013 and 2020; The Law on Security 2006,2019; Law on Competition 2004, 2019

its stock market is largely market-oriented, but the government actively regulates foreign investment in certain strategic industries. Despite its relatively open financial system, Indonesia occasionally enforces capital controls during periods of financial instability. While both Vietnam and China are socialist republics, their approaches to stock market regulation differ. China's stock market remains heavily state-dominated, with most listed companies being State-owned enterprises (SOEs) (Wang et al., 2019). The government frequently redirects capital raised by listed firms to subsidize underperforming SOEs, reinforcing a policy-oriented market where regulations, such as crackdowns on big tech firms like Alibaba and Tencent in 2022, directly sway market volatility. Vietnam's stock market is regulated by the Government through the State Securities Commission (SSC) under the Ministry of Finance (MOF) and all regulatory frameworks are designed to sufficiently manage the stability and efficiency of the stock market. However, the centralized control over stock market in Vietnam presents several challenges such as Bureaucratic inefficiencies (Dang et al., 2020), lack of transparency or limited market liberalization (Nguyen et al., 2020). As the Communist country, one of the most noteworthy aspects of Government control in Vietnam is the dominance of SOEs in key industries such as banking, energy, telecommunications and infrastructure. Despite the rocket growth of private and foreign firms, SOEs continue to account for a large percentage of the Vietnam's economic output, employment and capital mobilization[5]. This dominance allows the Government to maintain strategic control over important industry and long-term direction of the economy. With the close relationship with the Government, the SOEs are easier to access financing, favourable regulation and it created an unfair playing field in the stock market. Since "ĐỔI MỚI", Vietnamese government try to support POEs and foreign-invested companies by providing same level of support and even competitive environment for any firms[6]. An effort to equitize and privatize SOEs in recent decades[7] helps them to list on the stock market and attract more outside investors. After over 30 years, the number of SOEs has decreased dramatically but the equitization process also faced various challenges

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[5] Pham and Mai (2020) report that only 0.5 percent of Vietnamese firms are SOEs, but they account for 29% of total assets and generate 15% of net revenue.

[6] The law of Enterprise 2005 and the Law of Investment 2006 claimed that there is no difference between SOEs, POEs and another type of firms in Vietnamese market. All firm have the same obligation and right when investing in Vietnam.

[7] The first regulator that mentioned about equitize and privatized of SOEs in Vietnam is Circulars 36-TC/CN in the year of 1993

because of the difficulty in enterprise valuating, inadequate regulation for information disclosure (Dang et al., 2021). The dual role of the Government as regulation creator and market participant also might lead to possible conflicts of interest. Hence, the government control does not have a significant impact on the Vietnamese stock market as China.

Most existing studies focus on developed markets, such as the United States and European countries, where stock markets are more mature, efficient, and data-rich for empirical analysis[8]. However, emerging markets represent a significant portion of the global economy, with distinct economic conditions, regulatory environments, and market structures that can yield different empirical results. Expanding research on stock market governance in emerging economies can provide new perspectives on well-established financial theories and help uncover unique challenges and opportunities in developing financial markets.

The sample in these studies includes all Vietnamese firms listed on HNX, HoSE stock market. The accounting and financial data from 2006 to 2022 are collected from Worldscope via Datastream. The list of announcements of acquisitions of Vietnam firms during the period from January 2008 to October 2022 was obtained from the Thomson Reuters SDC database. The current status and transaction value of deals (after filtered by several requirements) are double-checked by searching information on website https://www.marketscreener.com. The information about corporate governance from 2008 to 2022 is obtained from Vietstock Finance database (https://en.vietstock.vn). These three databases are merged by using Datastream Code.

1.2. Outline of the dissertation

This dissertation contains three studies. The first study explores the effect of information within market prices on firms' investment decisions and the sensitivity of investment to stock prices. The second study investigates the relationship between market signals and the completion of M&A deals. The third study focuses on the role of corporate governance mechanisms in M&A performance.

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[8] *When I search with keywords: "corporate governance", "M&A" and "Vietnam" on website http://www.sciencedirect.com for period from 2000-2025, there are 207 responses. However, when I exclude the word "Vietnam" out of search, the number of related papers climb up to 4105*

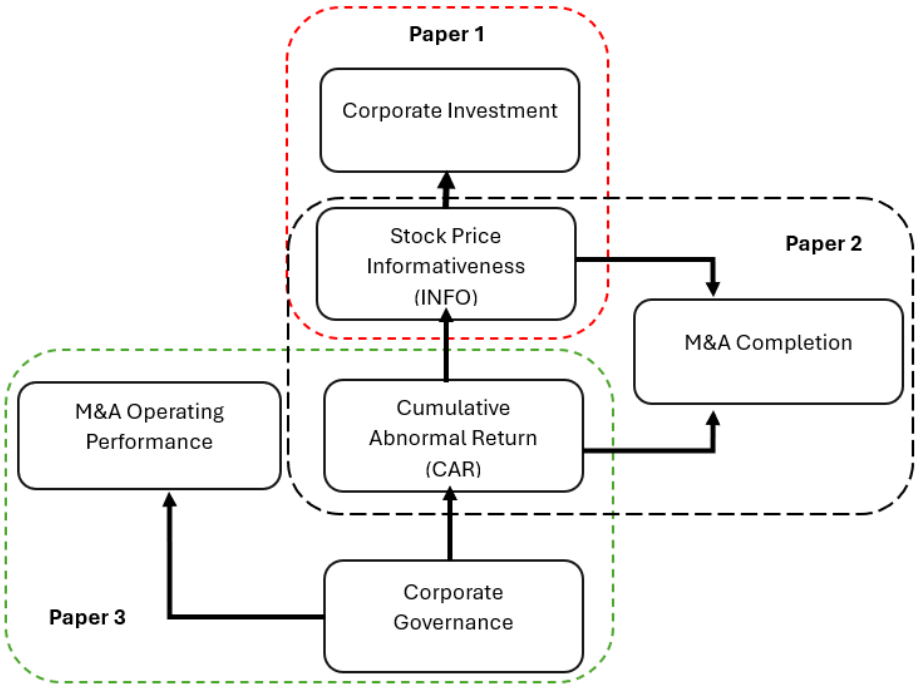

Figure 1.2: ***The dissertation conceptual framework***

The first paper is titled "**The influence of stock price informativeness on corporate investment decisions: evidence from Vietnam**". This study explores how the information contained in stock prices influences the investment behaviour of Vietnamese public firms, specifically addressing whether managers learn from market signals. Specifically, I aim to answer two sub-research questions in first paper: (i) *How do Vietnam's regulatory gaps and high information asymmetry shape the role of stock price informativeness in corporate investment decisions? (ii) To what extent does stock price non-synchronicity moderate investment sensitivity in Vietnam's emerging market*?

The evidence is based on the straightforward idea of Hayek (1945) when considering the role of prices as a useful source of information for important decisions such as long-term investment, more accurate and readily available information leads to better-informed investment decisions by managers (Citroen, 2011). Previous research generally agrees that optimal decisions should consider both internal and external information sources and if investments are more sensitive to price if there is a richness in information within stock prices, then this signifies that the managers should apply this information for their investment decision (Bond et al., 2012; Goldstein, 2022). The rise of financial technologies, coupled with the increasing sophistication of

market participants, has enriched the availability of information. This advancing raises questions about how market information affects managerial decision-making. In this study, two alternative methods are used to measure firms' investment, including the growth (change model) and the amount (level model) of capital expenditure of firms listed in Vietnam market from 2006 to 2022. The primary proxy for stock price informativeness is the degree of price non-synchronicity proposed by Roll (1988). This index is derived from the R-squared of the market model applied to daily returns. By running multiple factor regression models, R-squared values provide an estimation of the variation in the returns on a stock that cannot be explained by market and industry returns. Thus, higher stock price informativeness indicates that stock prices contain relatively more specific information about firms.

For the first sub-question, the result shows that stock market performance have a significantly positive impact on firms' investment, which is similar result with several previous study of Chen et al. (2007), Wang et al. (2009) and Silva (2021). Specifically, in the change model, the results show that the increase in the amount of information in stock price is associated with an increase in firm investment. The same results are witnessed in level model. In addition, learning hypothesis in Vietnamese firms is tested by considering the role of stock price informativeness on the sensitivity of investment to stock price. If considering two milestones, the 25^{th} and 75^{th} of stock price informativeness, the sensitivity of investment to stock price increases. More specifically, for change model is from 0.032 to 0.055 and for level model is from 0.0039 to 0.0041. This sensitivity is slightly higher when I consider a sub-sample of the top 300 biggest firms.

I further explore the relationship of financial constraint on the sensitivity of investment to stock price. I use two measurements to proxy financial constraint, including KZ4 index (Kaplan and Zingales, 1997) and WW index (Whited and Wu, 2006). The results indicate that the sensitivity of investment stock price increases from 0.116 to 0.117 if the financial constraint of firm increase from 25^{th} to 75th percentile. By examining some sub-sample such as Private-Owned firms, State-owned firms or different size of firms, this paper shows that: (1) there is a difference in the way of using information to managerial behaviour between private-owned firms and state-owned firms; (2) larger firms are less likely, on average, to exhibit strong sensitivity of investment in stock prices, possibly because changes in their stock prices are less likely to affect their ability to finance investment

The second paper is named ***"The Nexus between Market Signals and Managers' Behaviour: Empirical Evidence from Mergers and Acquisitions in Vietnam"***, focusing on more specific types of investment, Merger and Acquisition (M&A). I continue test the learning hypothesis in Vietnam's context. This study clarifies how the response from the stock market could change managerial decisions, trying to see whether managers change their action on completion of the M&A deals. I aim to answer the concerns about the nexus between the market signals and managers' behaviour on M&A by answering two research questions: *(1) To what extent does market reaction to M&A announcement could affect to the completion of M&A deal in Vietnam. (2) Does stock price informativeness mediate the impact of market reactions on M&A completion in Vietnam, or do regulatory gaps and information asymmetry diminish the credibility of price signals as a learning tool for managers?*

Previous papers from Luo (2015); Adra and Barbopoulos (2023) show that managers are more likely to cancel when market negatively react and to M&A announcement news, suggesting that managers could benefit from adapting outside information to their behaviour. I witness the significant impact of market reaction to M&A announcements on the completion of deals, but in a particular way. Specifically, this result suggests that higher cumulative abnormal returns (CAR) lead to a lower likelihood of deal completion. This might indicate that the market perceives high CAR with scepticism, potentially due to concerns over the acquirer's ability to realize projected synergies.

Since the signal from market plays a limited role in guiding the behaviour of managers on M&A activities, I next investigate the second sub-question about the information consequence of M&A deal, by focusing on how the market reaction to M&A news could influence the level of acquirer' price non-synchronicity and how stock price informativeness plays as the mediation role on the relationship between market reaction and completion of M&A deals. The idea is that market reaction represents the expectations of investors about the future cash flow of acquirer firms. This expectation will be reflected in the stock price and then its co-movement corresponding to industry and market. When the level of the acquirer firms' stock price informativeness in the pre-announcement period is relatively low, leaving a gap for other investors to emphasis on information-based trading. My hypothesis predicts that if the CAR is more positive then the acquirer's stock price informativeness for post-M&A period will be higher. Consistent with this prediction, the market reaction to control deals and the change in amount of information contained

in stock price of acquirers in post M&A period fluctuate in the same direction. I extend my analysis by considering extreme reaction from market (extreme weak or strong), I found out that the coefficient of interaction variable of extreme strong CAR and acquirer's stock price informativeness is significant positive. It suggests that when initial informativeness is higher, the positive impact of substantial abnormal returns on informativeness is amplified. This result against the previous research of Down et al, (2017), Adra and Barbopoulos (2023) who investigate US market. This result suggests that if other things held constant, strong market reactions for acquirers subject to high pre-announcement stock price informativeness leave wide room for further informed trading opportunities based on public information after the announcement. I further explore the learning hypothesis. The idea is that when the amount of private information within stock price is high, then the increasing in positive reaction of market to M&A announcement could enhance the chance to complete the deal. The results show that: (1) those M&A deals which receive little attention (low level of market reaction) but the feedback from market on stock price when news about deal announcement is positive could lead to better chance of successful completion; (2) for deals with less attention from market, larger deal sizes negatively impact the likelihood of completion, especially when pre-announcement informativeness is high and (3) it is lack of evidence to confirm the role of stock price informativeness on the relationship between market reaction and completion status of M&A deals. The overall evidence is inconsistent with my second hypothesis and the reason could come from the distinction of M&A activities in Vietnam. In some case, firms are forced to merge or acquire because of their poor operating performance but the government do not want them collapse. In this case, manager does not pay attention much on the market when doing M&A deals.

I extend my analysis by considering the impact of experience from previous M&A deals. The idea is that the previous M&A deal (success or failure deals) bring valuable lesson for managers, and they can apply this knowledge to improve the chance to complete future deals. The result suggests that acquirers with past failures followed by successes are more likely to complete subsequent deals. Moreover, positive impact of overcoming past failures on deal completion is more pronounced for larger relative deal sizes, emphasizing the value of resilience and learning from past experiences in managing substantial acquisitions. I also re-answer the first sub-question of first paper about the influence of stock price informativeness on the firm's investment. M&A could be understood as a specific type of investment, and I use relative deal size as a proxy for the

level of firm's investment. As I expected, the amount of private within stock price of acquirers does play a significant role in the relationship between market reaction to M&A announcement and deal size and the growth of price informativeness will increasing the sensitivity of firms' investment on stock prices. Finally, I test to which extend the role of family ownership or state owner ship have any impact on the completion of M&A deals. The results claim that being a family enterprise negatively impacts the likelihood of M&A deal completion.

Because the feedback effect from market reaction to managers' behaviour in M&A perspective in Vietnam is still unclear. It suggests that decision making processes and business outcomes of firms might be driven by other internal factors. Cumulative Abnormal Return (CAR) is used as measurement for market reactions to firms' event in chapter 3. However, this index could be used as expected short-term performance of acquirers. To better understand the impact of internal governance mechanisms on the performance of acquired firms, I revisit Pham et al. (2015) with a specific focus on how CEO duality[9] affects M&A performance in chapter 4. The name of this chapter is ***"Reassessing CEO Duality in Vietnam: the Emerging Agency Conflicts and Their Impact on M&A Performance"***. According to agency theory, concentrating power in a single individual, such as the CEO or Chairman, can increase agency costs. This occurs because leaders with concentrated power may prioritize their own interests over those of shareholders, potentially making decisions that benefit themselves rather than the company. However, in cases where firms were mainly State-owned enterprises (SOEs) or Family-owned enterprises (FOEs), the agency conflict described in agency theory was less relevant. In these contexts, CEO duality was not considered a problem; instead, it provided executives with greater authority to act in line with shareholder interests, especially since these interests were closely aligned with the State's objectives. However, significantly changes happened since Vietnam market become more integrated with global overtime: more qualified CEO, more diversity and independence of Boards or better integrated corporate culture. These changes represent a transition from a period when concentrated executive power was seen as a benefit to a period where it is considered a problem. In this new context, agency problems call for governance practices that align with international standards. I wish to study to see which these changes impact the correlations between

[9] *CEO duality is the case CEO being simultaneously Chairman of Board.*

CEO/corporate governance characteristics and M&A performance. Three sub-questions for this research are: *(1) How have regulatory reform since 2015 affect corporate governance practices in Vietnam? (2) Does CEO duality in Vietnamese firms mitigate agency conflict, leading to value creation by M&A deals or exacerbate agency cost? (3) What new determinants drive M&A performance in Vietnam's evolving context?*

For the first sub-question, I apply Welch's t-test for all corporate governance indicators about CEO and Boards characteristics and I confirm that there are significant differences between two periods (before and after 2015). I witness that there are significant declines in percentage of CEO duality, CEO who hold PhD degree, gender diversity, board size and number of SOEs. On the other hand, the number of CEO who have major relate to Economics, age, tenure and independence of Board are increase significantly in later period. For the second question, as expect, the impact of CEO duality on M&A performance disappear during an atypical period. The shifting of corporate governance context in Vietnam possibly is a reason for this vanishing since the privatization and equitization of SOEs and the appearance of foreign investor reform Vietnam stock market

Since the role of CEO duality on M&A performance are outdate because it related to a specific context of Vietnam's market. I continue by testing new corporate governance indicators, including a set of Board and CEO characteristics. The results indicates that CEO with PhD degree and CEO have a background in economics, finance or management are associated with improved M&A performance, as reflected by a significant positive change in acquirer stock returns. When I consider ROA as measurement for operating performance of firms, the same results are observed. When I add interaction variable between the educational level and educated background of CEO, the coefficient of this variable is significant negative. It suggests that the major and the level of education of CEO being associated with higher synergistic gains. However, the lack of significance in the interaction variable suggests that having both qualifications does not provide additional benefits beyond having high level of education or an economics background independently.

1.3. Contribution of the study

This dissertation makes several theoretical and empirical contributions to the literature on managerial learning, corporate investment, corporate governance and M&A.

Firstly, this dissertation contributes to the understanding and measuring of stock price informativeness in emerging markets like Vietnam.

It advances the measurement of stock price non-synchronicity in Vietnam. Previous studies (Phan and Rangkakunuwat, 2022; Bui et al., 2020; Nguyen et al., 2019) have typically relied on market-level variation using the Capital Asset Pricing Model (CAPM) to calculate non-synchronicity. In contrast, this study enhances precision by categorizing firms into 184 sub-industries using SIC codes and incorporating both market and industry returns as systematic variations, improving the accuracy of the stock price informativeness index in Vietnam. I also add to the growing literature on corporate investment research in emerging countries by emphasizing the role of the stock market in influencing investment activities among Vietnamese listed firms. This finding extends the analysis in prior Vietnamese studies, such as Phan and Rangkakunuwat (2022), by incorporating a comprehensive dataset of firms covering the entire Vietnamese stock market from 2006 to 2022.

Secondly, this dissertation emphasizes the moderation and mediation role of stock price informativeness on firms' investment decision making.

I advance the literature on market feedback mechanism by clarifying the roles of stock price informativeness as a moderator and mediator in corporate investment decision. In chapter 2, I demonstrate that price non-synchronicity moderates the relationship between equity valuations and corporate investment. Specifically, higher price non-synchronicity amplifies the sensitivity of investment to stock prices, suggesting that managers rely more heavily on firm-specific signals when allocating capital. This finding resolves ambiguity in prior work by isolating conditions under which prices meaningfully guide investment. Results in chapter 3 contribute to the M&A literature by interrogating the mediating role of stock price informativeness. While conventional learning hypotheses suggest that market reactions directly influence deal completion likelihood, I find no empirical support for stock price informativeness as a mediator in this relationship. However, I uncover the interaction: deals with low investor attention but positive price feedback exhibits a higher probability of successful completion. This implies that managers may prioritize quality of market signals over quantity, challenging assumptions about how market feedback shapes M&A outcomes.

Thirdly, this dissertation examines the applicability of traditional theoretical frameworks within a novel contextual setting

While prior studies in developed countries have shown the evidence on the learning hypothesis, the empirical evidence of this hypothesis in emerging countries like Vietnam is still scarcity. This dissertation adds to the current literature on learning hypothesis by directly examining the impact of stock price informativeness on the sensitivity of firms' investment to stock price changes. I provide direct evidence for the argument that the amount of information contained in stock price could enhance the efficiency of investment decisions in Vietnam listed companies. However, the learning hypothesis is not clear when I consider M&A activities as a typical type of investment. While previous research has explored managerial learning from the stock market during M&A activities (Luo et al., 2005; Kau et al., 2008) and the effect of stock price informativeness on investment decisions (Chen et al., 2007; Adra and Barbopoulos, 2023), limited studies have incorporated stock price informativeness as a mediating factor in managerial learning specifically in M&A contexts. Although Kau et al. (2008) and Adra and Barbopoulos (2023) referred to the potential influence of stock price informativeness on managerial learning during M&A, few empirical studies have directly examined this link in the context of developing market like Vietnam, as this paper does. Interestingly, empirical results challenge theoretical predictions based on Western models regarding the role of market reactions and firm-specific variations in M&A deal completion. This divergence may come from the regulatory gaps in Vietnamese M&A and the guiding role of the government in certain deals.

Fourthly, this dissertation update perspective on CEO duality in Vietnam's governance evolution.

This dissertation contributes to a recent literature on corporate governance by testing the impact of various indicators on both short-run and operating performance. Replicating the paper of Pham et al. (2015) for the period from 2008 to 2014, I confirm that in the when market is dominated by State-Owned Enterprises (SOEs) and Family-Owned Enterprises (POEs), factors that related to internal mechanism such as CEO duality do not only associate with agency problems but also enhancing the performance of acquirer firm when they do M&A activities. It means that stewardship theory is more appropriate in explaining the impact of corporate governance on firms' performance. For later period when the Vietnam stock market dramatically change and become closer to international standard then the power concentration in CEO could no longer align with

the interest of shareholder. In the new context, the qualified CEO (measured by the educational level and educated major) plays a key role in the returns of acquiring firms on both short-term and long-term.

CHAPTER 2
THE INFLUENCE OF STOCK MARKET INFORMATIVENESS ON CORPORATE INVESTMENT DECISION: EVIDENCE FROM VIETNAM

Abstract

This study analyses the effect of the informativeness of the stock price on the investment decisions of listed companies on the Vietnam stock market. Using the unbalanced panel data set of Vietnamese firms from 2006 to 2022, I find that the stock market plays a significant role in guiding the investment of Vietnamese public firms. Specifically, my research reveals that corporate managers pay heightened attention to market signals when their stock prices incorporate contain more private information. Furthermore, the higher financial constraint could lead to a stronger correlation between past stock returns and firm investment. Several extension tests imply that there are differences among subgroups of private-owned firms versus state-owned firms, and top biggest firms versus smallest firms. My results also suggest that some policy frameworks should be implemented to improve the transparency and accountability of the Vietnam stock market.

Keywords*: Corporate investment, Stock price informativeness, investment decision, Vietnam stock market, real effects of financial markets.*

JEL Codes*: D22, G14, G31*

2.1. Introduction

The power of the market comes from the diversity of its information sources and the ability to aggregate information coming from different sources (Hayek, 1945; Bond et al., 2012). Obtaining appropriate and accurate information is considered by managers as the most essential precondition to make an investment decision and if there is some information that managers do not have, they should rationally update their beliefs based on market prices. In a well-developed financial system, financing decisions are effectively improved, which supports firm investment. In this paper, my aim is to answer the questions about the nexus between private information contained in stock prices and corporate investment decisions in the Vietnam context. Specifically, I empirically test whether managers used the movement of stock price as the input to provide their managerial decision.

Vietnam is an interesting case for examining the interactions between stock price information and corporate investment decisions for several convincing reasons. First and foremost, Vietnam holds an essential position among Asia's emerging economies, which distinguishes it from other economies in the same category by its unique institutional framework. Since the early-1990s, Vietnam has undertaken a comprehensive economic reform program (ĐỔI MỚI) to transition from a central plan economy to a market economy. This reform effort has resulted in significant results in various areas. In recent years, Vietnam's financial markets have experienced rapid growth and have emerged as an important source of capital for facilitating corporate investment (Ha and Vinh, 2017). However, these markets are still in the development phase and have special features, such as the presence of a significant number of individual investors (Nguyen, 2024). Secondly, emerging markets such as Vietnam are often confronted with significant information asymmetry problems (Ha and Vinh, 2017; Huynh et al., 2020). Given the challenges posed by the lack of an ideal information environment, market participants often find it difficult to make informed investment decisions. Thus, not only for investors but also for the company's management decision-making processes, the interpretation of stock price fluctuations is of supreme importance. These studies do not provide only the relations between the levels of stock price informativeness and investment sensitivity in developed stock market but test some firm specificities which impact this relation.

Stock markets have played a central role in resources allocation mechanisms in my modern economies for many decades (Goldstein, 2023). Firstly, the stock market provides open and regulated systems for firms to finance substantial amounts of capital via initial public offering (IPO) and seasoned equity offering (SEO) (Greenwood and Smith, 1997) or help attract more financing investment (Bosworth, 1975; Ferreira et al, 2011). A new investment project could be financed by individual investors. The stock market plays as a bridge for investors who seek stock return and firms who need new cash flow for their investment. The second role of the stock market is that it could create a powerful source of information through the trading process. Then, information from stock prices could shape the future of the corporation because managers could take into consideration the private information contained in stock prices to make corporate decisions such as long-term investment (Xu, 2021). Market information such as future investment opportunities, market demand-supply, potential competitors or financing opportunities might not be possessed by managers but this external information that is contained in the stock price could be a signal for managerial decisions such as investment (Chen et al., 2007; Ben-Nasr and Alshwer, 2016) or M&A plans (Adra and Barbopoulos, 2023). This effect is named as “the feedback of the stock market on the real economy” (Bond et al., 2012) or “managerial learning hypothesis” (Zuo, 2013). Firms' investment behaviour is also closely linked to stock price informativeness. In general, firms with highly informative stock prices are more likely to invest in new projects and expand their operations, as they are able to raise capital more easily from investors who have confidence in the accuracy of the stock prices (Chen et al., 2007; Bond et al., 2012). Conversely, firms with less informative stock prices may struggle to raise capital and may be more cautious about investing in new projects (Phan and Rangkakunuwat, 2022).

This idea about assessing the role of stock prices was originally presented by Hayek (1945) who argued price could aggregate information and it is followed by Roll (1988), Morck et al. (2000), Chen et al. (2007) who introduces the concept of price informativeness also known as firm specific return variation to define how close the stock price co-movement is to its corresponding industry and market. The relationship between stock prices' information and their impact on investment sensitivity can be explained through two different mechanisms, depending on whether stock prices transmit information beyond the scope of the firm’s manager. When the stock price is considered useful for manager knowledge, i.e., it contains more information than what the managers already know, investor reactions to stock price fluctuations may be due to the active role

of the stock price. In this case, managers can extract valuable price information and make investment decisions based on these insights. Conversely, if the stock price is generally informative, but does not exceed the manager's information set, the correlation between investment and stock price will continue to exist due to the shared impact of the basic information. Thus, in this context, managers do not learn from the market and only react to common information factors that affect stock prices and investment decisions.

This paper studies two questions about the impact of information within stock price on corporate investment decisions. (i) *How do Vietnam's regulatory gaps and high information asymmetry shape the role of stock price informativeness in corporate investment decisions? (ii) To what extent does stock price non-synchronicity moderate investment sensitivity in Vietnam's emerging market*? Using a large sample of Vietnamese firms over the period from 2006 to 2022, I follow Wang et al. (2009) by estimating two different model named: change model and level model. The change model considers the change of variables within two continuous years while the level model focuses on the value of each year. Both models explain one problem but from different perspectives.

This paper starts by investigating whether stock prices have a significant impact on the investment behaviour of firms. The first result confirms that stock prices have a significantly positive impact on the level of investment or the change in investment between year t and year (t-1). This result was confirmed by numerous previous research before (Chen et al., 2007; Wang et al., 2007). It means that those variables have the same movement as firms' investment. I next investigate whether managers could consider their investment behaviour based on the amount of private information that is contained in stock prices that does the managers learn from market when considering investment decision. The results of the question about whether managers learn from the market are compatible with my expectation that more private information that is new to managers could lead to higher sensitivity of investment level to the stock price. I find that these results are right for both change model and level model.

In the next part, I continue examining the impact of financial constraint on the sensitivity of investment to prices. The evidence in this research supports the hypothesis that financial constraint has a significant impact on the sensitivity of investment to stock prices. I extend my basic test by considering the influence of stock price informativeness on investment behaviour for

several sub-groups of firm size or firm-owner status. For firm-owner status subgroups, the results show that private information plays a key role in guiding investment activities and has some impact on sensitivity of investment to stock prices only for private-owned firms' group. For state-owned firms, this relationship is unclear, and I cannot conclude anything in this situation. For firm size subgroups, private information within stock prices has a different effect on sensitivity of investment to stock prices. It increases the sensitivity for small firms' group and decreases the sensitivity for big firms' group. Finally, I apply some robustness checks by using alternative methods to measure firms' investment or using different lagged time when calculating variables. The results show that my main results are robust.

This paper primarily contributes to the stock price literature in several ways: First, this paper confirm a role of stock market to investment activities of Vietnamese listed firms. It concludes that the private information which is contained in stock price and investment-to-stock price sensitivity have a significant association. This result provides more in-depth analysis with other research from Vietnam such as Phan and Rangkakunuwat (2022) when considering number of firms that cover all Vietnam stock market from period of 2006 to 2022. Secondly, this paper advances the measurement of stock price non-synchronicity in Vietnam. To my knowledge, previous paper of Phan and Rangkakunuwat (2022); Phan and Vu., (2021); Nguyen et al, (2024), only using variation related to market as systematic variation in capital asset pricing model to compute non-synchronicity. By using SIC code, I classify Vietnamese firms into 184 sub-industrial groups, and I use both market and industry return as systematic variation. Thus, it could help improving the accuracy of stock price informativeness index in Vietnam. Third, by considering the characteristic of Vietnamese firm, I point out the difference between big and small firms, private-owned and state-owned firms.

The remainder of the paper is structured as: section 2.2 will describe the data source, develop the research hypothesis and presents research methodology; section 2.3 provides empirical results, and the last part gives some conclusions and final research remarks.

2.2. Literature Review and hypothesis development

2.2.1. Stock market and firms' investment

In this paper, I first test how the change of stock prices could affect firms' investment. This hypothesis derives from the theoretical background of that stock price could lead to the change in firms' market value (Puspitaningtyas, 2017) or it could reflect the firms' earning opportunity and future viability (Collins et al., 1987; Dechow et al., 2014) and the managers could use information from their stock prices that help to improving their managerial decision (Ben-Nasr and Alshwer, 2018). In this research, I suppose that information about the market value of installed capital of firms and its replacement cost (Tobin's Q indicator) and firm's stock market return could affect managers' reliance on stock price. Bond et al. (2012) suppose two reasons to explain the relationship between stock prices and corporate investment. The first one is based on research by Grossman and Stiglitz (1980). They state that obtaining information is costly, which is why stock prices only reflect a portion of all available information. However, market participants are well-informed, which means that stock prices can convey information that managers may not have (Bond et al. 2012). Managers have more information about the company than outsiders, but additional information from secondary markets, such as competition, demand, macroeconomic and financing policies can help them identify profitable investment opportunities. This aligns with the argument made by Fama and Miller (1972) that more informative stock prices lead to better decision-making and can guide investment decisions. Empirical studies, such as those conducted by Chen et al. (2007); Bakke and Whited (2010), show that managers take market-based private information into account when making investment decisions. Additionally, when stock prices are more informative, firms make more efficient investment decisions (Durnev et al. 2004; Wurgler, 2000). The second reason comes from the correlation between the stock market and corporate governance. Shareholders believe that the change in stock price contains information about firms' value, so they link managers' salaries and compensation to the performance of the stock. In consequence, for job security, managers make their best efforts on their managerial decisions such as investment.

In contrast, other empirical studies declare that there is an important element of irrationality included in stock prices, and the effective cost of external equity is occasionally separated from the cost of other capital forms. As a result, stock prices have a limited impact on corporate

investment. Keynes (1936) had an idea of this explanation, and then Bosworth (1975), Blanchard et al. (1991), and Stein (1996) extended it. It is suggested that there are two plausible explanations for this phenomenon: (1) the managers possess more knowledge about potential investments than the public; or (2) when making investment decisions, the managers prioritize the company's long-term success over short-term fluctuations in share prices, even if they do not align with current market trends. Wang et al. (2009) show that stock market has no influence on the firm investment through its function. Also, the reasons for the unimportant role of the stock market in firm investment are investigated, and I find that the most possible reason is the price of a stock consists of very little data on a firm's future operating performance. Based on previous studies, I put the first hypothesis:

Hypothesis 1: *Stock prices have a significant impact on firms' investment.*

2.2.2. Stock price informativeness and firms' investment

The market information may come from domestic and foreign investors, debt providers, customers, policy makers, etc. However, not all information reflected in stock prices is valid (Zuo, 2013). Figure 2.1 below explains the information sharing between investors and managers. Specifically, the information on stock prices could be divided into two categories: common information and private information. The common information is shared while private information could be managers' asymmetric information or investors' asymmetric information (Myers and Majluf, 1984).

[Insert figure 2.1 about here]

My second hypothesis derives from the learning theoretical background that managers learn from private information and apply it to their managerial behaviour. To the extent that high firm specific variation is associated with lack of information transparency (Kelly, 2014), when price informativeness of firm is at a high level, firms' stock prices track closely to their fundamental values, exhibiting high efficiency of resource allocation in these firms (Durnev et al., 2003). Market participants are better informed of firms' future cash flows and growth opportunities from the current stock prices (Durnev et al., 2003; Chan and Chan, 2014). In this situation, high stock price informativeness is also associated with better management decisions (Chen et al., 2007; Frésard, 2012) because managers will use all available information to decide the level of

investment to maximize the expected value of firm. Few papers mainly consider the relationship between common information (which is available to everyone) and stock prices to predict firms' cash flow (Francis et al.,2015). In contrast, several papers highlight the role of private information that could lead to righteous investment decisions and trustable firm value predictions (Chen et al.,2007; Bond et al.,2012, Zuo, 2013). Bond et al. (2012) explains how information from stock price could influence managers' behaviour in two main channels: (1) learning channel and (2) incentive channel. Specifically, the efficiency of managers' learning action while making investment decisions could be better with the increasing of stock price informativeness (Chen et al.,2007; Bond et al, 2012). By aggregating diverse pieces of information, stock prices convey meaningful signals about the prospects of firms (Grossman and Stiglitz 1980; Hellwig 1980), thus increasing the sensitivity of firms' investment to price (Chen et al.,2007). Higher investment efficiency is found when more information is aggregated but the right decision is not based only on the total amount of information, but also on the source of this information (Edmans et al, 2017). In the other hand, the incentive channel underscores that managers' motivation to invest efficiently is influenced by stock prices, as their contracts are tied to stock performance. Stock prices significantly affect managerial incentives, leading to a stronger investment-price sensitivity, thereby influencing decision-making, and learning from the market (Foucault and Gehrig, 2008; Ouyang and Szewczyk, 2018). Based on this reasoning, I expect that the amount of private information (measured by stock price informativeness) could help increase the sensitivity of investment to stock prices.

Hypothesis 2: *The sensitivity of investment to stock prices is stronger when it contains more private information from the market.*

2.3. Data and Empirical Methods

2.3.1. Data sources

The data in this research was collected from Datastream through Eikon software. Specifically, the data about comprehensive market and corporate financial indicators and accounting data of Vietnamese firms are from Worldscope (access via Datastream). All databases are merged with DataStream code. The data sample consists of 1,347 public firms on Hanoi Stock Exchange (HNX), Ho Chi Minh Stock Exchange (HoSE) and Unlisted Public Company Market

(UpCoM) over the period of 2006 to 2022[10]. The 2006-2022 period is selected because many large companies representing the Vietnamese economy are only listed from period of 2006-2009. Furthermore, due to the market bubble over 2005-2007, stock prices before 2007 may contain a great amount of noise, which leads to possible inaccuracies. The number of firms in the sample varies across years and the data is unbalanced panel. The listed firms are roughly equally split between the three exchange markets. HNX is a trading platform for mostly small and medium stock enterprises (SME) while HoSE has more large companies' stock. After considering the full sample, I choose a group of the top 300 biggest firms as a sub-sample for the analysis.

[Insert figure 2.2 about here]

Figure 2.2 shows the market value of all firms (1,347 firms) and the top 300 biggest firms. I could see that 25% of listed firms account for over 90% of Vietnam stock market value. By concentrating on this sub-sample, I can provide insights into the trends and dynamics that have the most substantial impact on the market.

2.3.2. Econometric Specification

This paper estimate the effect of stock market valuation on managers' investment decision (H1) and the change of sensitivity of investment to stock prices because of stock price informativeness (H2). To test the first hypothesis about effect of stock price performance on firms' investment behaviour in Vietnam, I follow some research on stock market of emerging countries such as Wang et al (2009), Li et al (2011):

$$INV_{i,t} = \sum_{k=1}^{K} \beta_k F_{i,t,k} + \gamma SMV_{i,t-1} + \vartheta C_{i,t} + \alpha_t + \eta_i + \varepsilon_{i,t} \qquad (1)$$

where: $INV_{i,t}$ represents firm i's investment in year t. $F_{i,t,k}$ could be understood as k fundamental variables for firm i in year t. β is a vector of coefficients reflecting the effects of a diverse set of fundamental variables. $SMV_{i,t-1}$ is a stock market valuation variable for firm i in year t-1. I consider the 1 year lagged for market valuation because it could act as a barometer of external

[10] The complete dataset comprises 1,347 companies listed on the Vietnamese stock market. As of the year 2022, there are 331 companies listed on HNX, 412 on the HoSE, and 604 on the UpCoM. Each year, companies are either added or removed from each market, resulting in an unbalanced nature of our dataset. I also consider several sub-samples in analysing based on the firm-owner status (state owned or private owned enterprises) or firm size.

investor sentiment, then possibly facilitate investment in upcoming year. $C_{i,t}$ represents control variables for firm i in year t. $\alpha_t \; and \; \eta_i$ are fixed effects for year t and firm i respectively and $\varepsilon_{i,t}$ is a disturbance term. The equation (1) could be used to explain how the stock market could affect managers' investment decisions if they know the value of future fundamentals. I define equation (1) in two perspectives: as the changes of each variable and as the levels of each variable and I named them as change model and level model. Both models explain the research question in different perspectives. In change model, most main variables are measured by the difference between two continuous years. In level model, those variables are measured by the total volume of each year. Variables of each model also are normalized by a common factor: total market value of common stock share for change model and total asset for level model. Each model has its own advantages, and I examine them both for the sake of completeness and robustness of research. The main dependent variable used in this research is capital expenditure, then scaled by a common factor. Another measurement for firms' investment (by total of tangible and intangible of fixed assets) was shown in robustness check part.

Next, I study the effect of stock price informativeness on investment behaviour of Vietnamese firms. The stock market could affect future firms' investment by bringing valuable information for investment decisions of managers and they want to collect as much information as possible. However, the stock market contains some type of information that is unknown to managers, and I want to investigate the role of this type of information in the sensitivity of firms' investment to stock prices. To do that, interaction variables of stock price informativeness ($INFO_{i,t-1}$) with stock market valuation ($Ret_{i,t-1}$ for change model and $TobinQ_{i,t-1}$ for level model) are added into base regression. If the coefficient of the interaction term of informativeness and the stock market valuation is significantly positive, then those firms that have stock prices with rich information respond to their stock market valuation more sensitively than other firms do. The regression that includes relative responses are:

$$INV_{i,t} = \sum_{k=1}^{K} \beta_k F_{i,t,k} + \gamma_1 SMV_{i,t-1} + \gamma_2 SMV_{i,t-1} INFO_{i,t-1} + \vartheta C_{i,t} + \alpha_t + \eta_i + \varepsilon_{i,t} \qquad (2)$$

where $INFO_{i,t-1}$ is the stock informativeness of firm i in year t-1 and $SMV_{i,t-1} INFO_{i,t-1}$ is interaction variable between stock price informativeness and stock market valuation. I answer the second hypothesis by testing whether the sensitivity of investment to price is increased in the measure of private information within stock price. I expect that the coefficient of this variable is

significantly positive. I re-check this result by calculating the sensitivity of investment to stock price from 25% to 50% level of $INFO$ variable (assuming it is *Sens1*) and from 50% to 75% level of this variable (assuming it is *Sens2*). If *Sens2* is higher than *Sens1* then I can conclude that the sensitivity of investment to stock price increases with the amount of firm-specific variation

2.3.3. Variables Construction

In this section, I describe the measurement method of dependent and all independent variables. The summary of variables definition, measurement and data sources are shown in Appendix 2.1.

2.3.3.1. Dependent variables

I define a firm's investment as the yearly total of annual capital expenditure which is very popular in previous paper (Chen et al., 2007; Wang et al., 2009; Phan Trong and Vu Thi Thuy, 2021; Pereira da Silva, 2021) and another possible measurement for firm investment could be of tangible and intangible fixed assets (Phan and Rangkakunuwat, 2022). In this paper, I mention capital expenditure as the proxy for investment in the main part and the other of the robustness check. To ensure the robustness of research results, I use from 2 to 4 lagged years in calculation in my robustness check part. Puspitaningtyas (2017) use lagged time up to 6 years but due to the lack of data, maximizing 4 lagged years is appropriate for my research. In change model, the dependent variable $deltaI_{i,t}$ is the change in the firms' investment between year t and lagged 1 year, scaled for the total market value of common stock shares at the year t-1. It could be understood as the difference in firm investment between year t and 1 lagged year scaled by market value of stock shares in the beginning of year t. In this paper, 1 years as a lagged time for investment in Vietnam is applied because it usually takes from 1 or 3 years from feasibility study to the moment when the project is fully established. For the level model, dependent variable $I_{i,t}$ is the investment volume of firm i in year t, scaled by total assets at the same year. It could be understood as the firm investment in year t scaled by the total asset at the year t-1.

2.3.3.2. Independent variables

Stock market valuation variables

Stock market valuation (*SMV*) refers to how the stock market is evaluated as the whole. It is typically influenced by the fluctuation in the price of stock. In change model, I follow Wang et

al. (2009) to define stock market valuation as total market value of firms' common stock shares. It is a measurement of the current value of a company's outstanding shares and this indicator illustrates how the company's shares are faring in terms of their price, trading volume, and other financial indicators. For the change model, I use firms' stock return as the market signal for managers. This indicator turns into a stock market return (*Ret*) after scaling by the market value of common share in the previous year. Stock return is the profit that individual investors could earn by buying and selling stock in the secondary market. The stock market is a meeting place for firms who need to raise funds and investors who wish to invest in their resources. High stock returns in the present could help firms easily raise capital through seasoned public offerings in the future. I expect that the coefficient sign of Ret is positive, significant in regression then I can confirm hypothesis H1 and conclude that stock market prices have a significant impact on firms' investment. In level model, I use firms' market value as measurement for stock market valuation. After normalizing by total asset, it turns into *TobinQ*. This indicator is widely accepted as a proxy for firms' investment opportunities (Wang et al., 2009; Xu, 2021) or in the literature as it is less likely to be affected by earnings management or accounting manipulations, thought to be common in Vietnamese firms. The idea of this theory is that an increase of purchasing assets could create value for the firms because of the enhanced technology or the saving of minimum required input. When this ratio is less than one then it is more effective to buy ready-made physical assets than buying or replacing newly generated physical assets, thereby making further investment impossible for a firm, or resulting in low or non-existent investment opportunities. Similar to change model, I expect that the coefficient sign of $TobinQ$ is positive, significant in regression then I could confirm hypothesis H1.

Fundamental Variables:

There are three fundamental variables in the model. The first one is *CF*, and it is calculated by summing net income before extraordinary items, depreciation, amortization expense, R&D expense and scaled by beginning of yearbook assets. In change model, this variable is $deltaCF$ and it could be interpreted as the difference in cash flow between two continuous years scaled by the total market value of common share at the beginning of year t-1. In level model, I use *CF* variable to measures the cash flow of firms during the observed year (Wang et a., 2009; Chen et al.,2007; Phan and Rangkakunuwat, 2022). I expect that the coefficient of this variable is significantly positive to dependent variable. The second variable is Sale. It is the volatility of sales

and revenue calculated for each firm over a period of 1 year. The relationship between the volatility of sales and firms' investment can be complex. The increase in *Sale*, in some ways, could lead to the increase in investment of firms that are risk averse (Foucault and Gehrig, 2008). However, high volatility of sales could be linked to greater investment risk (Pereira da Silva, 2021) and it could potentially deter some managers who prefer stable returns. In the change model, $deltaSale$ is the difference in sale scaled by the total market value of common stock. For level model, *Sale* variable is annual net sales of each firm scaled by firm total asset. The last fundamental is applied to level model only. *Leverage* is the leverage level of firms which is calculated as the ration of long-term debt over total assets (Chen et al., 2007; Wang et al.,2009; Phan and Rangkakunuwat, 2022), where the effect of leverage on investment has two sides. On the one hand, firms with high leverage might reject a good investment project because of debt overhang concerns. On the other hand, corporate managers tend to issue more debt to expand the firm's investment. Then the sign of leverage coefficient could be negative or positive and it depends on the specific situation. *Leverage* is measured by the ratio of total debt to total assets at the beginning of the year t.

Control Variables:

An inverse of total market value (*inv_MV*) or inverse of total assets (*inv_TA*) as control variables based on specific occasion. Since the dependent variable and other important regressors are scaled by the denominator that possibly led to an incorrect correlation, I include control variables to isolate the correlation between investment variable and firm's stock market performance variables that is induced by the common scaling variables.

Stock price informativeness variable

In this study, my primary proxy for stock price informativeness is the degree of price non-synchronicity proposed by Roll (1988) and applied in various studies (Adra and Barbopoulos, 2018; Bakke and Whited, 2010; Chen et al., 2007; Morck et al., 2000; Ouyang and Szewczyk, 2018; Nguyen et al, 2024; Vuong, 2021). It is the model used on a large body of literature, both empirical and theoretical. The stock price informativeness measure is derived from the R-squared of the market model applied to daily returns. By running multiple factor regression models, R-squared values provide an estimation of the variation in the returns on a stock that cannot be explained by market and industry returns. This implies that if the profitability of a firms' shares is

closely related to the profits of the market and industry, the stock prices of the firm is less likely to provide specific information about them, which is useful for investment decisions. Specifically, R-squared is the coefficient of determination from the following regression:

$$R_{i,j,t} = \beta_{1,0} + \beta_2 R_{m,t} + \beta_3 R_{m,t-1} + \beta_4 R_{j,t} + \beta_5 R_{j,t-1} + \varepsilon_{i,t} \quad (3)$$

Where:

$R_{i,j,t}$ is the stock return of firm i, industry j and time t.

$R_{m,t}$ is the market return in time t.

$R_{m,t-1}$ is the market return in time t-1.

$R_{j,t}$ is the industry return j in time t.

$R_{j,t-1}$ is the industry return j in time t-1.

Most previous research in Vietnam context exclude industry return in equation (1). The reason could be the shortage of available data, or few industries can be more dominated in the economy than others, resulting in the difficulty to separate these industries' effect from the effect of the market (Nguyen et al, 2024; Phan and Rangkakunuwat, 2022). This paper deals with those problem by using SIC Code and 1347 Vietnamese listed firms are classified into 184 sub-industry groups. Each sub-industry group contains 4 to 15 firms so there is no over-dominated industry group. I also add one period lagged of market returns and industry returns into this regression to capture price synchronicity in emerging countries (Scholes and Williams,1977; Chan & Chan, 2014).

The daily return of each firm is defined as quantifying the change in the value of the firm's stock over a single trading day. The number of daily return observations of each stock is a maximum of 250 observations for each year. Firms with less than 100 observations are removed to avoid firms that went public, were delisted, or experienced trading halts. Since the R-squared is a highly skewed and bound dependent variable between zero and one, I apply a logistic transformation to obtain a near normal distributed variable (Brockman & Yan, 2009). The stock price non-synchronicity could be estimated as:

$$INFO_i = ln\left(\frac{1 - R_i^2}{R_i^2}\right) \quad (4)$$

This value measure stock price informativeness or stock price non-synchronicity of firm i and in this paper, I name it as $INFO_i$ variable. Based on Roll (1980), low *INFO* has a negative correlation with firm-specific information that is incorporated into stock prices and vice versa. Prior empirical research has established a connection between firm-specific return variation and corporate investment decisions (Durnev et al., 2004; Chen et al. 2007; Foucault and Frésard, 2014). The usual models about stock price changes contribute to (1) unpredictable movements in extensive economic factors, (2) unpredictable changes in the firm 's market environment and (3) unpredictable events specific to the firm itself. This value could be negative (if R^2 is lower than 0.5) or positive (if R^2 is higher than 0.5). The stock price will contain more firm-specific information when the return of stock becomes less correlated with the return of industry and market (Chen et al.,2007; Bennett et al.,2020).

Financial constraint variables

There are various methods to measure the financial constraint situation of firms such as KZ4 index, WW index, HP index, non-dividend payer, dividend payer. In this research, I use two alternative indexes (*KZ4* and *WW*) to measure firm-specific level of financial constraints. KZ4 index is the most popular method which be built by Kaplan and Zingales (1997) and be developed by Baker et al (2003). This index is used as a proxy for the degree of equity dependence. The higher KZ4, the higher of financial constraint too. Specifically, the KZ4 index could be estimated by:

$$KZ4_{i,t} = -\frac{1.002CF_{i,t}}{A_{i,t-1}} - \frac{39.368DIV_{i,t}}{A_{i,t-1}} - \frac{1.315C_{i,t}}{A_{i,t-1}} + 3.139LEV_{i,t} \quad (5)$$

where $KZ4_{i,t}$ is KZ4 index for firm i in year t, CF_{it} is the firms' cash flow. $A_{i,t-1}$ is the total asset of firm i and year t-1, $DIV_{i,t}$ is cash dividend value. $\boldsymbol{LEV_{i,t}}$ is leverage and $C_{i,t}$ is cash balance of firms i and year t.

In this paper, I also follow Whited and Wu (2006) to build WW index. After calculating WW index, I will add this variable and its interaction variable with *TobinQ* into level model and stock return in change model. Once again, the higher value of WW index means that higher level of firms' financial constraint. Specifically, the WW index could be estimated as:

$$WW_{i,t} = -\frac{0.091CF_{i,t}}{A_{i,t-1}} - 0.062\ DIVPOS_{i,t} + \frac{0.021\ LD_{i,t}}{A_{i,t-1}} - 0.044\ LNTA_{i,t} + 0.102\ ISG_{i,t} - 0.035\ SG_{j,t} \quad (6)$$

where $WW_{i,t}$ is WW index for firm i and year t, $DIVPOS_{i,t}$ is dividend pay situation of firms i in year t. This indicator takes value of 1 if firms pay dividend as cast and 0 for otherwise. $LD_{i,t}$ is long-term debt of firms i in year t. $LNTA_{i,t}$is the natural logarithm of total assets of firm i in year t. $SG_{i,t}$is the sales growth of firm i in year t and $SG_{j,t}$ is the sale growth of industry j in year t.

2.4. Empirical Results

2.4.1. Data Description

To mitigate outliers out of the sample, each variable is winsorized all values below the 1st and 99th percentile. Table 2.1 summarizes the summary statistics for all variables for two models. All of the variables are well defined in Appendix 2.1.

[Insert table 2.1 about here]

For the change model, the average firm investment growth based on capital expenditure is 16.7% of total market value with the standard deviation is about 0.346%. It is noticed that the mean of *deltaI* is higher than 75 percentiles of firms. It means that my data is skewed, or I have some outlier that could affect the mean. By winsorizing all variables, I reduce the effect of spurious outliers on the mean value. In this paper, I analyse some sub-samples such as top 300 firms, top 30 biggest firms versus top 30 smallest firms, private firms versus state-owned firms to in-depth clarify the nexus between stock price informativeness and investment behaviour of firms. The average firm's stock market return is 1.411% with the standard deviation is 0.653%. The descriptive statistics of mean for two fundamental variables: *deltaSale and deltaCF* are 0.27 and 0.016 respectively. Regarding the stock price informativeness, the mean value of R-squared from equation 4 is 0.291. It means that 70.9% of firms' returns is not explained by market returns and industry returns but other firm-specific information. The mean and standard deviation of *INFO* is 1.371 and 2.670 respectively. This result is quite close to some recent research about stock market in Vietnam such as Nguyen et al. (2020) and Vuong (2022). This value is relatively low compared to those of the US market, with the average stock price non-synchronicity value is 1.85 (Amedeo, 2015).

For the level model, the average firm investment accounts for nearly 5.2% of total assets. The minimum value is close to zero while the maximum is about 14.5%. The reason for this phenomenon is that new investment input is less than the disposed fixed asset. It is worth noting

that the level of investment is skewed and considering some small sub-sample is necessary in my analysis. There are negative net cash-flow observations because the net profit of firms could be less than its depreciation expense. The average value of *Sale* and *CF* is 1.196 and 0.081 respectively. The mean value of *TobinQ* is 1.093 with a standard deviation is 0.52. This value is similar to numerous previous research in Vietnam contexts such as Nguyen et al. (2024), Bui et al. (2022) and Vuong (2022).

2.4.2. Empirical Results

This section is designed to well explain empirical results. It includes three parts in total. The first part answers the following hypothesis H1 and H2. The second part considers some sub-samples such as state-owned firms versus private firms, top biggest firms versus top smallest firms. The last part shows the results of robustness check.

2.4.2.1. Basic tests

Before declaring panel data regression, the correlation and covariance is computed to have an idea of univariate correlation between variables. The result is shown in table 2.2 below:

[Insert table 2.2 about here]

Table 2.2 provides the result of the correlation's matrix among variables in two models: Panel A for change model (8,411 observations) and panel B for level model (10,699 observations). The data in panel A overall shows that most variables have low correlation with each other. It can be seen that the correlation coefficients are generally under 0.5. In panel A: change model, the lowest correlation belongs to *deltaI* and *INFO* is 0.016. The highest correlation between sales (*deltaSale*) and firms' stock return ($deltaI$) is 0.156. The data in panel B illustrates that firm' investment level (I) has a positive relation with *Sale, CF, inv_TA, Leverage*. By contrast, it has a negatively correlated to stock price non-synchronicity. All of correlations between investment level and other independent variables are significant at 1% level. All the other variables in panel B have low correlation with each other (lower than 0.5). The highest correlation is -0.256 (between *TobinQ* and stock price informativeness *INFO*). The lowest correlation is 0.032 (between annual *Sale* and *INFO*). The low correlation between independent variables suggests that these variables are not strongly linearly related to each other, and it can help to improve the stability and interpretability of the regression model by reducing multicollinearity.

[Insert table 2.3 about here]

Table 2.3 provides a multicollinearity test using a metric known as the variance inflation factor (VIF). The VIF value of all explanatory variables in change model (panel A) and level model (panel B) are in range from 1 to 2 and average of VIF for change and level model is 1.35 and 1.11 respectively. Thus, I can conclude that multicollinearity is not a problem in this model.

The influence of stock market on investment behaviour

To test the first hypothesis, I directly evaluate the equation (1). Table 2.4 represents the results of the change model.

[Insert table 2.4 about here]

Table 2.4 shows the influence of stock market performance (measured by firms' stock return) on its investment behaviour. According to the "managerial learning hypothesis" (Zuo, 2016), if the market could bring useful information about future cash-flow of firms then managers could apply this information to their managerial decision such as investing in new project. Thus, I expect that the sign of estimated coefficient of stock return is significantly positive. I use 1-year lagged time in my main regression. Two first column regress with full sample while the next two column regress in sub-sample of top 300 listed firms. I use only fundamental and control variables in column 1 and 3. The result shows that the change of Sale, change of cash flow have a significant positive impact to investment behaviour in the full sample case while these relationships are still ambiguous. The coefficient of *deltaCF* and *inv_MV* are insignificant when I consider the top 300 firms.

I could answer the first hypothesis by adding stock return variable into regression in column 2,4 and as overall, the sign and significant status of other variables remain. The regression results in table 2.4 show that the coefficient of firms' stock return is significantly positive in all regression. This result means that there is a positive correlation between long-term investment of firms and its stock market return or information that contain in stock price (stock return) has a significant impact on firms' investment.

For the level model, I apply the same analysis technique, but I add leverage into regression as fundamental variable.

[Insert table 2.5 about here]

Table 2.5 shows the regression result of firm investment and stock market valuation based on level model. Similar to the previous part, I consider full sample and sub-sample of top 300 firms in my regression. Two first column analyzes with full sample while the next two columns regress with sub-sample. I estimate only fundamental and control variables in column 1,3 and I add stock return variable into regression in column 2,4. The incremental explanatory power (measure by adjusted R-squared) of fundamental is about 38% and this number stays remaining when I include *TobinQ* variable into the regression, following Bakke (2010). To confirm the first hypothesis, I expect that the coefficient of *TobinQ* is significant. The result shows that for full sample, the coefficient of *TobinQ* variable is insignificant, and it suggests that there is no correlation between this variable with dependent variable. However, when I consider the top 300 firms' sub-sample then this coefficient is significantly positive, and I still can confirm hypothesis 1 in level model. As for the additive fundamental variable, *Leverage* has a significant positive impact on firm investment level. Other independent variables such as *Sale, CF, Leverage, inv_TA* have the same impact to firm investment as in change model.

The influence of stock price informativeness to the sensitivity of investment to stock price

I will confirm the second hypothesis by considering the role of stock price informativeness on the sensitivity of investment to price. I regress dependent variable (*deltaI*) with all independent variables such as fundamental variables (*deltaSale, deltaCF*), stock price informativeness (*INFO*), firms' stock return (*Ret*), control variable (*inv_MV*) and interaction variable (*Ret*INFO*) with all firms and sub-sample of top 300 firms. The result for full regression for change model is shown in table 2.6.

[Insert table 2.6 about here]

Column 1 considers full sample while column 2 is with sub-sample of top 300 firms. In column 1, I could see that the coefficients of all variables are all significant at 1% level. As to the other variables, table 6 illustrates that the estimated coefficient for *deltaSale* is significantly positive (at the 1% confidence level). It implies that the expansion of the business scale significantly impacts on their investment since they need to purchase more fixed assets such as machinery or build more factories for their production. The coefficient of *deltaCF* variable is significantly positive. It implies that Vietnamese firms could rely on internal source than external one when financing for their new investment project. The coefficient of firms' stock return variable

(*Ret*) is significantly positive means that if profit has been made then managers will increase their investment in firm. In order to answer the second hypothesis, I focus on the coefficient for interactive variables, the estimated coefficient of *Ret*INFO* variable is 0.016 with t-statistic of 6.93 (significant positive at the 1% confidence level). This result indicates that better price informativeness could lead to a stronger correlation between past stock returns and firm investment. These estimates indicate that the sensitivity of investment to the price of firm with a 25th percentile is 0.032[11]. If I consider the 75th percentile value of *INFO* then the sensitivity of investment to price is =0.055. This result means that the sensitivity of investment to stock price will be higher for firms with higher firm-specific return variations. In this case, the private information about the firm's stock return could be understood as the proxy for the future expected return and managers could give their investment decision based on this positive market signal.

Column 2 repeats the same analysis with the top 300 firms as sub-sample. I could see that the coefficient for *Ret*INFO* is 0.01 (significant level at less than 1%). This illustrates that the higher stock price non-synchronicity level is, the stronger the interrelation between past stock return and firm investment. Applying the same calculus as above, the sensitivity of investment to the price of a firm with 25th percentile value of *INFO* is 0.0217 and for a firm with 75th percentile value is 0.0362. My results show a positive impact of stock price informativeness on investment to stock price sensitivity, which are consistent with numerous previous research (Chen et al., 2007; Ouyang and Szewczyk, 2018) and I can confirm my second hypothesis (H2). One research in Vietnamese context of Phan and Rangkakunuwat (2022) shows a contrasty result with this paper when he claims that there is a negative impact between stock price informativeness and the sensitivity of investment to stock price. However, the possible explanation for the differences in the size of sample when he considers only 633 list firms in HoSE and HNX market during the period of 2007 to 2017. The coefficient value of other variables such as *deltaSale, deltaCF, INFO, inv_MV* are nearly the same with column 1.

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*[11] Given that the 25th percentile value of INFO is 0.104 and median value is 1.779 according to table 1. These estimates indicate that the sensitivity of investment to price of firm with a 25th percentile is {0.005 - (0.104-1.779)*0.016} = 0.032. Similarity, sensitivity of investment to price with 75th is {0.005 - (0.104-3.224)*0.016}=0.055*

I follow the same step with the level model by adding all independent variables into the regression. The results are shown in table 2.7:

[Insert table 2.7 about here]

Column 1 considers full sample while column 2 is with sub-sample of top 300 firms. I could answer the hypothesis H2 by looking at the coefficient sign of $Q * INFO$ variable. For full sample, the coefficient of market valuation variable (proxied by *TobinQ*) is insignificantly positive. I focus on the value and the sign of interaction variable $Q * INFO$. As column 1 shows, this coefficient is estimated at 0.0001 with t-statistic of 5.54. Given that the 25th percentile value of *INFO* is 0.561 and median value is 0.831 according to table 1. These estimates indicate that the sensitivity of investment to the price of firm with a 25th percentile is {0.004 - (0.831-0.561) *0.0001} = 0.0039. If I consider the 75th percentile value of *INFO* then the sensitivity of investment to price increases about {0.004 - (1.176-0.561)*0.0001}=0.004. The increase implies sensitivity of investment-to-stock price is higher for firms whose stock prices have greater firm-specific return variations. This result also confirms the hypothesis H2, which implies that firms with more private information in stock price have higher sensitivity of investment to price and it in line with the result I got in previous part. It could be explained that stock prices contain several types of information and managers will evaluate which information is worth or not worth learning. In this case, information about firms' market valuation (measured by *TobinQ* index) provides a more useful signal for managers about future investment opportunities then they can consider those pieces of information to their decision. This result is quite like some recent research on stock price informativeness in Vietnam such as Phan and Rangkakunuwat (2022). As to the control variables, the estimated coefficient of *CF* is significantly positive. This result means that cash flow positively influences on the Vietnamese firms' investment. This reflects the characteristics of Vietnamese publicly listed firms, which generally do not have much free cash in their current account since they are highly reliable on external finance. The coefficient for *Leverage* is significantly positive. It implies that Vietnamese firms will increase investing when they have high level of debt/equity. The reason for this phenomenon could related to the expected of Vietnamese managers in the future when they consider high risk equal to high return. However, this result is not in line with other results from research of Vo (2019) or Phan and Rangkakunuwat (2022). Thus, it is needed to have more research to confirm this statement.

For the top 300 firms' sample, I apply a similar analysis but for a smaller group of firms. The result in column 2 is quite similar to column 1. All variables are significant except for *Sale, TobinQ* and *INFO*. I could see that the coefficient for *Q*INFO* variable is 0.001 (significant at 1% level). These results also confirm H2 that the investment sensitivity to price is higher for firms with a higher stock price informativeness. Applying the same calculus technique, the sensitivity of investment to stock price with 25th percentile value of *INFO* is 0.0012 and that for firm with 75th percentile value of *INFO* is higher at 0.0016.

2.4.2.3. Extending the basic tests

The influence of financial constraints on the sensitivity of investment to stock price

The effect of financial constraints on firms' investment is confirmed in many previous studies (Baker et al. 2003, Chen et al.,2007, Fujun Lai et al. 2021). Financial constraints refer to limitations that prevent a company from easily accessing external financing, such as debt or equity, to fund its investment projects. These constraints can arise due to various factors, including the firm's financial health, creditworthiness, and market conditions. Specifically, small and medium enterprises are more likely to face difficulty in self-finance than large firms because of larger information asymmetrical (Ha and Vinh, 2017) or higher collapse rate (He and Ren, 2023) or high monitoring cost (Morck et al., 2000). Several papers highlight that firms with high financial constraints may have difficulty financing profitable investment opportunities, which can affect their growth and profitability, and it could lead to the decline of stock price (Seo et al., 2018; He and Ren, 2023). In this case, managers will have stronger incentives to use external price information to allocate internal resources and funds efficiently and cease unwise investments. Therefore, costless information on stock prices is more favourable and valuable for firms with financial constraints.

I measure the impact of financial constraint to the sensitivity of stock price to investment, I apply the same technique by adding the interaction term of equity dependence and stock market performance (stock market return for change model and stock market valuation for level model). In this paper, I use two alternative indicators to measure financial constraint level of Vietnamese firms. The following equation is proposed to test a hypothesis 3:

$$INV_{i,t} = \sum_{k=1}^{K} \beta_k F_{i,t,k} + \gamma_1 CONSTRAINT_{i,t-1} + \gamma_2 SMV_{i,t-1} CONSTRAINT_{i,t-1} + \vartheta C_{i,t} + \alpha_t + \eta_i + \varepsilon_{i,t} \quad (7)$$

where $CONSTRAINT_{i,t-1}$ is the financial constraint status of firm i and year t, which measured by WW index and KZ4 index. Both could be used as a proxy for the dependency level of firms' equity. Other variables are well explained above. The coefficient γ_1 is expected to be significant then I can conclude that the financial constraint level of firms could have some affect to investment change (change model) or investment level (level model) of Vietnamese listed firms. γ_2 is expected to be significant positive then I can conclude that investment of firms who have high-level equity dependency is more sensitive to stock prices than low-level firms. The result is shown in table 2.8 below.

[Insert table 2.8 about here]

Similar to Chen et al. (2007), I use the KZ4 measure to proxy for the acquirer's equity dependency.). Baker et al. (2003) developed the four variables version of the equity dependency measure proposed by Kaplan and Zingales (1997). Moreover, I follow Whited and Wu (2006) to calculate WW index and I use this indicator as an alternative financial constraint measurement. The higher their financial constraints, the more difficult it is for firms to obtain external financing. In this case, managers will have stronger incentives to use external price information to allocate internal resources and funds efficiently and cease unwise investments. Therefore, costless information on stock prices is more favourable and valuable for firms with financial constraints. In order to answer the question about the impact of financial constraint to investment, I estimated equations (10) and (11) by adding WW index, KZ4 index and interaction of this variable with *TobinQ* into the level model or firms' market return to the change model with 1 year lagged time to eliminate the effect of investment gaps. I focus on the coefficient sign of interaction variables (*Ret*KZ4; Ret*WW; Q*KZ4 and Q*WW*). I expect that those coefficients are significant then I can conclude that financial constraints could have some effect on the sensitivity of investment to stock price. The result is shown in table 2.8. The first and second column show the results based on KZ4 index while the third and fourth column show the regression result based on WW index.

For KZ4 index, I could see that the coefficient of interaction variable of *Ret*KZ4* is significant positive at 1% level. Given that the 25th percentile value of *KZ4* is 5.091, median value is 12.21 and 75th percentile is 47.67 according to Table 1. These estimates indicate that the sensitivity of investment to price of firm with a 25th percentile is {0.117 - (12.21-5.091)*0.0001} = 0.116. If I consider the 75th percentile value of *KZ4* then the sensitivity of investment to price

increases about {0.117 - (47.67-12.21)*0.0001}=0.117. Hence, my evidence supports the idea that the investment response more sensitivity to the stock market movement of firms with high level of financial dependency is different from that of firms with low level of financial dependency. When managers are subject to severe external financial constraints, they often have a strong motivation and willingness to alleviate restrictions. They will allocate more resources to the efficient departments to improve the entire efficiency of the company. Since stock market information is an external information resource, managers may be wary of using this information to optimize business decisions when they encounter financial constraints. This result is consistent with another research of Ben Nasr and Alshwer (2016); Fujun Lai (2021) and further investigation about this problem should be applied to confirm this statement. However, the variable *Q*KZ4* is insignificant at 10% level, and I cannot provide any conclusions in this case. For *WW* index, the coefficient of two interaction variables *Ret*WW* and *Q*WW* are insignificant too then the relationship between financial constraints and sensitivity of investment to stock price information is not confirmed yet. However, based on the result on column 1, I still conclude hypothesis H3 but further analysis about this problem is opened for future research in Vietnam market.

2.4.2.3. Stock price informativeness and firm investment from various sub-samples

This section extends my analysis by considering several sub-samples, including the status of ownership (private companies versus state-owned companies) and the size of the companies (largest companies versus small ones), and I try to find any differences between these subgroups. This concept is driven by the fact that, due to the special characteristics of the State-owned enterprises itself, the investment behaviour of the state-owned company does not follow the signs of the market. If it is not considered a competitive market topic, which seeks to maximize the interests of the company, then private information from the market appears to have very narrow boundaries. The same idea could apply to the sub-group of firm size when larger firms are less likely, on average, to exhibit strong sensitivity of investment to stock price, possibly because changes in their stock prices are less likely to affect their ability to finance investment (Chen et al, 2007).

The difference between Private-owned enterprises and State-owned enterprises

Most of the top strongest firms in Vietnam market are State-owned enterprise, and their shares could not be trade freely because of some limitation in managerial structure. The quality of

listed firms is languorous, which is reflected by poor profitability and disabled firms' governance (Nguyen et al., 2024).

[Insert table 2.9 about here]

Table 2.9 shows the regression results for the sub-sample of firm owner status. The regressions based on change model are displayed in column 1 and 2 while level model is displayed in column 3 and 4. For change model, I could see that there is a distinct difference between private-owned firms and state-owned firms. All coefficients of independent variables in column 1 are strongly significant at 1% level for private firms except for stock return (*Ret*) variable. I could see that the change in sale revenue, the change in cash flow, total market value, and stock return have a positive impact on the change of investment for private firms. The coefficient of interaction variable R*et*INFO* is 0.02 and t-statistic is 4.05. This result supports the observation in the literature that the investment in price sensitivity is higher for firms whose stock price has higher firm specific return and this result consistent with the baseline results. In column 2, there is only *inv_MV* variable is significant at 10% level then I are lack up evidence to conclude about the role of stock price informativeness on manager behaviour. For level model, I can see that the coefficient of interactions variable *Q*INFO* is insignificant for both group private-owned and state-owned enterprises. In this case, my evidence does not support the hypothesis that the stock market has a significant informational impact on investment decisions. Overall, I can conclude that there is a difference in the way of using information to managerial behaviour between private-owned firms and state-owned firms.

The effect of firm size

This section summarizes the results of a regression analysis involving two selected sub-samples, classified by their sizes. The firm's size has a significant impact not only on investment trends, but also on the information attributes of stock prices. Large firms have increased negotiations with debt providers, reduced levels of information asymmetries and will therefore benefit from better access to investment capital. In addition, larger firms can have greater transparency compared to smaller ones, which can influence the dissemination of price-related information. Collins et al. (1987) first investigated the impact of firm size on price-related data then Chan and Chan (2014) have confirmed the existence of different levels of stock price information in firms. Consequently, I have divided the corporate group into two different

categories based on the size of the firm, operating by their market value and trying to find any difference in the two groups. I focus on the top 30 biggest firms and the top 30 smallest firms in this analysis. The results are shown in table 2.10 below:

[Insert table 2.10 about here]

The regression results for the sub-samples of firm size are presented in table 2.10. The first and second column are regressed based on change model while results of level model are shown third and fourth column. In the change model, I could see several differences between the two groups. Firstly, the coefficient on the interaction variable *ret*INFO* is significantly negative for large firms' group and significant positive for smallest firm group. This result indicates that larger firms are less likely, on average, to exhibit strong sensitivity of investment in stock prices, possibly because changes in their stock prices are less likely to affect their ability to finance investment. Secondly, the stock market performance has an impact on the firm's investment only for the group of the biggest firm. The reason for this result could come from the fact that most of Vietnamese firms are small or medium and the managing hierarchy is not too complicated, the managers could know their firms' operating activities well. They believe in themselves more than the market when evaluating future investment opportunities and do not use market signals in their decision. Thirdly, all coefficient of independent variables for the biggest firm are significant except for *deltaCF* variable while these variables in smallest firms are insignificant.

In the level model, there are two worth notices. Firstly, the positive coefficient for *CF* and *Leverage* variables in both sub-groups means that capital flow from firms internally play a key role in financing new investment activities of firms and firms who have high level of debt tend to invest more in the future. Secondly, the interaction variable *Q*INFO* in both sub-groups is insignificant then I lack information to conclude about the role of stock price non-synchronicity to the sensitivity of investment to stock price.

2.4.3. Robustness checks

In this section, I check the robustness of my main result by: (1) using alternative methods to measure firm investment and (2) using different lagged year when calculating variables. The main purpose of this test is to check whether my results could be changed or not.

Investment estimated by alternative method.

Firstly, I check the robustness by applying alternative measures for firms' investment. In my main regression, I use annual capital expenditure as the proxy for investment. In this part, I use the total of tangible and intangible fixed assets as measurement for firms' investment. The *deltaI* is calculated by difference between total of tangible and intangible fixed asset in year t and 1 years lagged then scaled by market value in the begging of year t. *I* is calculated by total of tangible and intangible fixed asset in year t scaled by total assets of lagged 1 years. I re-estimate the change model and level model as equation (2) and the regression result for change model is shown in table 2.11 below:

[Insert table 2.11 about here]

In table 2.11, only fundamental and control variables are considered into regression in column 1 and 4, columns 2 and 5 add stock market performance (ret) variables into consideration while column 3 and 6 regress full variables of equation (2). I could see that the sign and significant status of all variables in this test are nearly identical with my main result. Specifically, the change in sale (*deltaSale*) and change in cash flow (*deltaCF*) have a significant positive impact on the change of firms' investment. The interaction variable *ret*INFO* and stock price informativeness (*INFO*) are significant too. It means that, in this case, the result does confirm the hypothesis that stock prices have relative to firms' investment behaviour and the role of private information that contain in stock price also has an impact on the sensitivity of firms' investment to stock price informativeness.

[Insert table 2.12 about here]

Applying the same technique for level model, the regression results are shown in table 2.12. I could see that almost all coefficients in this regression are significant at 1% confident level except for stock return variable (*Ret*), and they mostly follow the same pattern as those variables in my main regression which be shown in Table 3 and 4 above. Thus, I can provide the same conclusion with the level model. The only difference here is the *TobinQ* variable when its coefficient is significantly negative. It means that in this case, the investment opportunity does not play a positive role in guiding firms' investment and there are two possible explanations for this result: managers know all the information that contain in stock price or stock price do not have any useful information that managers could you in their investment decision. However, as overall,

I still conclude that my main findings are robust in the case of changing firm's investment measurement method.

Investment estimated by different lagged time.

In the second robustness check, I applied different lagged time in my main regression. As mentioned above, the investment lagged time in Vietnam come from 1 to 4 years base one capital and land clearance availability. I use 1-year lagged time in my main regression and in this part, I test different lagged time to see any change in results. I expect that there will be no major changes in the coefficient sign and significant status of the main variables. The results for change model are presented in table 2.13 below:

[Insert table 2.13 about here]

In table 2.13, columns from 1 to 6 illustrate the regression of equation (2) with all Vietnam listed firms in different lagged time: 2 years in 1st and 4th column, 3 years in 2nd and 5th column and 4 years in 3rd and 6th column. For full sample, as I expect, the significance of most major variables such as fundamental (including *deltaSale* and *deltaCF*), control variable (*inv_MV*), stock price informativeness (*INFO*) and interaction variable (*ret*INFO*) stay remain from 2 and 3 lagged years. Based on this result, I know that my main analysis is robust with different lagged time. When I consider the top 300 firms, almost all variables are insignificant. The reason could come from the fact that the observation dramatically drops because of lagged time. The loss of too many observations could have occurred bias result.

[Insert table 2.14 about here]

Table 2.14 follows the same above method, but I regress again my equation (2). The results show that except for the 2 lagged years in the full sample group, the coefficient of variables in other cases are mostly insignificant at 10% level. Consequently, 1-year lagged time seems to be the most appropriate in my analysis.

2.5. Conclusion

This study examines the role of the stock market on firm investment behaviour, how private information in stock prices and how financial constraint status would affect the sensitivity of investment to the stock price, using the dataset of Vietnamese listed firms during 2006–2022. This study also extends this relationship by considering the sub-sample of firm owner status and firm

size. By answering 2 hypotheses, I could conclude that (1) Stock market has its own role in guiding Vietnamese firms' investment. (2) Managers listen to the market to collect some unknown information and use it in their managerial decisions. Specifically, the sensitivity of investment to stock price will increase if it contains greater firm-specific return variations (3) Financial constraint has a clear impact on the sensitivity between stock price and firms' investment activities. The results are robust when I consider different lagged time in calculating variables or using different methods to measure firms' investment. The fundamental variables such as Sale, cash flow and leverage are all have significant positive impaction on investment behaviour of firm.

The paper suggests that the government should establish a better legal framework to improve the efficiency of the stock market in Vietnam. This is necessary because Vietnamese listed firms have weak growth opportunities and speculative traders have limited access to information about these firms. The government should also be more mindful of monetary policies that may negatively impact firm investment. Additionally, the study highlights the importance of properly functioning financial markets and efficient capital allocation. The paper also suggests further research on the valuation of insider information by investigating the effect of insider trading on the correlation between investment and stock price. Additionally, the study raises questions about the relationship between R-squared and the incorporation of information into stock prices, which has not been studied in less-developed markets such as Vietnam.

This study also raises a question concerning an information-related issue in Vietnamese listed firms. It suggests that the necessity of applying new method to estimate the amount of private that contain in stock prices are the effect of this amount of information to managerial behaviour in Vietnam context.

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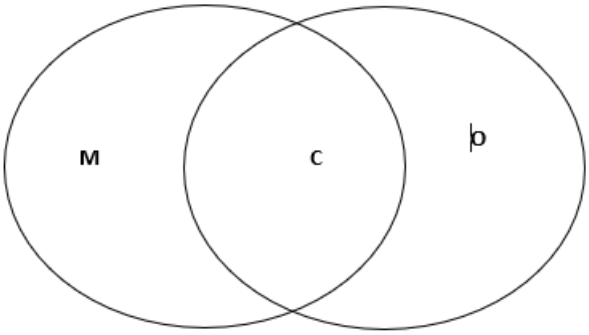

Figure 2.1: Information sharing between investors and managers.

Figure 2.1 displays the information shared between outside investors and firm managers. The information set of managers is M+C while the information set of investors is O+C. From managers perspectives, C is public information, M is managers' asymmetric information and O is investors' private information, and it is unknown by the managers.

Figure 2.2: Market value of top 300 firms and all listed companies

Figure 2.2 displays the market value in billion VND of the top 300 biggest firms and all listed companies (including 1307 firms in HNX, HoSE and UPCoM) over the period 2007 to 2020. The column chart presents all companies while the line chart shows the market value of top 300 (25%) companies. I choose top companies by sorting.

Table 2.1: Descriptive statistics

This table presents descriptive statistics. Panel A and B report the variables used in the change model and level model respectively. Panels C report descriptive statistics for financial constraint. All variables are in billion Vietnam Dong. The detailed definition and calculation of the variables are listed in Appendix 2.1 below.

Variable	N	Mean	SD	p5	p25	p50	p75	p95
Panel A: Change model								
deltaI	8411	0.167	0.346	0.000	0.010	0.044	0.151	0.433
Ret	8411	1.411	0.654	0.389	0.827	1.074	1.455	2.092
deltaSale	8411	0.270	0.711	-1.790	-0.150	0.077	0.512	1.625
deltaCF	8411	0.016	0.393	-0.497	-0.065	0.009	0.094	0.308
inv_MV	8411	0.011	0.018	0.001	0.0012	0.004	0.012	0.028
INFO	8411	1.371	2.670	-3.718	0.104	1.779	3.224	4.183
Panel B: Level model								
I	10699	0.052	0.083	0.000	0.004	0.020	0.062	0.145
Sale	10699	1.196	1.181	0.085	0.393	0.882	1.598	2.532
CF	10699	0.081	0.108	-0.065	0.018	0.067	0.132	0.210
inv_TA	10699	0.004	0.006	0.0001	0.0005	0.002	0.004	0.009
TobinQ	10696	1.093	0.520	0.561	0.831	0.972	1.176	1.615
Leverage	10659	0.250	0.229	0.001	0.044	0.209	0.397	0.567
Panel C: Financial Constraint								
KZ4	8720	363.078	175.151	-2.517	5.091	12.210	47.676	287.326
WW	10506	-0.933	0.234	-1.083	-0.989	-0.937	-0.887	-0.839

Table 2.2: Correlations between variables

Panel A of this table shows the Pearson correlation coefficient among the variable in the change model: the change in firms' investment (deltaI), firms' stock return (Ret), the change in firms' sale (deltaSale), the change in firms' cash flow (deltaCF), Inverse of market value (inv_MV) and stock price informativeness (INFO). Panel B of this table show the Pearson correlation coefficient among the variable in the level model: annual firm investment (I), Firms's sale (Sale), Firms' cash flow (CF), Tobin's Q index (TobinQ), inverse of total asset (1/TA) and firms' leverage (leverage) All of those variable are winsorized at the 1% and 99% of the distribution. Correlation is shown with * (*** significant at 1% level, ** 5% level, * 10% level).

Panel A: Change model						
Variable	*deltaI*	*Ret*	*deltaSale*	*deltaCF*	inv_MV	*INFO*
deltaI	1					
Ret	0.109***	1				
deltaSale	0.156***	-0.023**	1			
deltaCF	0.066***	-0.065***	0.160***	1		
inv_MV	0.156***	0.076***	0.071***	-0.013	1	
INFO	0.016	-0.038***	-0.026	0.008	0.281***	1

Panel B: Level model							
Variable	I	Sale	CF	inv_TA	TobinQ	Leverage	INFO
I	1						
Sale	0.131***	1					
CF	0.238***	0.199***	1				
inv_TA	0.061***	0.169***	0.049***	1			
TobinQ	0.048***	0.018***	0.231***	-0.035***	1		
Leverage	0.266***	0.059***	-0.139***	-0.202***	-0.084***	1	
INFO	-0.066***	-0.032***	-0.092***	0.207***	-0.256***	-0.05***	1

Table 2.3: Multicollinearity test with VIF

Table 2.3 reports multicollinearity test of all explanation variables. Panel A of this table shows VIF and inverse of VIF for all the variables in the change model: firms' stock return (Ret), the change in firms' sale (deltaSale), the change in firms' cash flow (deltaCF), Inverse of market value (inv_MV) and stock price informativeness (INFO). Panel B of this table shows VIF and inverse of VIF for all the variables in the level model: Firms's sale (Sale), Firms' cash flow (CF), Tobin's Q index (TobinQ), inverse of total asset (1/TA) and firms' leverage (Leverage)

Variable	VIF	$1/VIF$
Panel A: Change model		
Ret	1.06	0.943
deltaSale	1.04	0.964
deltaCF	1.04	0.963
inv_MV	2.4	0.416
INFO	1.21	0.828
Mean VIF	1.35	
Panel B: Level model		
Sale	1.15	0.873
CF	1.14	0.877
inv_TA	1.14	0.881
TobinQ	1.13	0.883
Leverage	1.09	0.914
INFO	1.09	0.916
Mean VIF	1.11	

Table 2.4: Influence of stock market performance on investment behavior: change model

This table reports estimation results from equation (1). Definition of all variables are shown in part A table 2.1. The dependent variable deltaI is shown as the change in firm investment between year t and lagged 1 year. Firm and year fixed effect are included, clustered standard error at firm level is applied in all regressions. Column 1 and 3 regresses the dependent variable on fundamental and control variables. In column 2 and 4, I include stock return (Ret) into consideration. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient is shown right below within (brake) symbol.

Variables	(1) Full sample	(2) Full sample	(3) Top 300 firms	(4) Top 300 firms
Ret		**0.006***** (3.61)		**0.005***** (2.7)
deltaSale	0.027*** (7.320)	0.027*** (7.59)	0.050** (2.280)	0.059*** (2.7)
deltaCF	0.041*** (2.870)	0.046*** (3.35)	-0.002 (-0.060)	0.022 (0.67)
inv_MV	2.41*** (4.670)	2.22*** (4.41)	17.102** (1.990)	3.606 (0.56)
Constant	0.145** (2.560)	0.135** (2.42)	0.174** (2.450)	0.177** (2.49)
Year effect	Yes	Yes	Yes	Yes
Firm effect	Yes	Yes	Yes	Yes
Adjusted R-squared	0.059	0.07	0.315	0.563
Observations	8411	8411	1762	1762

Table 2.5: Influence of stock market performance on investment behavior: level model

This table reports estimation results from equation (1). Definition of all variables are shown in part B table 2.1. The dependent variable I shown as the amount of firm investment in year t scaled to lagged 1 year of total asset. Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	(1) Full sample	(2) Full sample	(3) Top 300 firms	(4) Top 300 firms
TobinQ		**0.003**		**0.011****
		(0.9)		(2.15)
Sale	0.007***	0.007***	0.007	0.008
	(3.07)	(3.08)	(1.13)	(1.2)
CF	0.109***	0.109***	0.100***	0.097***
	(7.94)	(7.95)	(3.03)	(2.97)
Leverage	0.168***	0.168***	0.172***	0.175***
	(14.6)	(14.62)	(6.93)	(7.1)
inv_TA	1.782***	1.701***	6.722**	7.501***
	(2.91)	(2.92)	(2.35)	(2.62)
Constant	0.015	0.01	0.086	0.064
	(0.5)	(0.34)	(0.77)	(0.59)
Firm effect	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
Adjusted R-squared	0.386	0.386	0.497	0.499
Observations	10647	10647	2223	2223

Table 2.6: Price informativeness and the sensitivity of investment to price: change model

This table reports estimation results from equation (2). Definition of all variables are shown in part A table 2.1. The dependent variable deltaI is shown as the change in firm investment between year t and lagged 1 year. Column 1 regresses Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	(1) All firms	(2) Top 300 firms
Ret	**0.005***** (3.91)	**0.005***** (2.75)
Ret*INFO	**0.016***** (6.93)	**0.010**** (1.65)
INFO	-0.017*** (-6.31)	-0.008 (-1.39)
deltaSale	0.026*** (7.11)	0.059*** (2.73)
deltaCF	0.048*** (3.36)	0.017 (0.51)
inv_MV	1.828*** (3.56)	2.701 (0.44)
Constant	0.147** (1.52)	0.199*** (2.16)
	2.55	2.67
Year effect	Yes	Yes
Firm effect	Yes	Yes
Adjusted R-squared	0.319	0.118
Observations	7576	1748

Table 2.7: Price informativeness and the sensitivity of investment to price: level model

This table reports estimation results from equation (2). Definition of all variables are shown in part B table 2.1. The dependent variable *I* shown as the amount of firm investment in year t scaled to total asset in year t-1. Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	(1) Full sample	(2) Top 300 firms
TobinQ	0.004 (1.23)	0.01 (1.63)
Q*INFO	**0.0001***** (5.54)	**0.0001***** (5.07)
INFO	-0.001* (-1.77)	0.0001 (0.04)
Sale	0.007*** (2.92)	0.01 (1.08)
CF	0.118*** (7.57)	0.105*** (2.81)
Leverage	0.164*** (12.68)	0.148*** (5.6)
inv_TA	1.322* (1.85)	3.742*** (3.6)
Constant	0.021 (0.71)	0.088** (2.11)
Year Effect	Yes	Yes
Firm effect	Yes	Yes
Adjusted R-squared	0.394	0.486
Observations	8365	1759

Table 2.8: Financial constraint and the sensitivity of investment to price

Definition of all variables are shown in table 2.1. All variables are calculated with lagged 1 year. Firm and year fixed effect include: clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level.

	KZ4 index		WW index	
	(1)	(2)	(3)	(4)
deltaSale	0.040***		0.138	
	(4.55)		(0.58)	
deltaCF	0.071***		0.399***	
	(7.71)		(7.93)	
inv_MV	58.211***		30.871*	
	(3.29)		(1.86)	
Ret	0.117***		-0.965	
	(3.93)		(-1.3)	
Ret *KZ4	**0.0001***			
	(2.94)			
KZ4	-0.0001***	0.0001		
	(-2.84)	(0.07)		
Ret *WW			**-1.051**	
			(-1.41)	
WW			-8.289	-0.008
			(-1.4)	(-0.29)
Sale		0.010***		0.007***
		(2.71)		(3.02)
CF		0.046**		0.108***
		(2.23)		(7.75)
Leverage		0.009		0.168***
		(1.53)		(14.37)
TobinQ		0.0001***		-0.004
		(10.44)		(-0.29)
Q *WW				**-0.007**
				(-0.45)
Q *KZ4		**0.0001**		
		(-0.08)		
inv_TA		0.982		1.744***
		(0.06)		(2.9)
	-0.809***	0.157*	128.215	0.128
Constant	(-3.09)	(1.75)	(1.11)	(1.59)
Year Effect	Yes	Yes	Yes	Yes
Adjusted R-squared	0.529	0.402	0.128	0.386
Observations	7708	8698	9275	10504

Table 2.9: Regression results for the sub-samples of private firms and state-owned firms

Definition of all variables are shown in table 2.1. All variables are calculated with 1 lagged year. Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	Change model		Level model	
	(1) Private firms	(2) State-owned firms	(3) Private firms	(4) State-owned firms
deltaSale	0.030***	0.003		
	(7.28)	(0.34)		
deltaCF	0.058***	-0.008		
	(3.89)	(-0.23)		
inv_MV	1.622***	10.587*		
	(3.14)	(2.05)		
Ret	0.007	0.034		
	(1.13)	(1.42)		
Ret *INFO	**0.020*** **	**0.001**		
	(4.05)	(0.23)		
INFO	-0.023***	-0.006	-0.002*	-0.003
	(-4.3)	(-0.72)	(-1.94)	(-0.81)
Sale			0.007***	-0.025
			(2.77)	(-0.91)
CF			0.108***	0.092*
			(6.73)	(1.86)
Leverage			0.173***	-0.048
			(12.81)	(0.281)
TobinQ			-0.001	0.000
			(-0.32)	(0.000)
Q *INFO			**0.000**	**0.000**
			(0.23)	(-1.400)
inv_TA			0.922	17.214**
			(1.48)	(2.44)
Constant	0.135**	0.104	-0.002	0.013
	(2.43)	(1.45)	(-0.05)	(0.15)
Year Effect	Yes	Yes	Yes	Yes
Firm Effect	Yes	Yes	Yes	Yes
Adjusted R-squared	0.075	0.158	0.393	0.766
Observations	6249	236	6833	258

Table 2.10*: Regression results for the sub-samples of firm size*

Definition of all variables are shown in table 2.1. All variables are calculated with 1 lagged year. Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	Change model		Level model	
	(1) Biggest firms	(2) Smallest firms	(3) Biggest firms	(4) Smallest firms
deltaSale	0.056**	0.002		
	(2.14)	(0.12)		
deltaCF	-0.031	0.104		
	(-0.47)	(1.29)		
inv_MV	1.865***	1.122		
	(3.14)	(0.69)		
Ret	0.017***	-0.067		
	(4.37)	(-0.69)		
Ret *INFO	**-0.006***	**0.046****		
	(-1.97)	(2.19)		
INFO	0.008**	-0.039	-0.002	0.005
	(2.25)	(-1.1)	(-0.98)	(0.39)
Sale			-0.003	0.008
			(-0.33)	(0.55)
CF			0.251**	0.177**
			(2.5)	(2.23)
Leverage			0.155**	0.212*
			(2.61)	(1.74)
TobinQ			-0.038**	0.008
			(-2.3)	(0.16)
Q *INFO			**0.000**	**-0.006**
			(0.47)	(-0.68)
inv_TA			0.956	17.622**
			(1.48)	(2.44)
Constant	0.098***	0.122*	0.042*	0.121
	(4.98)	(1.86)	(1.96)	(1.39)
Year Effect	Yes	Yes	Yes	Yes
Firm Effect	Yes	Yes	Yes	Yes
Adjusted R-squared	0.254	0.017	0.677	0.464
Observations	151	163	150	171

Table 2.11: Stock market informativeness and firms' investment: alternative measurement and change model

This table reports estimation results from equation (6). Definition of all variables are shown in part A table 2.1. The dependent variable *deltaI* shown as the change in firm investment between year t and 1 lagged year. Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	(1) All firms	(2) All firms	(3) All firms	(4) Top 300 firms	(5) Top 300 firms	(6) Top 300 firms
Ret		**0.003** (0.9)	**0.001** (0.48)		**0.001** (0.18)	**0.000** (-0.07)
Ret *INFO			**0.033***** (9.55)			**0.032***** (3.76)
INFO			-0.040*** (-10.86)			-0.033*** (-3.73)
deltaSale	0.053*** (10.94)	0.053*** (11.02)	0.050*** (10.48)	0.115*** (4.43)	0.116*** (4.55)	0.119*** (4.72)
deltaCF	0.137*** (7.07)	0.139*** (7.26)	0.142*** (7.22)	0.224*** (3.23)	0.226*** (3.5)	0.211*** (3.23)
inv_MV	23.124 (0.5)	14.802 (0.3)	-32.051 (-0.77)	12.414** (1.99)	10.299** (2.11)	8.412* (1.83)
Constant	0.152** (2.35)	0.232* (1.16)	0.173** (2.34)	-0.035 (-1.34)	-0.035 (-1.33)	0.034 (1.26)
Year effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.108	0.11	0.149	0.202	0.202	0.237
Observations	7669	7669	7576	1736	1736	1722

Table 2.12: Stock market informativeness and firms' investment: alternative measurement and level model

This table reports estimation results from equation (7). Definition of all variables are shown in part A table 2.1. The dependent variable *I* shown as the change in firm investment between year t and lagged year from 1 to 3. Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	(1) All firms	(2) All firms	(3) All firms	(4) Top 300 firms	(5) Top 300 firms	(6) Top 300 firms
TobinQ		**-0.072***** (-7.98)	**-0.082***** (-7.29)		**-0.044***** (-3.06)	**-0.047***** (-2.61)
INFO			-0.013*** (-5.77)			-0.011** (-2.33)
Q *INFO			**0.001**** (2.51)			**0.001**** (2.3)
Leverage	0.263*** (6.83)	-0.076*** (-3.21)	-0.079*** (-3.39)	-0.091* (-1.9)	-0.105** (-2.2)	-0.136** (-2.56)
Sale	0.007 (1.54)	0.070*** (9.39)	0.069*** (9.42)	0.062*** (2.8)	0.060*** (2.74)	0.085*** (3.97)
CF	0.168*** (5.63)	0.302*** (8.43)	0.325*** (8.14)	0.630*** (6.29)	0.642*** (6.46)	0.599*** (5.45)
inv_TA	3.324*** (3.07)	9.274*** (2.98)	8.422** (2.11)	18.017 (1.52)	15.024 (1.24)	14.147 (1.63)
Constant	0.731*** (2.44)	0.652*** (3.86)	0.620*** (11.44)	0.984*** (5.86)	1.071*** (5.92)	0.725*** (6.76)
Year effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.285	0.758	0.787	0.772	0.775	0.806
Observations	9832	9832	7746	2199	2199	1742

Table 2.13: Stock market informativeness and firms' investment: different lagged time and change model

This table reports estimation results from equation (1). Definition of all variables are shown in part A table 2.1. The dependent variable *deltaI* shown as the change in capital expenditure between year t and year lagged from 2 to 4. Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	Full sample			Top 300 firms		
	lagged 2 years	lagged 3 years	lagged 4 years	lagged 2 years	lagged 3 years	lagged 4 years
Ret	0.011	0.005	0.008	0.006	0.003	0.039**
	(1.43)	(0.87)	(0.82)	(1.37)	(1.44)	(2.57)
INFO	-0.012***	-0.014**	0.008	0.005	0.009	0.011
	(-3.1)	(-2.3)	(1.03)	(1.09)	(0.83)	(1.11)
Ret *INFO	0.008***	0.007*	-0.006	-0.002	-0.003	-0.01
	(2.7)	(1.71)	(-1.33)	(-0.49)	(-0.36)	(-1.56)
deltaSale	0.026***	0.024***	0.035***	0.047**	0.037*	0.017
	(6.25)	(4.29)	(4.26)	(2.57)	(1.91)	(1.18)
deltaCF	0.099***	0.128***	0.142***	0.193**	0.255	0.047
	(4.56)	(3.65)	(3.13)	(2.28)	(1.63)	(0.62)
inv_MV	2.178***	2.085**	2.201	-5.502	-6.206	47.155
	(2.8)	(1.97)	(1.6)	(-0.01)	(-0.49)	(0.69)
Constant	0.084**	0.072	0.374**	0.023	-0.03	0.414*
	(2.01)	(0.85)	(2.41)	(1.33)	(-0.61)	(1.75)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.115	0.132	0.195	0.135	0.179	0.4
Observations	5797	3227	1202	1265	710	293

Table 2.14: Stock market informativeness and firms' investment: different lagged time and level model

This table reports estimation results from equation (7). Definition of all variables are shown in part B table 2.1. The dependent variable I shown as the amount of firm investment in year t scaled to lagged n year of total asset with n from 2 to 4. Firm and year fixed effect; clustered standard error at firm level is applied in all regressions. Coefficients are shown with * (*** significant at 1% level, ** 5% level, * 10% level). The t-statistics of each coefficient are shown right below within (brake) symbol.

Variables	Full sample			Top 300 firms		
	lagged 2 years	lagged 3 years	lagged 4 years	lagged 2 years	lagged 3 years	lagged 4 years
TobinQ	0.008*	0.013	0.005	0.007	0.001	-0.005
	(1.65)	(1.51)	(0.35)	(0.86)	(0.04)	(-0.37)
INFO	-0.002*	-0.0025	-0.0022	-0.0021	0.0001	0.005
	(-1.66)	(-1.04)	(0.68)	(-0.52)	(0.09)	(1.21)
Q *INFO	0.001	0.001	0	0.001	-0.001	-0.001
	(0.69)	(0.75)	(0.1)	(0.75)	(-0.6)	(-0.28)
Sale	0.009***	0.013***	0.017**	0.01	-0.047*	-0.064**
	(2.68)	(2.76)	(1.99)	(1.02)	(-1.73)	(-2.06)
CF	0.145***	0.128***	-0.017	0.155***	-0.009	-0.158
	(6.99)	(4.08)	(-0.4)	(3.06)	(-0.1)	(-1.11)
Leverage	0.114***	0.048**	0.056***	0.075***	0.055***	0.046***
	(5.57)	(2.47)	(4.09)	(3.45)	(3.2)	(4.9)
inv_TA	2.577***	2.801	4.722	-2.772	-13.166***	35.582
	(2.62)	(0.66)	(0.66)	(-0.21)	(-5.61)	(1.13)
Constant	0.021	-0.004	-0.001	0.039	0.095***	0.135***
	(0.65)	(-0.14)	(-0.02)	(0.88)	(3.32)	(2.69)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.432	0.443	0.539	0.503	0.526	0.647
Observations	6935	4004	1719	1493	866	394

Appendix 2.1: Definition of the variables

Variable	Definition	Measurement	Sources
Part* A*: Change model			
deltaI	Firm investment growth (measure by capital expenditure) between year t and 1 lagged year	$\frac{I_t - I_{t-1}}{\text{Market Value of stock share}_{t-1}}$	Datastream
deltaCF	Difference in cash flow between year t and 1 lagged year	$\frac{CF_t - C\_F_{t-1}}{\text{Market Value of stock share}_{t-1}}$	Datastream
deltaSale	Difference in sale between year t and n lagged year	$\frac{S_t - S_{t-n}}{\text{Market Value of stock share}_{t-1}}$	Datastream
Ret	Firms' stock market return	$\frac{\text{Market Value of stock share}_t}{\text{Market Value of stock share}_{t-1}}$	Datastream
INFO	Stock price informativeness	$\ln\left(\frac{1-R^2}{R^2}\right)$	Datastream
inv_MV	Inverse of market value	$\frac{1}{\text{Market Value of stock share}}$	Datastream
Part B:Level model			
I	Yearly firm investment (measure by capital expenditure) between year t and 1 lagged year	$\frac{\text{capital expenditure}_t}{\text{Total Asset}_{t-1}}$	Datastream
CF	Cash flow	$\frac{\text{Net Profit} + \text{Depriciation Expense}_t}{\text{Total Asset}_{t-1}}$	Datastream
Sale	Sale	$\frac{\text{Sale}_t}{\text{Total Asset}_{t-1}}$	Datastream
Leverage	Leverage	$\frac{\text{Long term debt}}{\text{Total Asset}_{t-1}}$	Datastream
TobinQ	Tobin's Q ratio	$\frac{\text{Maket Value}_t}{\text{Total Asset}_t}$	Datastream
inv_TA	Inverse of total asset	$\frac{1}{\text{Total Asset}_{t-1}}$	Datastream
Part C: Financial Constraint Measurement			
WW	WW index	$WW_{it} = -0.091 * CF_{it} - 0.062 * DIVPOS_{it} + 0.021 * TLTD_{it} - 0.044 * LNTA_{it} + 0.102 * ISG_{it} - 0.035 * SG_{it}$	Datastream
KZ4	KZ4 index	$KZ4_{it} = -\frac{1.002C\_F_{it}}{A_{it-1}} - \frac{39.368DIV_{it}}{A_{it-1}} - \frac{1.315C_{it}}{A_{it-1}} + 3.139LEV_{it}$	Datastream

CHAPTER 3
THE NEXUS BETWEEN MARKET SIGNALS AND MANAGERS' BEHAVIOUR: EMPIRICAL EVIDENCE FROM MERGERS AND ACQUISITIONS IN VIETNAM

Abstract

This study examines the effects of market signals on managerial decisions during mergers and acquisitions (M&As) in Vietnam, focusing on the relationships between market reactions to M&A announcements, the stock price informativeness of the acquirer, and the role of M&A experience in deal completions. Using a dataset of 440 M&A cases from 2008 to 2022, I reveal that market reactions are generally associated with deal completions. However, the impact of stock price informativeness is more complex, varying based on the nature of the acquirer's initial market perception. Furthermore, M&A experience significantly enhances managerial capabilities, positively influencing future deal outcomes by providing valuable learning opportunities from past successes and failures. In conclusion, my research underscores the need to enhance the transparency and efficiency of Vietnam's stock market.

Keywords: Market signal, cumulative abnormal return, stock price informativeness, Mergers and Acquisitions, event study, learning hypothesis.

JEL Codes: G14, G11, G34

3.1. Introduction

Mergers and Acquisitions (M&A) have become very popular for the corporate growth strategy over the last few decades whether mergers increase the shareholder value for the company that undertaken them (Betton et al., 2008; Alexandridis et al., 2017; Ouyang and Szewczyk, 2018; Chen and Doukas, 2022). On the contrary, mergers have some disadvantages as well such as it can hamper shareholder value, operating bigger businesses can be problematic, and between acquirers and targets synergy might be overestimated by the managers, as a result, they need to pay extra for the target firm (Adnan et al., 2016). In finance, M&A is one of the most researched areas, yet some basic issues remain unsolved. The primary objective of my study is to reveal the relationship between market signals and the behaviour of managers in the M&A field. Specifically, I want to answer two research questions: *(1) To what extent does market reaction to M&A announcement could affect to the completion of M&A deal in Vietnam. (2) Does stock price informativeness mediate the impact of market reactions on M&A completion in Vietnam, or do regulatory gaps and information asymmetry diminish the credibility of price signals as a learning tool for managers?*

I have chosen to examine corporate mergers and acquisitions (M&As) as they provide a suitable context for my investigation for several reasons. Firstly, M&A transactions often involve substantial corporate investments and can be observed externally (Eccles and Crane, 1987). Secondly, management retains considerable control over these investments, with the ability to complete, terminate, or modify the proposed deal (Bebchuk, 2004). Additionally, due to the extensive prior research conducted on M&As, I can draw upon a wealth of literature to establish benchmarks and identify relevant control variables. This aspect is particularly crucial in my study as I aim to isolate whether managers considered the market's reaction when making their decisions. To achieve this, it is essential to control for ex-ante factors that are known both by the market and the managers themselves, which can influence the likelihood of the investment being executed.

Vietnam presents a unique setting for studying the feedback effect of stock market on M&A outcome for several reasons. Firstly, Vietnam is a regional economic with a population of 100 million and a projected average GDP growth rate of 5.6% until 2020 (OECD, 2021), has made significant strides in its economic development. Since its accession to ASEAN in 1995, followed by membership in the World Trade Organization in 2007 and its involvement in the

Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), Vietnam has undertaken substantial efforts to enhance its regulatory framework and market institutions, aiming for a comprehensive transition to a market-oriented economy. This progress has contributed to a substantial surge in M&A activities within the country, with an impressive average annual growth rate of 65% in recent years (Vietnam Investment Review, 2021). All of these conditions help creating an environment where the stock market may react more sensitively to corporate events like M&A, influencing corporate decisions and strategies and providing a clear vision for feedback effect in stock market. Secondly, the Vietnam stock market is still dominant by individual investor whose decision are more speculative and emotional in their reaction to M&A news than institutional investors. Thus, the feedback from market to stock price could be more volatile and immediate. This phenomenon creates an interesting case study for research about how the stock price movement around specific event could lead to the change in managers' behaviour. Thirdly, the ongoing privatization of state-owned enterprises (SOEs) in Vietnam provides a unique context for studying M&A. Market often react more strongly for deals related to SOEs and the success of privatization is closely linked to stock market performance. It creates a feedback loop between market reaction and M&A deals, help shaping how these deals are structured and completed. Fourthly, the completed rate of M&A deals in Vietnam is about 70%, this value is similar to other Asia countries (Indonesia, Malaysia, Philippines, Singapore, Thailand) but it is significantly lower than western countries (France, Germany, Italy, Netherlands, UK and US) (see Fig. 3.1). The reason for this phenomenon might come from the fact that: (1) the regulatory framework of M&A activities in westerner countries are more transparent and stable than most of Asian countries (2) the different in culture since westerner prefer straightforward negotiations and it helps better handling problems and (3) the dual role of government in many Asian countries (both governance and participant) might delay or block deals that related to SOEs or sensitive sectors.

My investigation considers a sample of 440 M&A cases in Vietnam, extracted from the Thomson-SDC database, covering the period from 2008 to 2022. I start with the question of how market signals could affect managers' decisions in M&A deals. Particularly, my focus is specifically on M&A announcement activity that is deemed significant from the firm's standpoint, as only such investments will have a substantial impact on stock prices that can be identified through an event study methodology. On one hand, managers may be better informed about the real situations of their firms than outside investors but on the other hand, market participants,

including stock analysts and investors could be better positioned than those insiders of the merging firms to analyse the international, macroeconomic and industry issues that could affect to the M&A deals (Luo, 2005, Kau et al, 2008). Moreover, they could independently detect errors and omissions of the insider. In this research, I consider two channels in which market could affect manager response in M&A activities : (i) directly learning through the market signal when it suggests that managers will consider the market's reaction to adjust their behaviours or through experiences that be gained from previous M&A deal (Beckman et al., 2002; Han et al., 2016; Zhou et al., 2022) and (ii) indirectly learning through the role of stock price informativeness when it suggests that managers could extract private information from stock price and apply that information in making a final investment decision (Luo, 2005; Kau et al., 2008; Dow et al., 2017).

For the first question, stock price movement possess a dual role, reflecting not only the fundamental value of a company but also functioning as signals or indications of underlying information (Wu et al., 2016; Tanna et al., 2021). Spence (2002) claimed that information about events is spread asymmetrically whereas one party has access to more information about events than the other party. Thus, although there is a lot of information available for both parties, there exists an impasse between what is known and what could be constructed by new signals (Yasar et al., 2020). Within this framework, stock prices are viewed as conveying valuable information to market participants that extends beyond the explicit details provided in financial reports or other conventional sources. Changes in stock prices are regarded as signals that encapsulate market sentiment, investor perceptions, and expectations about the prospects of the company. Market participants interpret these price signals to guide their investment decisions or to gain insights into broader market conditions: (1) Positive reaction suggests that investors perceive the M&A deal as value-enhancing and beneficial for both companies involved. It indicates optimism about potential synergies, increased market share, improved profitability, or other positive outcomes. (2) Negative reaction could be understood as the decline of stock prices for either or both companies involved in the M&A announcement. A negative market reaction can occur if investors perceive the deal as overvalued, risky, or detrimental to shareholder value. Previous research suggests that the stock market reactions to merger or acquisition announcements, in turn, can influence merging firms' management decisions when it comes to the deal negotiations and the eventual closing of the deal, although the findings are inconclusive (Jennings and Mazzeo, 1993; Luo, 2005; Kau et al., 2008; Tanna et al., 2021). To answer the first research question, I apply event study and assess stock

movement. I calculate the cumulative abnormal return (*CAR*) of 5 days around announcement date and regress the completion of deals on *CAR*, firms and deal characteristics and some interaction variables between them. The univariate test show that stock market reaction is more intense with control deals if these deals are small, or target firm are private, or form of bid are merger or deal are paid by cash. These results are consistent with multivariate analysis at some points. For learning hypothesis, I expect the probability to be completed should be greater for deal with higher *CAR*. However, the result does not confirm the learning hypothesis. Specifically, I find that there is a significant negative between cumulative abnormal return and the completion probability of M&A deals. This result suggests that higher cumulative abnormal returns lead to a lower likelihood of deal completion. This might indicate that market perceive high CAR with scepticism, potentially due to concerns over the acquirer's ability to realize projected synergies. Although unable to confirm first hypothesis, I still can state that the market reaction to M&A deals play a significant role on the completion of those deals. The explanation for this phenomenon comes from the role of Government's orientation toward the market. Although the number of those kind of deals are minority, but it could be remarkable reason.

I continue by studying the information consequences in financial markets in response to M&A announcements. I start by consider the influence of market reaction to M&A announcement on the change in acquirers' stock price informativeness. Univariate test illustrates that the amount of firm-specific variation within stock price will increase (represented by the change in stock price informativeness of acquirer firms) with the growth of market reaction to M&A news. For multivariate analysis, I directly regress the cumulative abnormal return (*CAR*) and other control variables on the difference of stock price informativeness from after and before the M&A announcement. I go further by examining the effects of strong acquirer *CAR* (by choosing the value of *CAR* that is higher than the 75^{th} percentile or lower than 25^{th} percentile) on the dependent variable. The result shows that the coefficient of moderate *CAR* is positive but not significant in most models, except for control. This indicates that for subsample of control deals, higher abnormal returns are associated with an increase in stock price informativeness post-M&A, possibly due to heightened market interest. This sign is similar when I consider the strong *CAR*. However, the coefficient of strong acquirer *CAR* on the post-announcement acquirers' stock price informativeness is insignificant. I expand my analysis by focusing on the listing status of target firms. The result witnesses a negative relation between *CAR* and change in acquirer stock price

informativeness. It suggests that higher cumulative abnormal returns over the 2-day window are associated with a substantial decrease in stock price informativeness post-M&A. For the learning hypothesis, I expect that high acquirer CAR in the announcement period triggers an increase in the post-announcement price informativeness of the acquirer's shares when the marginal gains from information search and acquisition are relatively high and the increase in stock price informativeness is attributed to the improved prospects of the deal's completion. The empirical result show that it is lack of evidence to confirm the role of stock price informativeness on the relationship between market reaction and completion status of M&A deals then the learning hypothesis in this case is still unconfirmed. However, those M&A deals which receive little attention (low level of market reaction) but the feedback from market on stock price when news about deal announcement is positive could lead to better chance of successful completion.

I extend my analysis by highlighting the status of target firm[12] on the relationship between market reaction to M&A news and the change in stock price informativeness of acquirers. The idea comes from the fact that the availability of information that relates to private and subsidiary firms are far fewer than the public firms (Adra and Barbopoulos, 2019), leading to the increase in information searching cost of investors. It creates a barrier and reduce the interest of investors in finding about M&A deals then. However, I find a contrast result with my expectations. Specifically, the positive impact of *CAR* on the change of stock price informativeness for deals relate to private and subsidiary firms are bigger than public target firms. It means that despite that the cost for collecting information about M&A deals of private and subsidiary firms are relatively high, but it brings more benefits for investors then it increases the amount of information within stock price of acquirer firms. I next consider the role M&A experience on the completion of future deals. The idea is that manager can gain experiences from previous deals (both success and failure ones). The results suggest that Vietnamese managers learn from failure experience, gain knowledge, and applied it on future deal to improve the M&A completion. The interaction between M&A experience and relative deal size also concludes that the positive impact of overcoming past

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[12] The status of target firms relates to the different types of business entities based on the ownership, structure and regulatory obligations. The public firm is a company whose shares are available and be traded on a stock market. The private firm is a company that is not listed on a stock exchange. The subsidiary firm is a company that is owned or controlled by another company, known as the parent company.

failures on deal completion is more pronounced for larger relative deal sizes, emphasizing the value of resilience and learning from past experiences in managing substantial acquisitions. I further expand my analysis by examining the extent to which the relative deal size varies with stock price informativeness and some firm characteristic. The idea is that I consider M&A deal as an investment of firm, and I want to evaluate the role of stock price informativeness on the sensitivity of deal value to stock price. The empirical shows that the amount of private information within stock price does not play any role in the sensitivity of deal size to price but it increases the sensitivity of deal size to market reaction. This result is consistent with the previous paper of Chen et al. (2007). I also consider how the owned status of the firm (state owned firms and family firms) could affect the completion of M&A deal. The idea for this test come from the specific of Vietnam. The first companies listed on the Vietnamese stock exchange were mainly state-owned enterprises or family-owned businesses. These companies played a crucial role in shaping the development of Vietnam's financial market. After more than 20 years of development, although the role of state-owned and family-owned enterprises no longer holds a dominant position, their influence on the market remains significant (Hoang and Oh, 2023). This paper points out that when state-owned enterprises engage in M&A deals, they tend to follow the government's intentions instead of the market's signals. Thus, SOE does not significantly influence the likelihood of deal completion. In the other hand, On the other hand, being a family business has a negative impact on the ability to complete an M&A deal because of the fear of takeover and resistance to external control.

The main contribution of this paper is the investigation of the nexus between market signals to managers' behaviour by looking at the learning hypothesis in various perspectives (through market signal, mediating role of stock price informativeness and M&A experience), as well as considering the characteristics of deals, firms. Prior literature has investigated managerial learning during M&A from the stock market (Luo et al., 2005; Kau et al., 2008) and there is research that investigates the influence of stock price informativeness on the relationship between stock returns and corporate investment (Chen et al., 2007; Adra and Barbopoulos, 2023). Although Kau et al. (2008) did already hint towards the potential influence of stock price informativeness on managerial learning from the stock market in M&A deals, research that incorporates this stock price informativeness, as done in this paper is hard to find. Most empirical result in this paper denies my theoretical prediction that builds on a Western theory concerning the role of market reaction or firm-specific variation on the completion of M&A deals. The possible for that

phenomenon could come from lack of specific regulatory of merger and acquisition and the role of government on guiding some M&A deals.

The rest of the paper is organized as follows: in section 2, research hypothesis and review literature are developed based on the hypothesis. In section 3, I explain my empirical method as well as data source. Section 4 provides the main results and finally, in section 5 I conclude and provide some implications.

3.2. Literature Review and hypothesis development

In this paper, I intend to reveal the question of how managers could learn from the market during M&A activities in Vietnam. The idea that decision-makers learn new information from secondary markets can be traced back to Hayek (1945), and Dow and Gorton (1997) who have theoretically shown that this notion applies well to corporate decisions. Capital market price contains information such as investment opportunity, potential risk, etc that is not otherwise known to managers and they often consider market reactions as an important factor when contemplating M&A activities (Luo, 2005; Vega, 2006; Kau et al., 2008; Adra and Barbopoulos, 2023). Merge and Acquisition was considered as an unusual investment activity of firms (Han et al. ,2016) and the motivation of this activity could come from performance expectations. Organization-level learning is part of the M&A process that organizations conduct (Vermeulen and Barkema, 2001). Learning theory emphasizes two types of learning, namely, indirect and direct (Han et al., 2016). Organizations indirectly learn by observing other organizations' routines or behaviours and, as a result, imitation occurs (DiMaggio and Powell, 1983). Direct learning, on the other hand, refers to the situation where a firm or organization learns through its own experience (Cai and Zhou, 2022). Moreover, Nelson and Winter (1982) insisted that organizations tend to utilize existing accumulated knowledge when confronted with high uncertainty because experience and knowledge provide information and evidence that significantly reduces the range of uncertainty. Because organizations utilize existing knowledge, their chance of repeatedly engaging in path-dependent decision-making increases.

3.2.1. Stock market reaction to M&A announcement and deal completion.

The first hypothesis aims to clarify the relationship between stock market reaction and the completion of M&A deals. Does the manager consider market reaction as essential factor for their

decision and learn from market? The mechanism for this relationship come from the expectation of market to the future performance of acquisition. Specifically, the market's response to such announcements provides valuable insights into how investors perceive the potential impact of the deal on the involved companies and the overall market (Cao et al., 2022). Managers closely monitor the stock price movements of both the acquiring and target companies following an M&A announcement. A positive market reaction, showing confidence in the strategic rationale and potential synergies of the merger or acquisition, can improve the chances of successful completion (Kau et al., 2008). This positive market reaction may lead to increased shareholder support, reduced regulatory scrutiny, and improved financing conditions, all of which contribute to the deal's completion. In the other hand, a negative market reaction, reflecting scepticism or concern about the deal's impact, can pose obstacles that hinder completion. Such a response trigger shareholder opposition, regulatory obstacles, difficulties in securing financing, and even legal challenges, which could ultimately derail the deal (Bonaime et al., 2018). Therefore, the market's reaction to the M&A announcement serves as a crucial gauge of investor sentiment, significantly influencing the decision-making process for both acquirers and targets regarding the deal's completion. The study tests this prediction by examining how the market's initial response to a particular M&A announcement, represented by the acquirer's Cumulative Abnormal Returns (CAR) around the announcement date, influences various proxies of informed trading in the acquiring firm's shares during the post-announcement period. I refer this hypothesis as the “learning from stock market reaction”.

A lot of previous research point out that they should learn, and they must learn from market reaction when providing M&A decisions. Firstly, managers should learn from market reaction because of several reasons: public information in the price mechanism could be better processed by market than individual according to efficient market hypothesis (Han et al., 2016). Professional market analysts from financial institution such as bank, credit unions, brokerage firms or insurance companies are better than manager in M&A deals in-depth analysing. Moreover, M&A is complex issue because it engages to the major change in strategic goals and ambitions of both acquirer and target firms then insider requires more response from outsider when processing deal (Bower, 2001; Capron et al., 2007). Secondly, manager need to learn from market because it could help prevent cognitive bias (Chira et al., 2017). Over-confidence or under-confidence from managers about future of deals could lead to the vicious failure. Multi-dimension analysis from outside participant

could provide broader view about success potential of deals in the future. Thus, market could be more reliable than managers from acquirer and target firm alone. Moreover, the compensation of top corporate managers is based on the future performance of firms. Poor performance after dealing M&A might significantly reduce the firm value of acquirers (Cao et al., 2022) and increasing likelihood of CEO turnovers (Field and Mkrtchyan, 2017). Making the wrong M&A decision could not only harm their current position (resulting in job loss) but also impact their future career prospects. Therefore, managers need to exercise extreme caution in assessing all uncertainties that may affect the outcome of M&A transactions. Considering market reactions is essential to minimize the risk of M&A failure because by listening to the market, managers could have better understanding about potential risk of deals then it could lead to better outcomes in the future. To sum up, market reaction to M&A announcements could provide vital signal to managers to improve their decision-making. Many empirical studies confirm this problem.

While most researchers emphasize the role of stock reaction to M&A announcement on managers' behaviour (Kau et al., 2008; Bauer et al., 2018; Aalbers et al., 2021). Specifically, Luo (2005) points out that merging firms extract information from market reaction and later consider it in closing the deal. A positive market reaction, reflected in an increase in stock prices, suggests that investors view the deal favourably, indicating potential value creation and synergies. Conversely, a negative market reaction, with declining stock prices, may indicate concerns about the deal's feasibility, potential dilution, or adverse effects on shareholder value and could lead to the withdrawal of M&A deals. This result is tested by Kau et al. (2008) when they state that managers will listen to the market whenever the market reacts unfavourably to the M&A announcement.

Hypothesis 1: The higher the announcement period CAR, the more likely the deal will be completed.

3.2.2. The information consequences of M&A deals

I refer to the hypothesis that an M&A announcement adjusts managerial decisions by affecting the stock price informativeness for managers as the "learning from private information". Stock return non-synchronicity is indeed a useful measure for capturing the amount of firm-specific return variation that is not otherwise known to managers (Chen et al, 2007). Going beyond simply looking at the potential predictive power of the expected information contained in stock

price on the deal completion probability. Specifically, the “learning from private information” hypothesis suggests that stock prices exhibit a gradual adjustment pattern as investors incorporate new information and revise their expectations accordingly.

The second hypothesis emphasize the role of stock price informativeness on the completion of M&A deals. Various previous research clarified the relationship between the amount of private information and the firms’ investment behaviour. For examples, managers can infer the prospects of investment opportunities from the private information in stock prices and use it to improve the efficiency of corporate investment decisions (Dow and Gorton,1997; Bakke and Whited, 2010) or stock price informativeness could increase the sensitivity of investment to stock price (Chen et al., 2007; Foucault and Fresard, 2012, 2014; Xu, 2021). This study aims to empirically test theoretical predictions from the information production literature by examining the impact of M&A on the acquiring firm's stock price informativeness during the post-announcement period. The stock price informativeness may affect to completion of deals in several ways. Directly, firm-specific return variation could be used as measurement for stock price informativeness because it reflects the amount of firm-specific information that is not explained by market or industry (Chen et al., 2007). Higher level of stock price informativeness indicates that the acquirer’s stock price reflects more firm-specific information. This can reduce information asymmetry between the acquirer and the target, making the target more comfortable with the deal as they have better insights into the acquirer’s value and prospects (Chira et al., 2017) or due diligences can be more straightforward, potentially facilitating smoother negotiations between the acquirer and target (Aalbers et al., 2021). Indirectly, the informativeness of the acquirer's stock price may mediate the relationship between the market reaction to the M&A announcement and the completion of the deals (Adra and Barbopoulos, 2023).

In the M&A field, the learning process typically plays out in following steps: Firstly, when a company announces its intention to merge with or acquire another company, its stock price usually reacts immediately. This reaction can be positive or negative depending on how investors perceive the benefits, costs and risks associated with the proposed deal. Adra and Barbopoulos (2023) suggests that the level of stock price informativeness of acquirers before M&A deal can significantly influence the stock price informativeness in the post-announcements. Specifically, the low level of informativeness indicates that the stock price reflects the lack of accurate information about the firm’s current status and future prospects. Thus, it will leave a significant

room for equity investors to expand resources on information-based trading. By contrast, when the level of pre-announcement price informativeness is relatively high, there is a limited incentive for further information search and acquisition, which alienates information-seeking investors. Secondly, executives and board members of the firms involved in the M&A deals can learn from change in stock price informativeness and market reaction. Particularly, a positive market response might reinforce the decision to proceed with the deal and the increasing in stock price (Vega, 2006; Ouyang and Szewczyk, 2018) and when stock prices are more informative, they better capture relevant information, leading to more efficient capital allocation and better investment decisions (Dow et al., 2017).

I expect that high acquirer CAR in the announcement period triggers an increase in the post-announcement price informativeness of the acquirer's shares when the marginal gains from information search and acquisition are relatively high and the increase in stock price informativeness is attributed to the improved prospects of the deal's completion. The study specifically tests the predictions of Dow et al. (2017) model in the context of M&As. They argue that M&As, which are challenging in terms of valuation and information requirements, offer a direct way to test their model's predictions because of their significant impact on stock returns. They predict that the price informativeness of the acquiring firm's stock after the announcement of the M&A will be higher if the market reaction to the announcement is more positive. Previous research of Dow et al. (2017), Adra and Barbopoulos (2023) show that an increase in price informativeness in response to positive reaction of market to M&A announcements if their level of pre-announcement stock price informativeness is lower than its standard deviation. The idea for this statement is that when the level of acquirers' stock price informativeness in pre-M&A period is low, it could leave a space for investors to use their efforts to seek the information about deals and related firms and vice versa. Thus, I expect that high acquirer CAR in the announcement period triggers an increase in the post-announcement price informativeness of the acquirer's shares when the marginal gains from information search and acquisition are relatively high. For the target firms' listing status, the public information of private and subsidiary firms is very unpopular, there is no regulatory requirement for them to public their information then the fixed cost of information search is noticeably high. Thus, it could reduce the market reaction to those kinds of deals.

Hypothesis 2: The increase in stock price informativeness and positive market reaction on M&A announcement are attributed to the improved prospects of the deal's completion.

3.3. Data and Empirical Methods

3.3.1. Data sources

3.3.1.1. Mergers and Acquisitions dataset

The list of announcements of acquisitions of Vietnam firms during the period from January 2008 to October 2022 was obtained from the Thomson Reuters database. I identified 4,143 M&A announcements for 14 years. The sample was screened to ensure that the acquirer firm had a daily stock price available for at least 100 trading days period and 2 trading days around the announcement date. Acquisitions in different days or years of the shares of the same company were considered separate events if an estimation and event windows did not overlap. It worth to notice that the currency in this database is USD, and I convert from USD to VND base on average exchange rate for each year from 2008 to 2022. The data for exchange rate is collected by State Bank of Vietnam.

3.3.1.2. Other data sources

The data in this research was collected from Datastream through Eikon software. Specifically, the data about comprehensive market and corporate financial indicators and accounting data of Vietnamese firms are from Worldscope (access via Datastream). All databases are merged by Datastream code.

3.3.1.3. Sample construction

I impose the following conventional restrictions on the sample:

1. The acquirer companies must be Vietnamese firms.
2. The acquirer companies must be listed on HNX and HOSE and have a Datastream Code.
3. The acquirer is a public listed firm.
4. The target is a private, public, or subsidiary firm.
5. If the announcement date happens on the following special days such as Labor Day, The Independent Day or other public holiday, I will choose the price of the nearest day to the announcement date instead.
6. The payment method could be cash, stock, or a mix of both.
7. The buyback deals are excluded.

For all the issues required above, the final dataset contains 440 M&A announcements concerning the merger of 196 acquiring companies (The detail is shown in Table 3.1)

3.3.2. Econometric Specification

This research employs an event study method to evaluate the relationship between stock market reaction to M&A announcement and M&A outcome of Vietnamese listed firms. To examine market reactions to announcements of M&A deals, I use the standard event study methodology and compute abnormal returns (Brown and Warner, 1985). This methodology assumes that market is efficient enough to estimate the influence of sudden event on expected future firm value. An event study begins by identifying the period (event window) involved in the event. Several papers address the issue of the appropriate window length that should be used to measure the price reaction correctly. Hillmer and Yu (1979) find that the event window should end within hours of the initial announcement. Chang and Chen (1991) find that event windows should go on for several days as the market keeps responding to news. Krivin et al. (2003) point out that event window length may be related to the period of observation. In practice, the event window could be the event day, or the event day plus or minus some number of days, weeks, or months when the sample firms' returns are observed to assess whether anything unusual happened. For example, if one is looking at the information content of a merger or acquisition with daily data, the event will be the merger or acquisition announcement, and the event window will include the day of the announcement. The event window is often expanded to multiple days. One day after the announcement day is usually added to the event window because it will capture the market reaction if the announcement occurs after trading hours. One or two days prior to the announcement day can be added to the event window because it will capture the market reaction to possible information leakages before the official deal announcement. However, accuracy (predictive power) will be lower when more days are included in the event window due to the possibility of confounding effects from other market events (MacKinlay, 1997).

I start with the first hypothesis about managers could learn from market signal when considering M&A deals and I proceed as follows. For each firm-event announcement, I calculate the abnormal return, which presents the difference between actual return and normal returns. In addition to the notion that information fully incorporates with prices since the concept of abnormal returns is the main key of the event study method. Then, I examine share price movement to M&A

announcements by cumulating the daily abnormal returns to shareholders of the acquiring firms during the event window using the market model introduced by Fama et al. (1969). To the first hypothesis about how the market reaction around M&A announcement could determine the completion of deal, I firstly run a univariate test of cumulative abnormal return on completed and incomplete firms. The T-test is applied to find any difference of *CAR* for completed and incomplete deals. Then, I run the multivariate test about the influence of cumulative abnormal return in the five-day event window [-2,2] around the announcement day, deal and firm characteristics on the completion of M&A deals. Learning from the market signal means whether managers tend to decide after considering the market reaction through the change in stock price. To do that, I examine whether managers consider the market reaction before finishing an M&A deal by testing the effect of cumulative abnormal returns (CAR) on deal decision:

$$Completed_{i,t} = \alpha_0 + \alpha_1 . CAR_{i,t} + \sum_{k=1}^{K} \beta_k \, DEAL_{k,i,t} + \sum_{k=1}^{K} \gamma_k \, FIRM_{k,i,t} + \sigma_t + \eta_j + \varepsilon_{i,t} \quad (1)$$

where $Completed_{i,t}$ is the dependent variable, which indicates the completion status of deal i in year t. This variable is 1 if the transaction is completed and 0 if it is incomplete (withdrawn or still processing). $CAR_{i,t}$ is the cumulative abnormal return of deal i in year t, calculated over the five-days window around the announcement date. β is a vector of coefficients reflecting the effects of a diverse set of deal characteristics variables and $DEAL_{k,i,t}$ represent a full set of deal characteristics in year t. γ is a vector of coefficients reflecting the effects of a diverse set of firm i's characteristics variables and $FIRM_{k,i,t}$ represent a full set of firm i's characteristics in year t. $\varepsilon_{i,t}$ is a disturbance term. I also include sector and year fixed effect ($\sigma_t \; and \; \eta_j$ respectively) into control for unobserved variables and reduce endogeneity problem. The key explanatory variable is the announcement period $CAR_{i,t}$. My first hypothesis predicts that the higher the announcement period CAR, the more likely the deal will be completed. I expect that α_1 will be significantly positive then I can conclude that the more favourably the market reacts to an announced investment, the more likely it is that managers will complete the investment if they are listening to the market.

For the next hypothesis, I consider the consequence of information from stock price to the result of M&A deals. I firstly examine the variations in the acquirers' post-announcement level of stock price informativeness. The main variable of interest is the coefficient of $CAR_{i,t}$ and the

interaction between stock price informativeness before announcement day and cumulative abnormal returns ($CAR_{i,t} \times Pre\_INFO_{i,t}$) on the acquirers' post-announcement level of stock price informativeness by following Samer Adra et. al (2023). The estimated equation is shown below:

$$DeltaINFO_{i,t} = \alpha_0 + \alpha_1 . CAR_{i,t} + \alpha_2 . Pre\_INFO_{i,t} + \alpha_3 . CAR_{i,t} \times Pre\_INFO_{i,t} + \sum_{k=1}^{K} \beta_k \, DEAL_{k,i,t} + \sum_{k=1}^{K} \gamma_k \, FIRM_{k,i,t} + \sigma_t + \eta_j + \varepsilon_{i,t} \qquad (2)$$

where $DeltaINFO_{i,t}$ represents the difference of stock price informativeness of firm i in year t, between before and post the announcement date. $Pre\_INFO_{i,t}$ is the stock price informativeness of acquirers before M&A announcement and $CONTROL_{i,t}$ represent a full set of control variables for firm i and year t. The key explanatory variables include $CAR_{i,t}$, the interaction variable between $CAR_{i,t}$ and pre-announcement stock price informativeness. I expect that α_1 will be significantly positive and presents the same direction movement between acquirers' stock price informativeness and their $CAR_{i,t}$. The coefficient of α_3 is expected to be significantly positive too and I can conclude that the sensitivity of $CAR_{i,t}$ on post-announcement informativeness is stronger when the pre-announcement stock price informativeness contains more private information that is unknown by managers.

To examine whether my effects are mainly driven by the strong effects of positive/negative acquirer *CAR*. For univariate test, I divided my sample evenly between deals having acquirers with relatively low and high level of stock price informativeness. In each sub-sample, I estimate the change in stock price informativeness before and after announcement date for three groups defined by the acquirers' cumulative abnormal return. The CAR-based groups are defined as follows: (a) by *CAR* of lower than 25% of percentile, (b) between 25% of percentile and 75% of percentile, and (c) above 75% of percentile. Using T-test, I check the difference between each range of *CAR,* and I also include the stock price informativeness of pre-announcement in two sub-sample (lower and higher than median of its) to provide a comprehensive analysis and to investigate whether there are any noticeable differences in the leakage of information between the two groups. It is important to account for this factor in my empirical tests. Regarding my hypotheses, I anticipate that the pre-announcement cumulative abnormal return would not be informative because I expect it to influence managers' actions prior to their public acquisition bid. For multiple analysis, I apply bellowing specification:

$$DeltaINFO_{i,t} = \alpha_0 + \alpha_1.(CARover_{i,t}) + \alpha_2.(CARless_{i,t}) \times Pre\_INFO_{i,t} + \alpha_3.(CARless_{i,t}) + \alpha_4.(CARover_{i,t}) \times Pre\_INFO_{i,t} + \alpha_5.Pre\_INFO_{i,t} + \sum_{k=1}^{K} \beta_k DEAL_{k,i,t} + \sum_{k=1}^{K} \gamma_k FIRM_{k,i,t} + \sigma_t + \eta_j + \varepsilon_{i,t} \quad (3)$$

Equation (3) explicitly disentangles the effects of large positive and negative acquirers $CAR_{i,t}$. Using the intermediate $CAR_{i,t}$ as the baseline case, I create two dummy variables: (i) $CARless_{i,t}$ and (ii) $CARover_{i,t}$. These two dummy variables represent for noticeable reaction of market toward M&A announcement news for firm i in year t. To confirm the second hypothesis, I continue by analysing the relationship between stock price informativeness of the acquirers before the announcement and market reaction to M&A announcement on the completion of M&A deals. I also focus on the coefficient from α_1 to α_4 in equation (4) to find an answer the question about the role of announcement event to the sensitivity of stock price informativeness to cumulative abnormal return. The sign and significant status of those coefficient will answer the second hypothesis.

$$Completed_{i,t} = \alpha_0 + \alpha_1.(CARover_{i,t}) + \alpha_2.(CARless_{i,t}) \times Pre\_INFO_{i,t} + \alpha_3.(CARless_{i,t}) + \alpha_4.(CARover_{i,t}) \times Pre\_INFO_{i,t} + \alpha_5.Pre\_INFO_{i,t} + \sum_{k=1}^{K} \beta_k DEAL_{k,i,t} + \sum_{k=1}^{K} \gamma_k FIRM_{k,i,t} + \sigma_t + \eta_j + \varepsilon_{i,t} \quad (4)$$

3.3.3. Definitions of the variables

3.3.3.1. Dependent variable

My research objective is to test whether the information within stock price could affect the completion status of M&A deals. The dependent variable for this paper is "Completed". The value of the variable is set to 1 if the deal is completed and set to 0 otherwise (withdrawn or pending over 1 year since announcement).

3.3.3.2. Main interest variables

Abnormal Return

An abnormal return is interpreted as the market's reaction to the event and is believed to capture information that is not already reflected in the stock price. It is often used as a proxy for the information content of an event and provides insights into how the market perceives and incorporates new information (MacKinlay, 1997; Kothari and Warner, 2004). Appraisal of the

event's impact requires a measure of the abnormal return. The abnormal return is the actual ex-post return of the security over the event window minus the normal return of the firm over the event window. The normal return is defined as the expected return without conditioning on the event taking place. For firm i and event date τ the abnormal return is:

$$AR_{i,t} = R_{it} - NR_{i,t} \quad (5)$$

Where $AR_{i,t}$ is the abnormal return for stock i in time t (daily in this research), $R_{i,t}$ is the actual stock return for stock i in time t, measured by acquirer's stock return index, $NR_{i,t}$ is the normal return for stock i in time t, measure by the market return index.

Cumulative Abnormal Return

Based on the abnormal returns, next, I calculated cumulative abnormal returns (CAR) for a specific event window:

$$CAR_{i,t}[-n, n] = \sum_{-n}^{n} AR_{i,t} \quad (6)$$

where $CAR_{it}(-n, n)$ can be calculated by summing the abnormal return for an event window. In an event study analysis, the event window is the period during which the market's reaction to an event is measured. This window can vary depending on the specifics of the study. Some studies use long event windows to capture the long-term effects of the M&A announcement on the stock prices. These could be 1 month, 6 months, or even 1 year. The long-term window can provide insights into the market's assessment of the overall impact of the M&A transaction on the future profitability of the companies involved (Erragragui et al., 2023). However, this study focuses on the short-term window. Specifically, this is typically a small window of time around the announcement of an M&A transaction. A common choice is a [-10, 10] (Pham et al.,2015) or [-3,3] (Erragragui et al., 2023) or [-2,2] (J.B.Kau et al., 2008) or [-1;1] (Mulherin and Boone, 2000; Walker, 2000) or [-1;0] (Smith and Kim, 1994). This window is used to capture the immediate market reaction to the announcement. In this research, I choose five-days window surrounding the announcement date [-2;2] as a period of the event window.

3.3.3.3. Stock Price Informativeness

In this research, I use stock price non-synchronicity as a measurement of private information in stock prices, which may be new information for managers and can provide decision-

making reference for investment management (Chen et al. 2007, Wang et al. 2009, Chen et al. 2022). I follow Chen et. al (2007) by running single-factor and multiple-factor regression models below:

$$R_{i,j,t} = \beta_0 + \beta_1 . R_{m,t} + \beta_2 . R_{j,t} + \beta_3 . R_{m,t-1} + \beta_4 . R_{j,t-1} + \varepsilon_{i,t} \quad (7)$$

where $R_{i,j,t}$ is the stock return of firm i of industry j in time t; $R_{j,t}$ is the stock return of industry j in time t; $R_{m,t}$ is the stock return of market in time t; $R_{m,t-1}$ is the stock return of market in time t-1; $R_{j,t-1}$ is the stock return of industry j in time t-1. I use 1 day lagged time here to capture the response of market to firms' stock returns. If the firms' stock return is closely related to the return of industry and market, then R_square (R^2) of above regression will be low. R^2 values provide an estimation of the variation in the returns on a stock that cannot be explained by market and industry returns. If the R^2 statistics are low, it indicates a large amount of firm-specific information is incorporated into stock prices and I call this as private information. In this case, stock price synchronicity is low and stock price informativeness is high (Ferreira et al., 2011; Ferdinand A Gul et al., 2011). In my study, the stock price informativeness measure is derived from the R^2 of the market model applied to daily returns. I exclude all firms that have under 100 days per year. Following Chen et al. (2007), the stock price informativeness is defined as the following:

$$INFO_i = ln\left(\frac{1 - R_i^2}{R_i^2}\right) \quad (8)$$

The higher $INFO_i$, as known as higher stock price informativeness, represents a more specific informative contains within the stock price for firm i. In this research, I also consider *INFO* of acquirer firm in the year that follow the deals' announcement (*Pre_INFO*), *INFO* of acquirer firms in the year that precedes the deals' announcement (*Post_INFO*) and the difference of two value is *DeltaINFO*. The high *DeltaINFO* suggests that the level of the acquiring firm's stock price informativeness prior to a given M&A announcement is relatively low, leaving significant room for equity investors to expand resources on information-based trading. Thus, it could help increasing the level of stock price informativeness in post-M&A.

3.3.3.4. M&A experience

Maexp: This is a continuous variable. It indicates the total number of successful deals.

SuccessExp: This is a dummy variable, and it takes on the value of one if the acquirer experiences successful deal, then have at least 1 completed deal later, and 0 otherwise. It identifies the acquirer completion experience based on previous successful deals.

FailureExp: This is a dummy variable, and it takes on the value of one if the acquirer experiences failure deal, then have at least 1 completed deal later, and 0 otherwise. It indicates the acquirer completion experience based on previous failure deals.

3.3.3.5. Deal characteristics.

I collect from Thomson Reuters database (see part 3.3.1), I clarify deal characteristic as a group of variables:

Control deal (a deal is considered as control deal if the share percentage of acquirer is higher than 50% after M&A),

Deal size (Natural logarithm of the transaction value). As was found in prior literature (Fich et al., 2015; Luo, 2005), the deal value has a significant impact on the closing probability of the M&A deal. To control for this effect and to increase the power of the tests, this thesis will control for the deal value. The deal value will be included as the natural logarithm of the deal value in Vietnam Dong.

Relative size (Deal size divided by the acquirer's pre-acquisition market valuation). In addition to controlling for the deal value, this thesis will control for the deal value relative to the acquirer market capitalization. This variable has been used in prior literature as a control variable and it was found to have a significant negative effect on deal completion (Fich et al., 2015; Luo, 2005). The variable is constructed by dividing the deal value at the announcement by the acquirer market capitalization on the last day of the estimation window (i.e., 46 trading days before the M&A announcement).

Payment type: (this dummy variable equal to 1 if some stock was used in financing the deal)

Target public: (this dummy variable equal to 1 if target firms is publicly traded)

Target private: (this dummy variable equal to 1 if target firms is privately traded)

Target subsidiary: (this dummy variable equal to 1 if target firms is subsidiary traded)

3.3.3.6. Firm's characteristics

Firm characteristics include several variables that related to the financial perspective of acquirer firms. I control for Leverage (Natural logarithm of firm's leverage), TobinQ (Tobin's Q index), Cash (Natural logarithm of firm's cash), Dividend (Natural logarithm of firm's dividend). Descriptive statistics for those variables are contained in Table 2, Panel D.

3.4. Empirical Results

3.4.1. Descriptive Statistics

In this section, I examine the overview of available data, as well as the descriptive statistic of variables. The statistics of deal reproduced in table 3.2 below point out the deals that meet a requirement in Table 3.1. The number of case and the average value of transaction for each year are calculated for all deals (column 1 and 2), control deals (column 3 and 4), completed (column 5 and 7) and incomplete (column 7 and 8) transactions. In total from period 2008 to 2022, I have 440 M&A cases.

[Insert Table 3.2 about here]

The lowest average value of all deals is 47 billion VND (equivalent to 2.1 million USD) in 2022, and the highest average value of deals is 650 billion VND (equivalent to about 27 million USD) in 2008. The number of M&A deals per year look like bell-shaped with the top of the bell is the year of 2015 and 2016. The highest number of M&A deals per year are 59 cases in 2016. This year accounts for the development of Vietnam economy after market stable period from 2009 to 2015. The control deals equal to about 70 percentage of all deals. Out of 440 reported deals, the number of completed deals (account for 70.68%) are nearly 2.5 times higher than incomplete deals (account for 29.32%). Incomplete deals include transaction that: intended (1.51%), withdrawn (5.28%), pending over one year without any additional information (22.53%). Since 2008 to 2022, the number of completed deals is always higher than incomplete deals except for the year of 2021 and 2022.

[Insert Figure 3.1 about here]

Figure 3.1 highlight this difference by comparing completed rate of M&A deals between Asia and Europe countries. This number is quite similar to other Asia countries around Vietnam (Indonesia, Malaysia, Philippines, Thailand, and China) and lower than typical Europe countries (such as France, Germany, Italy, Netherland, UK) and US. Three possible reasons for this

phenomenon. First, the more transparent and stable regulatory framework of M&A activity in westerner countries could lead to the smoother transitional process (Pronk, 2014). Secondly, straightforward negotiations and integration culture of Western countries help better handling of cultural integration issues while the complex in Asia culture could sometime lead to unexpected misunderstanding and conflicts, affecting deal completion (Liu et al, 2022). Thirdly, in many Asian countries, especially Vietnam, the government play both roles in the market management and participant through State-Owned Enterprise. Thus, deals might face delay or block if those deals related to SOE or sensitive sectors like telecommunication, energy or infrastructure.

Table 3.3 below illustrates overview of the descriptive statistics for all variables used in this paper.

[Insert Table 3.3 about here]

Panel A presents the M&A completion. The mean of M&A Completed is 0,707 means 70.7% of deals are completed. The panel B displays the statistic of stock price informativeness. In this paper, I follow Wang et al., (2008); Ouyang and Szewczyk (2018); Andra and Barbopoulos (2023) use price non-synchronicity as a measurement for stock price informativeness level. An average of this variable is 0.328 and the difference between stock price informativeness in the year follow and precedes of announcement is 0.017. Panel C presents the statistics for M&A experience. The average success deal number is 3.755. VinGroup is a firm with highest number of successful M&A deals (24 deals), following by REE corporation (15 deals) and PAN group (9 deals). It worth to note from Panel C that if firms already have at least 1 completed then 46.1% they will have another completed deal in the future while if firms did at least one incomplete deal then only 19.8% they can finish next M&A deal. Panel D show the statistic of firm characteristics. I take natural logarithm of *Leverage, Cash* and *Dividend* variables to reduce the value of them (VND is the second weakest currency). The average of *TobinQ* is 1.074, suggesting that the stock of acquirer firm is slightly overvalued. The mean of *Leverage* is 0.225 means that the long-term debt of acquire firms account for 22.5% of their total asset. Panel E is about the deal characteristics. The statistics show that: 69.77% is control deals, 12,5% of payment type is paid by shares, the percentage of

target firms are public, private, and subsidiary firm are 30.2%, 48.6%, 19.5% respectively. The average value of deal is 10.629 [13] and relative deal size is 0.184.

3.4.2. Market Reaction to M&A announcements and Deal completion

In this section, I examine whether the market's reaction to a proposed investment significantly affects whether the investment is ultimately undertaken or incomplete — that is, whether it appears that decision-makers "listen" to the market. By "listening" to the market, I mean that if the market responds favourably to a major corporate investment, then management is more likely to complete the investment, and if the market views the investment negatively, then managers are more likely to unfinish the investment.

3.4.2.1. Univariate test

Table 3.4 compares the *CAR* for all deals (column 1), completion status (column 2 to 4), and type of deals (column 5 to 7). I also test the difference with a standard T-test, reporting corresponding two-tailed P-values.

[Insert table 3.4 about here]

Specifically, I calculate cumulative abnormal return (*CAR*) on various event window (from 2 days to 20 days around the announcement date). I could see that the market reaction to M&A announcement is positive for all of event windows and this positive reaction increase with the size of event window. It suggests that the completion of deals increase with more positive reaction from market for news about M&A deal announcement. Moreover, it worth to notice that: (i) The *CAR* of incomplete deals is higher than completed in short event window (3,5,7 and 9 days around announcement day). (ii) the market reaction to completed, incomplete and Control deals are positive while the reaction from market is negative for Normal deals (iii) there is a significant different between the market reaction for Control deal and Normal deals in my sample.

[13] I take natural logarithm of Cash, Dividend and Deal size. The real average number of them are 114.62 billion VND, 42.26 billion VND and 41.25 billion VND, respectively.

Table 3.5 displays the difference between completed and incomplete on some subsample of deal characteristics. The first column shows the result for all deals while the second and third column are for completed and incomplete deals and the last column is t-test result.

[Insert table 3.5 about here]

The Panel A is subgroup base on deal size. The market reacts negatively for the small deal announcement, but this result contrasts with the bigger deal. In panel B, I report positive *CAR* for all the case of public and private target. I also see that, for public target subgroup, the difference in reaction between completed deals and incomplete deals is -0.5% and this difference for private target is -0.6%. Panel C provides additional insights for form of bid. In this subsample, the market positively reacts to M&A announcements of completed and incomplete and the difference between reaction of control deals and normal deals in this case is -0.9%. Panel D shows the *CAR* of subgroup based on method of payment. For deals that be paid by cash, the market reacts negatively for completed deal paid by stock while react positively for deals that be paid by cash. The result in univariate show that stock market reaction is more intense with completed deal if these deal value or relative deal value are high, or deals are paid by cash.

3.4.2.2. Multivariate estimation results

For in-depth explanation of my preliminary result, I estimate *CAR*, deal and firm characteristic variables on completion status of deal. Table 3.6 illustrates a regression model explaining whether managers complete their M&A deals when considering market signals.

[Insert table 3.6 about here]

Table 3.6 show the determinant of completion of deal on cumulative abnormal return and other control variable. Three first columns illustrate all deals while three last columns illustrate control deals only. The first and fourth column consider only deal characteristics. In second and fifths column, I add some interaction variables into consideration and in column third and sixth, I consider all variables including *CAR*, deal and firm characteristics. My hypothesis predicts that the higher the announcement period *CAR*, the more likely the deal will be completed. That is, the more favourably the market reacts to an announced investment, the more likely it is that managers will complete the investment if they listen to the market. Thus, I predict a positive coefficient on the announcement period return. In column 3rd, the coefficient for *CAR* is significant negative (-4.761

at 1% level). This result suggests that higher cumulative abnormal returns lead to a lower likelihood of deal completion. This might indicate that market perceive high *CAR* with scepticism, potentially due to concerns over the acquirer's ability to realize projected synergies. Although unable to confirm first hypothesis, I still can state that the market reaction to M&A deals play a significant role on the completion of those deals. For control deals subsample, *CAR* show a positive but insignificant coefficient, indicating no substantial effect on deal completion.

The interaction between *CAR* and deal size is positive but not significant across all models. It suggests that the size of the deal does not substantially modify the impact of *CAR* on deal completion. The lack of significance in this interaction term implies that while larger deals might attract more attention, they do not necessarily alter the fundamental relationship between market reactions and deal completion. The same results and conclusions are applied to the interaction variable between *CAR* and relative size since the coefficients of this variable is insignificant. This result is against to a lot of previous research such as Luo (2005), Kau et al. (2008), Chen and Doukas (2023). The results could come from the distinction of M&A activities in Vietnam. In some case, firms are forced to merge or acquire because of their poor operating performance but the government do not want them collapse. In this case, manager does not pay attention much on the market when doing M&A deals. A typical M&A case could be deal of CTIN and Kasati in the year of 2019. CTIN has a plan to merge with Kasati, which is a subsidiary company of VNPT (Vietnam Posts and Telecommunications Group) and aims to hold 35% of the equity. However, this case still pending for 4 years for unrevealed reason. Vietnam also publish a decree 23/2022/NĐ-CP to guide this kind of M&A deals. However, the number of these M&A cases are very low in comparison with all M&A deals, but it could be used to explain the contrary of empirical result of Vietnam market. On the extending test section, I include the owner status of firms in consideration to confirm my analysis.

The coefficient for deal size is consistently positive and significant across most models, suggesting that larger deals generally have a higher likelihood of completion. This aligns with the notion that larger deals are more attractive and potentially more beneficial for the acquiring company, hence more likely to be completed. The relative size of the deal shows a consistently negative and significant coefficient, indicating that larger relative deal sizes reduce the likelihood of deal completion. This could be due to the increased complexity and integration challenges associated with larger relative targets. Payment type has a negative impact on deal completion,

significant in several models. This implies that deals financed through stock payments might decrease the likelihood of completion due to dilution concerns or other factors. For target public firms, the coefficient for this variable is positively associated with deal completion, significant in several models. This suggests that deals involving public targets are more likely to be completed, potentially due to the transparency and regulatory oversight associated with public companies. The coefficient of other financial variables such as *TobinQ, Leverage and Dividend* are insignificant, and I can conclude that they do not play any key role in managers' decisions. The financial information of target and acquire firms could be easily collected from the internet then managers could not pay much attention to that information when considering M&A deal decisions.

3.4.3. The information consequences of M&A deals

In this section, I examine whether market reaction to M&A announcement have any impact on the stock price informativeness of acquirer firms and how the stock price informativeness could affect to the relationship between market reaction to deal announcement and deal completion. The idea is that the market reaction represents the expectations of investors about the future cash flow of acquirer firms. This expectation will be reflected in the stock price and then its co-movement corresponding to industry and market.

3.4.3.1. Univariate estimation results of stock price informativeness surrounding M&A announcement.

Table 3.7 provides evidence from my initial univariate analysis between stock price informativeness and CAR surrounding M&A announcements. My sample is divided evenly between deals having acquirers with relatively low *PreINFO* (< Median) in Panel A and acquirers with relatively high *PreINFO* (≥ Median) in Panel B. In each panel, I estimate the average *deltaINFO* (measured by *PostINFO* − *PreINFO*) for three groups defined by the acquirer *CAR*. The CAR-based groups are defined as follows: (a) by *CAR* lower than 25th percentile (column 1), (b) between 25th percentile and 75th percentile (column 2), and (c) above a 75th percentile (column 3).

[Insert table 3.7 about here]

There are three main findings according to table 3.7. ***Firstly***, for low level of stock price informativeness group (Group A), the value of *INFO* increases with the increase of cumulative

abnormal return (*deltaINFO* value is positive for all *CAR*). This result is totally contrary to the high level of price informativeness group (Group B) when the value of *INFO* decrease (*deltaINFO* value is negative for all *CAR*). ***Secondly***, my findings indicate that there is no statistically significant difference between each group during the specific event window (-2, 2) in both group A and B. It suggests that there is no significant in the change of *deltaINFO* level for each group of *CAR*. ***Thirdly***, in group of low level of stock price informativeness, there is a decrease in *deltaINFO* with the increase in *CAR* and this trend is contrast with the high level of stock price informativeness group. It is inconsistent with previous of Dow et al. (2017); Adra and Barbopoulos (2023) when they stated that the growth of acquirer stock price informativeness is more noticeable for deals with positive announcement reaction.

3.4.3.2. Multivariate estimation of market reaction to M&A deals on stock price informativeness.

Table 3.8 reports regression models explaining various factor (*CAR*, deal and firm characteristics and interaction variables) to affect *deltaINFO*. The dependent variable is the change in stock price informativeness of acquirer.

[Insert table 3.8 about here]

Models 1 and 2 illustrate the role of market reaction to M&A news, deal and firm characteristics on acquirers' stock price informativeness after announcement. Model 1 is estimated on the full sample, while model 2 considers the control deals sub-sample. Column 1st and 4th consider only *CAR* and deal size. In column 2nd (model 1) and column 5th (model 2), I add some interactive variables into consideration, and I add full variables in column 3rd and 6th. In overall, control variables such as deal size, pre-announcement informativeness, and *TobinQ* are significant determinants of changes in stock price informativeness. In model 1 of all deals, CAR has a positive but not significant coefficient (0.189), suggesting a negligible direct impact on the change in stock price informativeness. The coefficient of *CAR* is positive but not significant in most models, except in column 6 for control deals where it is positive (2.922) and significantly at 10% level. This indicates that for subsample of control deals, higher abnormal returns are associated with an increase in stock price informativeness post-M&A, possibly due to heightened market interest. This result is consistent with my prediction about the increase in cumulative abnormal return could increase the acquirer's stock price informativeness after M&A announcement. This result may come from the common occurrence in Vietnam where the primary reason for M&A deals is that

the operational performance of the target firms is suboptimal. Thus, equity investors could see M&A deals as a high-risk investment for acquirer firms. On the other hand, I could see that the coefficient of *CAR*PreINFO* in models 1 and 2 are insignificant. It means that I cannot directly conclude any statement about their relationship to the acquirers' stock price informativeness. The reason for this result could come from the fact that M&A did not meet expectation of investors in Vietnam. Various empirical research in Vietnam points out that they exert a significant crowd-out effect and subsequently impede growth in both short-run and long-run (Nguyen et al. 2021) or have various negative effect on banking efficiency (Nguyen et al. 2022). For that reason, I will focus on the large positive and negative acquirer for more specific result to test whether extreme market reaction could have some effect on the stock price informativeness of acquirer.

[Insert table 3.9 about here]

The results for this analysis are shown in table 3.9. I follow the same technique with previous regression, but I use weakest (lower than 25th percentile of *CAR*) and strongest (higher than 75th percentile of *CAR*) market reaction and its interaction with stock price informativeness of acquirer before M&A to answer question about the influence of market reaction to the price non-synchronicity. The column 1 to 3 illustrate the result for all deals while the columns 4 and 6 are for control deal sub-sample. In column 2 and 4, I add some interaction variables between cumulative abnormal return with various variable such as deal size, *TobinQ* or *preINFO* to discover the cumulative effect of those variables and *CAR* on the change of stock price informativeness. Similar with the regression of *deltaINFO* on moderate *CAR*, the coefficient of such as deal size, pre-announcement informativeness, and *TobinQ* are significant determinants of changes in stock price informativeness in at least 10% level. Evidence from table 9 shows that the coefficient of *CARless* is positive but not statistically significant effect on the change in stock price informativeness. This suggests that lower *CAR* do not significantly impact the informativeness of stock prices post-M&A. The similar result happens to *CARover* and I can conclude the same statement with *CARless* variables. The coefficient for *PreINFO* is consistently negative and highly significant across all models, indicating that higher pre-announcement informativeness leads to a decrease in post-announcement informativeness. This could be due to a saturation effect where stocks that are already well-covered and informative have less room for additional information gains. The coefficient of interaction variable between *CARover* and *preINFO* is positive and significant when I add all control variables into all deals' consideration. The positive sign of

interaction variable between *Pre_INFO* and large positive *CAR* means that the effect of *CAR* on post-announcement stock price informativeness increase with higher pre-announcement stock price informativeness. This implies that when initial informativeness is higher, the positive impact of substantial abnormal returns on informativeness is amplified. This result against the previous research of Down et al, (2017), Adra and Barbopoulos (2023) who investigate US market. This result suggests that if other things held constant, strong market reactions for acquirers subject to high pre-announcement stock price informativeness leave wide room for further informed trading opportunities based on public information after the announcement.

3.4.3.3. The role of stock price informativeness on the interaction between market reaction and M&A deal completion

In this section, I test the learning hypothesis by adding stock price informativeness into consideration. The idea is that when the amount of private information within stock price is high, then the increasing in positive reaction of market to M&A announcement could enhance the chance to complete the deal. I also consider the extreme value of cumulative abnormal return (higher than 75^{th} percentile or lower than 25^{th} percentile). The univariate estimation suggests that high *PreINFO* have a significant growth in *PostINFO* following the M&A announcement. I emphasize that statement by running multivariate test of variation on *deltaINFO*. The results are shown in table 3.10 below.

[Insert table 3.10 about here]

Table 10 shows the role of the level of stock price one the relationship between market reaction to M&A news and the completion status of those deals. Model 1(including column 1 and 2) considers the full sample while Model 2 (including column 3 and 4) considers the subsample of the low level of *preINFO* (lower than median) and Model 3 (column 5 and 6) focus on subsample of high level of *preINFO* (higher than median). With a group of low stock price informativeness, all explanation variables are insignificant, and I lack evidence to conclude any statement in this case. With a group of high stock price informativeness, there are some remarkable results. ***Firstly***, the coefficient of *CARless* is significant positive with the value of 0.874 and 1.401 for all deals and control deals respectively. This value appears to work in such a way that: those M&A deals which receive little attention (low level of market reaction) but the feedback from market on stock price when news about deal announcement is positive could lead to better chance of successful

completion. ***Secondly***, for all model, the coefficient of interaction variable between market reaction and stock price informativeness is insignificant at 10% level then it is lack of evidence to confirm the role of stock price informativeness on the relationship between market reaction and completion status of M&A deals. In this case, I still cannot confirm hypothesis H2. ***Thirdly***, the interaction term *CARless*Dealsize* is negative and significant at 1% level in the high *preINFO* control deals model (-0.091). It indicates that for deals with lower abnormal returns, larger deal sizes negatively impact the likelihood of completion, especially when pre-announcement informativeness is high.

3.4.4. Extending tests

3.4.4.1. The acquirer's price non-synchronicity with emphasis on the target's information environment

I highlight the status of target firm on the relationship between market reaction to M&A news and the change in stock price informativeness of acquirers. I apply bellowing specification:

$$DeltaINFO_{i,t} = \alpha_0 + \alpha_1.CAR_{i,t} + \alpha_2.CAR_{i,t} \times Pre\_INFO_{i,t} + \alpha_3.Targetstatus_{i,t} + \alpha_4.CAR_{i,t} \times Targetstatus_{i,t} + \sum_{k=1}^{K} \beta_k DEAL_{k,i,t} + \sum_{k=1}^{K} \gamma_k FIRM_{k,i,t} + \sigma_t + \eta_j + \varepsilon_{i,t} \quad (9)$$

Where $Targetstatus_{i,t}$ represents the type of target firm i (including public, private or subsidiary firms) in year t. The idea comes from the fact that the availability of information that relates to private and subsidiary firms are far fewer than the public firms (Adra and Barbopoulos, 2019,2023), leading to the increase in information searching cost of investors. It creates a barrier and reduce the interest of investors in finding about M&A deals. Specifically, I analyse how change in acquirer's price non-synchronicity varies with the target firms' listing status (public-private-subsidiary). The results for this regression are shown in table 3.11 below.

[Insert table 3.11 about here]

The model 1 (first column) use full sample in the regression while model 2 consider only control deals. The table 3.11 shows some noticeable results: ***Firstly***, the coefficient of *CAR* is significantly negative in both models. This indicates that higher cumulative abnormal returns over the 3-days window are associated with a substantial decrease in stock price informativeness post-M&A. This could be due to market scepticism or the incorporation of all available information

into the stock price, leaving less new information to be revealed post-announcement. ***Secondly***, the interaction variables between *CAR* and all target listed status (including public target, private target and subsidiary target) are significantly positive. It indicates that when the target is a public company, higher *CAR* leads to a significant increase in post-announcement stock price informativeness. The same conclusion is applied to the private and subsidiary target. It worth to note that the coefficient of interaction variable between *CAR* and target private is significant negative in both model and the value of this variable is higher than the target public. It follows my explanation in research hypothesis development part that the private and subsidiary firms cost more effort of equity investors for searching information about their stocks and it could lead to the increase of stock price informativeness in the period of post-M&A.

3.4.4.2. The impact of Stock price informativeness on deal size.

I follow Chen et. al (2007) to find out the impact of stock price non-synchronicity on the M&A deals size. In this research, I consider the relative size of deals as the investment that firms intend to do. This question derives from the theoretical background that stock price could reflect the firms' earning opportunity and future viability. The managers could use information from their stock prices help to improve their managerial decision (Ben Nasr and Alshwer,2018). I suppose that information about the market value of installed capital of firms and its replacement cost (Tobin's Q ratio) could affect managers' reliance on the stock price. Specifically, I estimate the following regression:

$$relative\ deal\ size_{i,t} = \alpha_0 + \alpha_1 . Pre\_INFO_{i,t} + \sum_{k=1}^{K} \beta_k\, DEAL_{k,i,t} + \sum_{k=1}^{K} \gamma_k\, FIRM_{k,i,t} + \sigma_t + \eta_j + \varepsilon_{i,t} \qquad (10)$$

I expected that the coefficient α_1 will be significantly positive then I can conclude that if private information in stock prices helps high-skilled managers to attain a better grasp of their own firms' fundamentals and efficiently identify the investment opportunities, they should leverage this advantage and hence initiate M&As when the acquirer's stock price is more informative.

Table 3.12 illustrates an impact of stock price informativeness and some financial status of acquirer firm on M&A deal value. I estimate only firm characteristics on deal size in column 1 and I add all deal characteristics and its interaction variables into regression in column 2. The idea of this part is replicate Chen et al. (2007) when evaluating the influence of stock price informativeness

on the sensitivity of firms' investment to stock price. In this paper, I relative deal size as measurement for the firms' investment. The results are shown in table 3.12 below.

[Insert table 3.12 about here]

The table 3.12 shows that if I consider M&A as an investment activity of firm, then stock price non-synchronicity have an insignificantly negative impact on the deal size. The coefficient of interaction between *PreINFO* and *TobinQ* is significant positive at 5% level suggests the amount of private within stock price does play a significant role in the relationship between market reaction to M&A announcement and deal size and the growth of *INFO* will increasing the sensitivity of firms' investment on stock prices. This result is consistent with numerous similar paper such as Chen et al. (2007), Wang et al. (2009). For firm characteristics, an acquirer firm with higher tangible asset are likely to have a low level of M&A transaction value. It is reasonable because I focus on merger activities then the main purpose of both acquirer and target in my consideration is increasing their asset value. Then, firms that have low level of asset preferring to merge with other firms to become stronger.

3.4.4.3. The impact of M&A experience on completion of deals

In this section, I examine whether experiences gain from previous M&A deals have any impact on the completion of future deals. The idea is that the previous M&A deal (success or failure deals) bring valuable lesson for managers, and they can apply this knowledge to improve the chance to complete future deals. This expectation will be reflected in the stock price and then its co-movement corresponding to industry and market. I apply the estimated equation:

$$Completed_{i,t} = \alpha_0 + \alpha_1 . EXP_{i,t} + \sum_{k=1}^{K} \beta_k \, DEAL_{k,i,t} + \sum_{k=1}^{K} \gamma_k \, FIRM_{k,i,t} + \sigma_t + \eta_j + \varepsilon_{i,t} \quad (11)$$

α_1, which I predict to be positive, presents the experience about M&A activities of firm i. Manager could learn from this experience (failure or success experience) and apply it to the next M&A deals. The table 3.13 below present a regression analysis result.

[Insert table 3.13 about here]

Model 1 (including three first column) consider all deals sample while model 2 (including three last column) focus on subsample of control deals. I use three variables to measure experience from previous M&A deals including: *Maexp* (total number of successful deal), *SuccessExp*

(finished deal after experience completed deal before) and *FailureExp* (finished deal after experience incomplete deal before). In overall, the coefficient of *Maexp*, *SuccessExp* and its interaction variables are insignificant then I lack evidence to conclude about them. Hence, I focus on the *FailureExp* variable and its interactions with *Deal size* and *Relative size*. The coefficient of *FailureExp* is significant positive for all deals and control deals (0.499 and 0.743 respectively). It suggests that acquirers with past failures followed by successes are more likely to complete subsequent deals. The interaction term *FailureExp*Deal size* is negative and significant at 10% level, indicating that for acquirers with past failures, larger deal sizes negatively impact the likelihood of completion, possibly due to the increased complexity and risk associated with larger deals. The interaction term *FailureExp*Relative size* is positive and significant at 5% level. This result means that the positive impact of overcoming past failures on deal completion is more pronounced for larger relative deal sizes, emphasizing the value of resilience and learning from past experiences in managing substantial acquisitions. Other control variables such as *Relative size*, Target public, cash are also significant, and it means that those variables also play a significant role to the completion of deal.

3.4.4.4. The role of firms' ownership on the completion of M&A deals

To test to which extend the role of family ownership or state ownership have any impact on the completion of M&A deals, I add family owed dummy and state owed dummy into my regression. The results are shown in table 3.14.

[Insert table 3.14 about here]

In column 1 and 3, as I predict in previous section, the CAR is insignificant with the completion of M&A deals. It suggests that when state-owned enterprises engage in M&A deals, they tend to follow the government's intentions instead of the market's signals. The insignificant positive of SOE variable means that M&A deals which involve state-owned firms does not significantly influence the likelihood of deal completion. This statement also is consistent with Qingtao Li (2022) when considering China stock market. In column 2 and 4, I focus on family-owned firms. The results claim that being a family enterprise negatively impacts the likelihood of M&A deal completion. Family enterprises might face unique challenges that hinder the completion of deals, such as internal governance issues or resistance to external control.

3.5. Conclusion

Using event study, I aim to answer two main concerns about the nexus between the market signals and managers' behaviour on M&A by answering two research questions: (1) To what extent does market reaction to M&A announcement could affect to the completion of M&A deal in Vietnam. (2) To what extent does stock price informativeness of acquirers affect to the relationship between market reaction to M&A news and the completion of M&A deal.

This research finds evidence that the deal cumulative abnormal returns around M&A announcements does have predictive power for consecutive deal completion. Specifically, for the hypothesis H1, this finding is consistence with prior research that has found the same evidence (Kau et al., 2008). Further, this seems to suggest that the investment-stock price sensitivity, as proposed in prior research (Chen et al., 2007; Foucault & Frésard, 2012, 2014), also holds in an M&A context. Although the prediction of Dow et al. (2017) said that the increase of INFO along with a positive of market reaction to M&A news could increase prospects of deal completion. In this paper, I still not confirm this prediction but with the appearance of INFO, the market reaction plays a significant role in the completion of deal. Further, the study explores the impact of M&A experience on deal completion. The significant positive coefficients for variables like FailureExp and its interaction with deal size and relative size suggest that managers who have learned from past M&A failures are better equipped to complete future deals, especially larger ones. This underscores the importance of managerial learning and experience in navigating complex M&A transactions. In conclusion, this paper advances the understanding of how market signals influence managerial behaviour in M&A activities. By integrating theoretical frameworks with robust empirical analysis, it provides valuable insights into the dynamics of stock price informativeness, market reactions, and their impact on the completion of M&A deals. These findings are particularly relevant for emerging markets, where the role of government regulation and market conditions can significantly differ from more developed markets. The study emphasizes the need for managers to consider market reactions and leverage past experiences to make informed decisions in the complex landscape of M&A activities.

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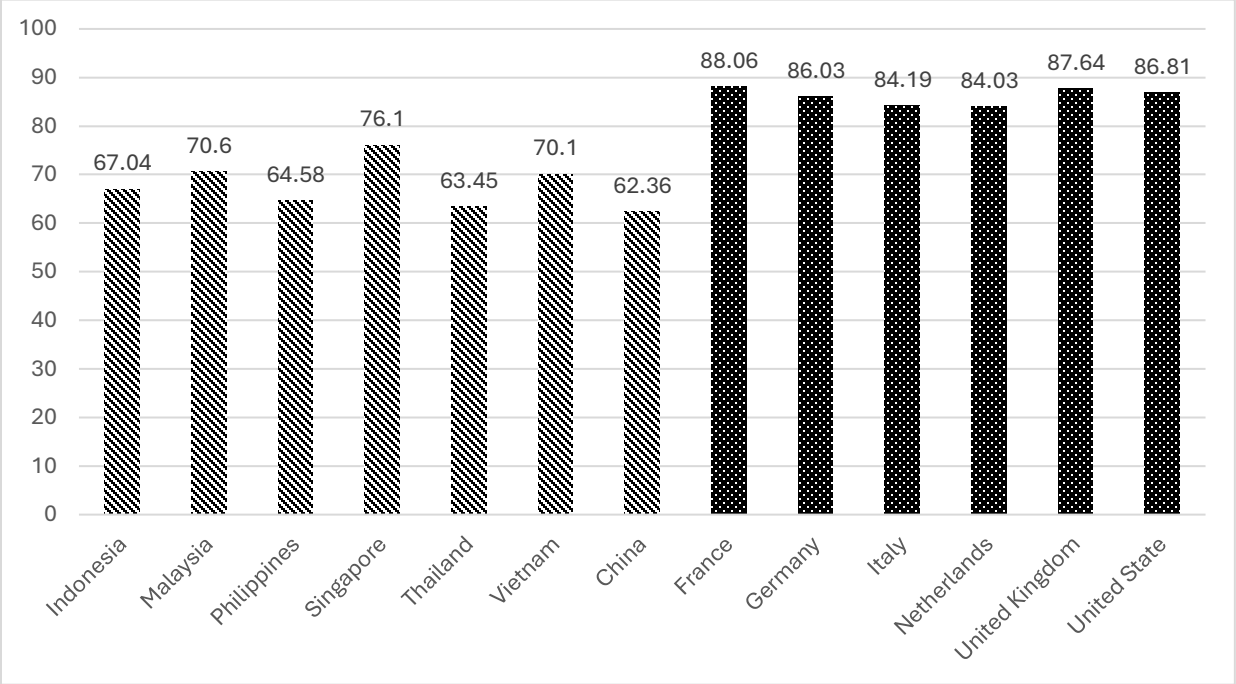

Figure 3.1: M&A completed rate comparison between some Asia and Europe countries.

This figure compares the completed rate of M&A deals in various countries from Asia, Europe and the US. The sample contains acquisitions and mergers transactions undertaken over the period 2008 to 2022 collected in the Thomson Reuters database.

Table 3.1: Sample selection strategy

This table shows the sample selection strategy of this paper.

Number of Observation	Query Description
4,143	The date of announcement between 2008 and 2022
1,425	The acquirer companies must be a public firm
1,261	The acquirer companies must have DataStream code
1,019	The target companies could be a private, public or subsidiary firm
512	The value of transaction is available
440	Deal type: Acquisition of Majority Interest, Acquisition of Assets, Acquisition of Partial Interest, Acquisition of Remaining Interest and Merger
307	Control deals

Table 3.2: Sample statistics

Table 3.2 reports the statistics on my sample of mergers and acquisitions of assets. The sample contains 440 acquisitions and merged transactions. Column 1 and 2 reports the number and average value of transactions by year of all deals respectively. Columns 3 and 4 mention statistics for control deals. Column 5 and 6 displays the number and mean value of completed deal from 2008 to 2022 (it worth to note that there is no completed deal in 2022) while column 7 and 8 provides the statistics for incomplete deals.

Year	All Deals		Control Deals		Completed Deals		Incomplete Deals	
	number of deals	mean value (million VND)	number of deals	mean value (million VND)	number of deals	mean value (million VND)	number of deals	mean value (million VND)
2008	7	650,564.90	3	344,297.10	5	906,354.10	2	11,091.65
2009	13	132,412.80	8	187,310.30	7	127,111.60	6	138,597.50
2010	43	59,563.43	25	57,097.56	25	77,809.68	18	34,221.42
2011	57	308,922.90	28	571,338.80	43	381,779.50	14	85,149.00
2012	31	159,249.80	16	232,821.80	25	195,127.00	6	9,761.50
2013	58	115,333.00	38	138,771.40	49	129,484.70	9	38,284.78
2014	42	212,886.20	31	259,954.80	32	266,744.30	10	40,540.16
2015	56	346,186.00	41	448,342.80	39	336,043.70	17	369,453.50
2016	59	404,655.70	51	181,473.80	37	530,246.30	22	193,435.30
2017	27	490,055.50	27	490,055.50	17	641,895.10	10	231,928.20
2018	6	480,744.20	4	326,434.00	6	480,744.20	0	0.00
2019	16	436,499.70	13	414,555.90	11	580,355.60	5	120,016.50
2020	15	528,335.30	14	563,257.40	11	683,297.80	4	102,188.60
2021	8	399,483.10	6	265,549.90	4	423,668.00	4	375,298.10
2022	2	47,633.18	2	47,633.18	0	0.00	2	47,633.18
Total	**440**		**307**		**311**		**129**	

Table 3.3: Descriptive Statistics

Table 3.3 presents descriptive statistics of variables (Panel A for M&A completion, Panel B for stock price informativeness, Panel C for M&A experience, Panel D for Firm characteristics and Panel E for deal characteristics. The data covers for 440 M&A deals in Vietnam during period 2008 to 2022 (the condition for this sample is shown in table 1). All variable definitions are provided in appendix 1. All firm characteristics variables are winsorized at 1% and 99%

Variable	Mean	SD	Min	p25	p50	p75	Max
Panel A: M&A Completion							
Completed	0.707	0.456	0	0	1	1	1
Panel B: Stock price informativeness							
INFO	0.328	2.989	-7.118	-1.71	0.088	1.139	15.537
PreINFO	0.415	2.925	-4.946	-1.582	0.028	1.319	15.537
PostINFO	0.379	2.964	-5.374	-1.751	-0.098	1.209	15.537
Panel C: M&A experience							
Maexp	3.755	4.932	0	1	2	4	21
SuccessExp	0.461	0.499	0	0	0	1	1
FailureExp	0.198	0.399	0	0	0	0	1
Panel D: Firm characteristics							
Leverage	0.225	0.175	0	0.075	0.219	0.335	0.757
Cash	18.527	2.21	11.965	17.099	18.464	20.055	23.828
Dividend	10.751	9.132	0.001	0.001	16.593	18.433	22.798
TobinQ	1.074	0.661	0.103	0.792	0.957	1.21	8.419
Panel E: Deal characteristics							
Deal size	10.629	1.87	3.757	9.411	10.553	11.767	16.43
Relative size	0.184	0.466	0	0.01	0.042	0.16	4.992
Payment type	0.125	0.331	0	0	0	0	1
Target public	0.302	0.46	0	0	0	1	1
Target private	0.486	0.5	0	0	0	1	1
Target subsidiary	0.195	0.397	0	0	0	0	1

Table 3.4: Statistic on Cumulative Abnormal Returns

This table reports mean and median cumulative abnormal return for M&A announcements for the period starting from n days before to n days after the announcement. This table also provides t-test statistics for the difference in mean abnormal returns for the difference in median abnormal returns across the different groups. ***, ** and * stand for statistical significance at the 1%, 5% and 10% respectively

	Full sample N=440	**Completion status**			**Type of Deals**		
		Completed Deals N=311	Incomplete Deals N=129	Difference	Control Deals N=307	Normal Deals N=133	Difference
CAR (-1;1)	0.002	0.001	0.005	-0.004	0.002	-0.006	0.011***
CAR (-2;2)	0.001	0.001	0.005	-0.004	0.001	-0.007	0.001***
CAR (-3;3)	0.005	0.005	0.007	-0.002	0.005	-0.007	0.005***
CAR (-4;4)	0.007	0.007	0.008	-0.001	0.007	-0.011	0.025***
CAR (-5;5)	0.009	0.010	0.006	0.005	0.009	0.016	0.023***
CAR (-10;10)	0.010	0.011	0.007	0.004	0.019	-0.011	0.009***

Table 3.5: Cumulative Abnormal Returns based on Deal characteristics subsamples

The table shows mean and standard error of cumulative abnormal returns (CAR) surrounding M&A announcement time. The data contains 440 M&A cases in Vietnam from 2008 to 2022 (including 311 completed deals and 129 incomplete deals). Panel from A to E present several sub-samples including: deal size, target public status, form of initial bid, method of payment and relative size of deal. This table provides t-test statistics for the difference in mean of each variable between complete and incomplete deal. ***, ** and * stand for statistical significance at the 1%, 5% and 10% respectively

		Full sample	Completed deals (1)	Incomplete deals (0)	Difference (1) - (0)
A	**Subsamples based on deal size**				
	Lower than standard deviation				
	Mean	-0.005	-0.008	0.002	-0.011
	SD	0.004	0.005	0.077	
	Higher than standard deviation				
	Mean	0.008	0.008	0.007	0.001
	SD	0.005	0.004	0.015	
B	**Subsample based on target public status**				
	Public target				
	Mean	0.003	0.003	0.008	-0.005
	SD	0.005	0.006	0.017	
	Private target				
	Mean	0.001	-0.002	0.005	-0.006
	SD	0.004	0.003	0.009	
C	**Subsample based on form of initial bid**				
	Merger				
	Mean	0.012	0.009	0.018	-0.009
	SD	0.007	0.007	0.019	
D	**Subsample based on method of payment**				
	By cash				
	Mean	0.004	0.006	-0.002	0.008
	SD	0.007	0.008	0.017	
	By stock				
	Mean	0.001	-0.001	0.006	-0.007
	SD	0.01	0.003	0.009	
E	**Subsamples based on deal size**				
	Lower than standard deviation				
	Mean	0.001	-0.001	0.006	-0.006
	SD	0.003	0.003	0.008	
	Higher than standard deviation				
	Mean	0.009	0.043	-0.005	0.049
	SD	0.035	0.054	0.045	

Table 3.6: Market reaction to M&A announcement and M&A completion

This table presents the likelihood of deal completion based on the magnitude of CAR, deal characteristics and financial status of acquirer firms. Model (1) is estimated on the group of deals with lower-than-median levels of acquirer pre-announcement price informativeness. Model (2) is estimated on the group of deals with higher-than-median acquirer pre-announcement price informativeness. N indicates the number of observations. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	All deals			Control deals		
CAR	**0.097**	**-0.806**	**-4.761****	**0.348**	**0.469**	**-3.385**
	(-0.26)	(-0.34)	(-2.08)	(-0.740)	(-0.150)	(-1.01)
Deal size	0.035***	0.035***	0.015	0.053***	0.047***	0.026
	(-2.94)	(-2.980	(-0.990	(-3.320)	(-2.800)	(-1.230)
Relative size	-0.174***	-0.138***	-0.069	-0.151***	-0.123**	-0.040
	(-4.22)	(-3.30)	(-1.56)	(-3.16)	(-2.56)	(-0.82)
Payment type		-0.160	-0.192*		-0.146	-0.189
		(-1.53)	(-1.75)		(-1.25)	(-1.54)
Target public		0.215***	0.146***		0.006	-0.027
		(-4.68)	(-2.720)		(-0.060)	(-0.26)
Stock*Public		0.197*	0.203		0.469***	0.440**
		(-1.69)	(-1.510)		(-2.910)	(-2.400)
CAR*Dealsize		0.050	0.428*		-0.056	0.312
		(-0.22)	(-1.950)		(-0.19)	(-0.970)
CAR*Relativesize		0.613	0.297		0.972	0.754
		(-1.13)	(-0.550)		(-1.450)	(-1.070)
Control variables	No	No	Yes	No	No	Yes
Sector effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	440	440	380	307	307	267
Adjust R_squared	0.124	0.183	0.217	0.164	0.201	0.226

Table 3.7: Univariate test of stock price informativeness and cumulative abnormal return

This table presents the change in the acquirers' level of INFO after the deal's announcement. The CAR-based groups are defined by lower than 25th percentile (column 1), between 25th percentile and 75th percentile (column 2), and above a 75th percentile (column 3). Panel A present the subsample of low PreINFO (lower than median value) while panel B consider the subsample of high PreINFO (higher than median value).

CAR Group	CAR< p25 (1)	p25<CAR<p75 (2)	CAR>p75 (3)	Difference (2) - (1)	Difference (3) - (2)	Difference (3) - (1)
Panel A: PreINFO< Median						
deltaINFO	0.055 (0.046)	0.033 (0.010)	0.048 (0.050)	-0.022	0.015	-0.006
Panel B: PreINFO>Median						
deltaINFO	-0.031 (0.041)	-0.086 (0.016)	-0.037 (0.018)	-0.055	0.055	-0.006

Table 3.8: Multivariate analysis of the variation in stock price informativeness

The table presents six models explaining the impact of market reaction (mearsured by *CAR*) on the acquirer's information environment. Column (1) to (3) consider the full sample of available observations while column (4) and (6) focus on control deals. The dependent variable is the change in the acquirer's level of price non-synchronicity after the deal's announcement relative to the level before the announcement. The T-statistics reported in parentheses are corrected for heteroskedasticity. N indicates the number of observations. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	All deals			**Control deals**		
CAR	0.189	0.336	0.74	2.2	2.158	**2.922***
	-0.15	-0.26	-0.52	-1.42	-1.43	-1.74
PreINFO		-0.173***	-0.234***		-0.206***	-0.274***
		(-4.22)	(-4.81)		(-4.48)	(-5.11)
CAR*preINFO		0.494	0.516		0.375	0.592
		-0.93	-0.91		-0.68	-1.01
Deal size	0.082**	0.172***	0.124**	0.106**	0.199***	0.155**
	-2.1	-3.71	-2.16	-2.25	-3.49	-2.28
Relative size	0.025	-0.195	-0.032	0.035	-0.217*	-0.085
	-0.19	(-1.59)	(-0.22)	-0.26	(-1.75)	(-0.59)
Payment type		-0.331	-0.244		-0.14	0.016
		(-1.35)	(-0.90)		(-0.51)	-0.05
Target public		-0.318*	-0.316		-0.137	-0.236
		(-1.79)	(-1.58)		(-0.50)	(-0.81)
Public*Payment		0.249	0.542		-0.035	0.232
		-0.77	-1.51		(-0.09)	-0.49
Control variables	No	No	Yes	No	No	Yes
Sector effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	422	422	376	292	292	263
Adjust R_squared	0.105	0.191	0.224	0.152	0.267	0.309

Table 3.9: Multivariate analysis of strong market reaction on stock price informativeness

The table presents six models explaining the impact of strong market reaction (mearsured by CARover and CARless) on the acquirer's information environment. Model (1) to (3) consider the full sample of available observations while model (4) and (6) focus on control deals. The dependent variable is the change in the acquirer's level of price non-synchronicity after the deal's announcement relative to the level before the announcement. The t statistics reported in parentheses are corrected for heteroskedasticity. N indicates the number of observations. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	All deals			Control deals		
CARless	0.203	0.093	0.068	0.16	0.035	-0.07
	(-1.05)	(-0.51)	(-0.34)	(-0.67)	(-0.16)	(-0.29)
CARover	0.159	0.064	0.158	0.364*	0.234	0.262
	(-0.93)	(-0.38)	(-0.89)	(-1.65)	(-1.1)	(-1.15)
PreINFO		-0.188***	-0.268***		-0.203***	-0.294***
		(-3.51)	(-4.39)		(-3.36)	(-4.32)
CARless*preINFO		0.009	0.06		-0.035	0.018
		(-0.13)	(-0.79)		(-0.44)	(-0.21)
CARover*preINFO		0.089	**0.126***		0.03	0.095
		(-1.2)	(-1.69)		(-0.33)	(-1.09)
Deal size	0.089**	0.175***	0.117**	0.111**	0.205***	0.154**
	(-2.18)	(-3.69)	(-2)	(-2.27)	(-3.47)	(-2.21)
Relative size	0.003	-0.203	-0.008	0.008	-0.237*	-0.073
	(-0.02)	(-1.63)	(-0.05)	(-0.06)	(-1.92)	(-0.49)
Payment type		-0.339	-0.269		-0.149	-0.04
		(-1.36)	(-0.99)		(-0.54)	(-0.12)
Target public		-0.302*	-0.294		-0.146	-0.22
		(-1.69)	(-1.43)		(-0.53)	(-0.74)
Public*Payment		0.254	0.575		-0.006	0.318
		(-0.77)	(-1.59)		(-0.02)	(-0.66)
Control variables	No	No	Yes	No	No	Yes
Sector effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	422	422	376	292	292	263
Adjust R_squared	0.108	0.194	0.231	0.153	0.265	0.308

Table 3.10: Stock Price informativeness and market reaction to announcement on deal completion

This table presents the likelihood of deal completion based on the magnitude of price non-synchoronicity, CAR, deal and financial status of acquirer firms. Column (1) and (2) is estimated on the group of full samples. Column (3) and (4) is estimated on the group of low level of INFO. Column (5) and (6) is estimated on the group of high level of INFO.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Full sample		Low preINFO		High preINFO	
	All deals	Control deals	All deals	Control deals	All deals	Control deals
CARless	**0.531***	0.342	0.209	-0.28	**0.874***	**1.401****
	(-1.73)	(-0.87)	(-0.43)	(-0.43)	(-1.88)	(-2.38)
CARover	-0.367	-0.361	-0.418	-0.581	0.467	1.035
	(-0.66)	(-0.53)	(-0.53)	(-0.55)	(-0.4)	(-0.72)
PreINFO	0.008	0.023	-0.01	0.087	0.003	0.023
	(-0.66)	(-1.55)	(-0.19)	(-1.18)	(-0.17)	(-0.99)
CARless*preINFO	0.02	0.019	0.083	-0.02	0.049	0.087
	(-0.86)	(-0.72)	(-1.06)	(-0.18)	(-1.01)	(-1.46)
CARover*preINFO	0.009	0.017	-0.054	-0.185	-0.019	-0.001
	(-0.28)	(-0.37)	(-0.55)	(-1.47)	(-0.25)	(-0.01)
CARover*Dealsize	0.039	0.043	0.02	0.017	-0.019	-0.067
	(-0.76)	(-0.7)	(-0.25)	(-0.16)	(-0.22)	(-0.61)
CARless*Dealsize	-0.049	-0.03	-0.002	0.031	**-0.091***	**-0.152****
	(-1.62)	(-0.78)	(-0.05)	(-0.52)	(-1.84)	(-2.40)
CARover*Relativesize	0.03	0.043	0.095	0.055	0.044	0.051
	(-0.23)	(-0.26)	(-0.52)	(-0.28)	(-0.08)	(-0.07)
CARless*Relativesize	0.056	0.011	0.025	-0.044	0.322	0.447
	(-0.64)	(-0.11)	(-0.23)	(-0.38)	(-0.73)	(-0.81)
Deal size	0.022	0.029	0.004	0.034	0.024	0.025
	(-1.39)	(-1.35)	(-0.14)	(-0.86)	(-1.09)	(-0.88)
Relative size	-0.098	-0.076	-0.085	-0.063	-0.161	-0.097
	(-1.53)	(-1.00)	(-0.95)	(-0.77)	(-1.07)	(-0.53)
Payment type	-0.069	0.025	-0.147	-0.118	0.01	0.14
	(-0.96)	(-0.24)	(-1.39)	(-0.88)	(-0.09)	(-0.72)
Target public	0.227***	0.132	0.242***	0.116	0.144*	-0.002
	(-4.47)	(-1.41)	(-3.02)	(-0.82)	(-1.95)	(-0.01)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Sector effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	400	281	193	143	207	138
Adjust R_squared	0.2	0.213	0.283	0.293	0.203	0.239

Table 3.11: Multivariate analysis of the acquirer's price non-synchronicity with emphasis on the target's information environment

This table explains the impact of the announcement period CAR on the acquirer' stock price informativeness, which emphasis on how the CAR's effect varies with the target's information as presented by the listing status. The dependent variables is the change in the acquirer's level of stock price informativeness after deal's announcement and level before the announcement. Model (1) considers full sample of deals. Model (2) is estimated only control deals. Control variables include all deal characteristics and firm characteristics variables. N indicates the number of observations. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively.

Variables	**DeltaINFO**	**DeltaINFO**
	All deals	Control deals
CAR	**-59.467*** **	**-65.585*** **
	(-6.92)	(-6.07)
PreINFO	-0.239***	-0.284***
	(-4.86)	(-5.26)
CAR*preINFO	0.564	0.199
	(-0.97)	(-0.3)
Target public	-0.728*	-0.626
	(-1.88)	(-1.01)
CAR*public	59.896***	65.472***
	(-6.89)	(-6.07)
Target private	-0.563	-0.58
	(-1.37)	(-0.96)
CAR*private	61.818***	69.425***
	(-6.93)	(-6.23)
Target subsidiary	-0.346	-0.17
	(-0.81)	(-0.27)
CAR*subsidiary	60.127***	71.254***
	(-6.81)	(-6.69)
Control variables	Yes	Yes
Sector effects	Yes	Yes
Year effects	Yes	Yes
N	376	263
Adjust R_squared	0.293	0.357

Table 3.12: Multivariate analysis of deal and firm characteristics on relative deal size

The dependent variable is measured by the relative deal size and independent variables including group of firm characteristics and deal characteristics. N indicates the number of observations. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively

Variables	(1)	(2)	(3)	(4)
	All deals		Control deals	
INFO	-0.013	-0.015	-0.015	-0.01
	(-0.66)	(-0.93)	(-0.59)	(-0.52)
Q*INFO	**0.018****	**0.020*****	**0.020***	**0.018****
	(-2.2)	(-2.77)	(-1.73)	(-1.97)
Deal size		0.111***		0.114***
		(-5.37)		(-4.4)
Payment type		0.355**		0.445**
		(-2.29)		(-2.21)
Target public		-0.059		-0.092
		(-1.26)		(-1.13)
Control variables	Yes	Yes	Yes	Yes
Sector effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
N	365	365	257	257
Adjust R_squared	0.217	0.424	0.26	0.459

Table 3.13: M&A experience and deal completion

This table presents the likelihood of deal completion based on the experience from previous M&A deal. N indicates the number of observations. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively

Variables	(1)	(2)	(3)	(4)	(5)	(6)
	All deals			Control deals		
Maexp	0.037			0.041		
	(-1.5)			(-1.42)		
Maexpr*Dealsize	-0.003			-0.003		
	(-1.38)			(-1.33)		
Maexp*Relativesize	**0.078****			**0.077***		
	(-2.36)			(-1.96)		
FailureExp		**0.499***			**0.743***	
		(-1.8)			(-1.89)	
FailureExpr*Dealsize		**-0.041***			**-0.063***	
		(-1.70)			(-1.88)	
FailureExp*Relativesize		**0.380****			**0.400****	
		(-2.11)			(-2.16)	
SuccessExp			0.038			0.367
			(-0.14)			(-0.9)
SuccessExp*Dealsize			-0.01			-0.044
			(-0.41)			(-1.17)
SuccessExp*Relativesize			0.026			0.063
			(-0.32)			(-0.55)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Sector effects	Yes	Yes	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	380	380	380	267	267	267
Adjust R_squared	0.223	0.225	0.211	0.233	0.24	0.228

Table 3.14: The role of firm's ownership on completion of M&A deals

The dependent variable is measured by the completion of M&A deal and independent variables including the owned status of firm, firm characteristics and deal characteristics. N indicates the number of observations. ***, **, and * represent significance at the 1%, 5% and 10% levels, respectively

Variables	(1)	(2)	(3)	(4)
	All deals		Control deals	
CAR	-0.305	-0.31	0.169	0.769
	(-0.71)	(-0.47)	(-0.31)	(-0.87)
SOE	0.055		0.102	
	(-0.46)		(-0.56)	
CAR*SOE	1.152		-0.969	
FE		**-0.091***		**-0.110***
		(-1.88)		(-1.67)
CAR*FE		0.132		-0.938
		(-0.16)		(-0.84)
Deal size	0.013	0.012	0.021	0.022
	(-0.82)	(-0.72)	(-0.97)	(-1.04)
Relative size	-0.06	-0.052	-0.033	-0.03
	(-1.24)	(-1.12)	(-0.52)	(-0.47)
Payment type	-0.11	-0.107	-0.059	-0.039
	(-1.44)	(-1.40)	(-0.56)	(-0.37)
Target public	0.179***	0.186***	0.062	0.054
	(-3.55)	(-3.64)	(-0.66)	(-0.57)
Control variables	Yes	Yes	Yes	Yes
Sector effects	Yes	Yes	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
N	365	365	257	257
Adjust R_squared	0.217	0.424	0.26	0.459

Appendix 3.1: Variables' Definitions and Data Sources

	Definition	Source
Managers' Behaviour		
Completed	Dummy variable = 1 if the deal is completed and 0 otherwise	Thomson Reuters SDC database
Market Signal		
CAR	The acquirer's cumulative abnormal returns for the period of 2 days before and after announcement date. The abnormal return each day is the difference between the firm's returns and the market return.	Datastream
CARover	Dummy = 1 if CAR exceeds 75th percentile in my sample, and 0 otherwise.	Datastream
CARless	Dummy = 1 if CAR is smaller than the level 25th percentile in my sample, and 0 otherwise.	Datastream
Stock price informativeness		
PreINFO	The acquirer's degree of stock price informativeness in the year that follows the deal's announcement	Datastream
PostINFO	The acquirer's degree of stock price informativeness in the year that precedes the deal's announcement	Datastream
DeltaINFO	Post_INFO - Pre_INFO	Datastream
M&A experience		
SuccessExp	Dummy variable =1 An indicator variable taking on the value of one if the acquirer done at least 1 completed deal before, and 0 otherwise	Thomson Reuters SDC database
FailureExp	Dummy variable =1 An indicator variable taking on the value of one if the acquirer experience failure deal then have at least 1 completed deal later, and 0 otherwise	Thomson Reuters SDC database
Maexp	Total number of successful M&A deals	Thomson Reuters SDC database
Deal characteristics		
Deal size	Natural logarithm of the total value of the transaction in thousands of Vietnam Dong	Thomson Reuters SDC database
Control deal	The share's percentage of acquiror firm lower than 50% before M&A and become more than 50% after merging	Thomson Reuters SDC database

Relative size	The deal size divided by the acquirer's pre-acquisition market valuation.	Thomson Reuters SDC database
Target public	Dummy variable =1 if the target firm is publicly traded, and 0 otherwise.	Thomson Reuters SDC database
Target private	Dummy variable =1 if the target firm is private traded, and 0 otherwise.	Thomson Reuters SDC database
Target subsidiary	Dummy variable =1 if the target firm is subsidiary traded, and 0 otherwise.	Thomson Reuters SDC database
Payment type	Dummy variable =1 if some stock was used in financing the deal, and 0 otherwise.	Thomson Reuters SDC database
Firm characteristics		
Leverage	Natural logarithm of firm's leverage	Datastream
TobinQ	Tobin's Q index	Datastream
Cash	Natural logarithm of firm's Cash in million Vietnam Dong	Datastream
DIV	Natural logarithm of firm's dividend in million Vietnam Dong	Datastream
SOE	State-owned enterprises. Dummy variables =1 if State own more than 50% of share	Datastream
FE	Family enterprises. Dummy variables =1 if firms are governed by family	Datastream

CHAPTER 4
REASSESSING CEO DUALITY IN VIETNAM: THE EMERGING AGENCY CONFLICTS AND THEIR IMPACT ON M&A PERFORMANCE

Abstract

This paper re-examines how CEO characteristics affect M&A performance in Vietnam. I partly replicate the study by Pham et al. (2015) using an updated sample of 419 M&A deals from 2008 to 2022. Like the original study, I find that CEO duality (when the CEO is also Chairman of the board) is linked to higher stock returns in the 2008–2014 period. However, this positive effect disappears after 2015. This suggests that CEO duality may improve performance in contexts with low agency conflicts, such as earlier stages of Vietnam's market. In the second part of the paper, I extend the analysis by testing new governance factors. My results show that in the more recent period, CEO education and board diversity have become more important drivers of M&A performance.

Keywords**:** CEO duality, CEO education, M&A performance, internal governance mechanism

JEL Codes*: G34, G38*

4.1. Introduction

The impact of CEO duality, where the Chief Executive Officer also serves as the Chairman of the Board, is widely recognized as an important factor in corporate governance, particularly in relation to mergers and acquisitions (M&A) performance. Recent studies have argued that CEO duality may weaken the board's ability to effectively monitor and control managerial behaviour, increasing the risk of self-interested decisions (Mubeen et al., 2021; Nguyen and Huynh, 2023; Yu, 2023). However, other research suggests that in certain contexts, where the interests of managers and shareholders are closely aligned, concentrating power in the CEO can strengthen managerial control and improve firm performance (Freund, 2021; Dao and Hoang, 2022). The relationship between CEO duality and M&A performance is often explained through two opposing theories: agency theory and stewardship theory. These theories provide the foundation for understanding the potential positive and negative impacts of CEO duality. Agency theory argues

that conflicts between managers and shareholders arise because managers may act in their own self-interest rather than prioritizing shareholder value. In this view, CEO duality poses a risk to M&A performance because it reduces board oversight, increases managerial entrenchment, and encourages a focus on expanding firm size rather than improving profitability (Nguyen and Huynh, 2023). In contrast, stewardship theory emphasizes the potential benefits of CEO duality, suggesting that combining the roles of CEO and board chair can lead to faster decision-making, greater leadership efficiency, and reduced agency costs (Tang, 2017).

Given the limited number of studies and Vietnam's unique institutional and governance characteristics as an emerging market, this study provides an opportunity to extend the existing literature. In the early developed period of Vietnam' s market, where firms are massively State-owned enterprises (SOEs) and Family-owned enterprises (FOEs), there are not really an agency conflict in the classical sense. The agency problem seems to be mitigated by various unique characteristic and stewardship theory seemed more suitable to explain the relationship between managers and shareholders in Vietnam (Pham et al., 2015). The explanation for this statement comes from (i) the consensus on the company's long-term development goals; (ii) trust from shareholders on the leadership of managers because of their long-standing relationships or familial ties (in the case of family businesses), or due to the existence of monitoring systems for management activities in SOE[14] ; (iii) the shareholders and managers' interests in this period are quite close. Therefore, in Vietnam case, CEO duality is not a problem. However, along with the development of economy, the context of corporate governance in Vietnam has evolved: CEO characteristics have changed, ownership structures have diversified, and corporate cultures have shifted. Consequently, Vietnam has moved from a unique context specific to its historical conditions to one that resembles the governance environments of developed market such as the US or Europe.

The relationship between CEO duality and M&A performance remains inconclusive and appears to depend heavily on the specific governance environment. In this paper, I examine how CEO duality and other corporate governance factors influence M&A performance in the context

[14] In addition to internal monitoring mechanisms such as the supervisory board and the Party Committee, SOE must also comply with oversight from the State authority. For instance, state-owned enterprises in the agricultural sector fall under the management of the Ministry of Agriculture and Rural Development.

of Vietnam. Specifically, I aim to answer three research questions: First, how have regulatory reform since 2015 affect corporate governance practices in Vietnam? Second, does CEO duality in Vietnamese firms mitigate agency conflict, leading to value creation by M&A deals or exacerbate agency cost? And third, what new determinants drive M&A performance in Vietnam's evolving context?

There are several reasons to choose 2015 as the year for separating research period. From 2015 onwards, the legislation, economic, and cultural contexts have undergone numerous changes, resulting in significant alterations in corporate governance in Vietnam: (i) decree 121/2007/QD-TTg from Vietnam Prime Minister led to the establishment of over 100 new colleges and universities. In the end of 2015, the number of youths who have at least college degrees are double than 8 years before (Vu, 2023). This policy help enhancing the quality of Vietnamese management and based on the knowledge they gain from university; they can provide more comprehensive decision; (ii) the regulatory and legal framework pertaining to corporate governance has gradually evolved. The Enterprise law 2014 and 2020, alongside the Securities law of 2019 and the Competition law of 2018, have established a more comprehensive legal framework for corporate governance, aiming to the segregation between company owners and managers and enhancing shareholders' oversight rights over company operations. Specifically, according to decree 71/2017/ND-CP and Enterprise law 2020, public company forbid CEO duality and the separation between CEO and Chairman is recommended in Vietnam; (iii) the recovery of Vietnam economy after small crisis in 2008-2012. the development of Vietnam's economy leads to an increase in business diversity. Therefore, the agency problem happens when managers ignore or avoid promoting diversity, even though doing so could help the company succeed in the future (Booth-Bell and Jackson, 2021). CEOs and managers can be recruited from the outside and the loose attachment between CEOs and their companies often leads them to focus solely on short-term goals (Lee et al., 2018). The shift in labour structure has attracted numerous foreign managers to work in Vietnam, which has not only contributed to enhancing business performance but also exposed cultural disparities between these managers and Vietnamese employees or shareholders, potentially leading to conflicts (Vo et al., 2020; Nguyen and Huynh, 2023). Furthermore, the growing size of Vietnamese firms has resulted in an upsurge in the number of secondary investors. This trend can engender potential conflicts between shareholders and managers.

[Insert Figure 4.1 about here]

Figure 4.1 provides an overview of the change in average percentage of CEO duality and the SOE from 2006 to 2022. The CEO duality experiences a relatively stable period from 2006 to around 2013, staying within the range of 30 to 40%. From 2014 onwards, there is a declining trend, and it becomes more pronounced after 2017 then dramatically drops to near-zero levels [15] by 2020-2022. In the other hand, the proportion of SOEs declined constantly from 2006 to 2022. This trend is steepest from 2010 onwards, along with the privatization efforts in Vietnam. It is worth noting that the percentage of adults who hold an undergraduate degree in Vietnam triple from 10 percent in 2006 to about 30 percent in 2022. In conclusion, the year of 2015 could be seen a milestone for the change in corporate governance in Vietnam since the agency conflict potential arise.

My analysis begins by examining whether the corporate governance environment of Vietnamese firms has changed over time. Specifically, I apply an equal variance T-test to compare key governance indicators across two periods: 2008–2014 and 2015–2022. The results reveal significant differences in both CEO characteristics (including gender, educational background, tenure, turnover, and duality) and board characteristics (such as size, independence, and diversity). The findings show a notable decline in several governance indicators, including the proportion of firms with CEO duality, the number of CEOs holding a PhD, the size of the board, the percentage of male directors on the board, and the share of state-owned enterprises (SOEs). Conversely, I observe an increase in the number of CEOs with educational backgrounds in Economics, Finance, or Management, as well as higher CEO age, longer CEO tenure, and a greater proportion of non-executive directors on boards. These shifts suggest a transformation in the governance landscape, moving from traditional structures—often characterized by concentrated leadership and state ownership—toward more diversified and professionalized boards. However, such changes may also increase the potential for agency conflicts. As ownership becomes more dispersed and boards become more independent, the alignment between managers and shareholders may weaken, creating new challenges in monitoring managerial behaviour and safeguarding shareholder

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[15] The decree 71/2017/ND-CP banned the Chairman of the BOD and the CEO from being the same person, and this regulation took effect in 2020.

interests. This highlights the importance of revisiting governance practices to ensure they remain effective in this evolving context.

All the factors mentioned contribute to the acceleration of conflicts between shareholders and managers. In this case, agency theory suggests that shareholders should apply control mechanisms to reduce that potential conflict. Internal governance mechanisms such as the level of power concentration of CEOs (measured through CEO duality), the quality of leaders trained in business (measured through the CEO's education level). Market for corporate control (M&A) is one of the most popular external control mechanisms. The research of Pham et al., (2015) shows that the uncommon of anti-takeover provision and multi-layer monitoring mechanism in Vietnam could lead to the mitigation of agency conflict. However, the context of Vietnam economy has undergone significant changes since 2015. The diversity among shareholders and within the board raises concerns about conflicts of interest. Therefore, it requires a re-verification an impact of traditional discipline mechanisms on the quality of Vietnamese M&A. Thus, I replicate the results from the benchmark paper of Pham et al. (2015) when they consider the role of CEO duality on M&A performance during the period 2008 -2014 and using a set of deal and firm characteristics as control variables. My sample cover 4,143 deals from Vietnamese bidder announced between period of 2008 to 2022. I observe that about 10% of deals meet prerequisite conditions (see Table 4.1), which represents 419 deals. Following the M&A literature, I measure value creation using Cumulative Abnormal Returns (CAR) of bidders around the M&A announcement. My result is consistent with original paper when CEO duality significantly positive impact on short-run M&A performance. It suggests that during the period from 2008 to 2014, CEO duality may improve performance in contexts with low agency conflicts, such as earlier stages of Vietnam's market. From 2015 onward, when the level of agency conflict potentially increases, this relationship changes dramatically. I continue to apply the same analysis but for the new period, the correlation between CEO duality and M&A performance disappear. It indicates that when a potential agency conflict arises due to the change in governance context, the power concentration of top managers does not play a beneficial role, likely due to faster decision-making and stronger leadership. It also indicates that the agency theory is more appropriate than stewardship theory for explaining the role of corporate governance and firm performance in Vietnam. As the governance norms evolved in later periods, the effect of CEO duality diminished due to better board oversight, regulatory improvement or investor expectations shifting.

In the third part of my analysis, I further investigate whether newly identified governance factors influence long-term M&A performance in Vietnam's changing governance environment. To measure post-M&A operational performance, I adopt industry-adjusted Return on Assets (deltaROA), following the approach of Leng and Zhao (2013) and Pham et al. (2015). DeltaROA is calculated as the difference between the firm's average ROA in the post-deal period (one to two years after the acquisition) and the average ROA in the pre-deal period (one to two years before the acquisition). This method helps control industry-wide and macroeconomic factors, providing a clearer picture of the firm-specific performance impact of M&A activities. I evaluate the influence of new governance variables on deltaROA while controlling deal characteristics. My findings highlight the important role of CEO qualifications in enhancing post-M&A performance. Specifically, CEOs holding a PhD degree are found to generate greater value for acquiring firms after the deal. However, when examining CEOs with academic backgrounds in Economics, Finance, or Management, the results indicate that holding such qualifications alone does not have a significant effect on deltaROA. Interestingly, when a CEO holds both a PhD degree and a specialization in Economics, Finance, or Management, the combined effect becomes statistically significant. This suggests that advanced academic training may strengthen the practical value of domain-specific education, enabling CEOs to apply their expertise more effectively in complex post-merger integration processes. Additionally, I observe that male CEOs tend to deliver higher post-M&A performance compared to their female counterparts. This may reflect cultural or organizational dynamics in Vietnam, where male executives often occupy dominant leadership positions and may face fewer barriers to exercising their authority in strategic decisions. However, this finding should be interpreted with caution, as gender-related outcomes may be influenced by structural biases or limited representation of female leaders in the sample. I also explore the role of board diversity in shaping M&A outcomes. My analysis suggests that male dominated boards may benefit from a stronger alignment of views, potentially leading to more unified decision-making and less resistance to the CEO's leadership.

In summary, I find that with the changes in the corporate governance context in Vietnam from 2015 onward, CEO duality no longer creates wealth for shareholders through M&As. In this new context, agency problems necessitate governance practices that align with international standards, and qualified CEOs with a high level of education or more diverse Board are significantly correlated with M&A performance. This research contributes to M&A literature in

several main aspects. First, this study contributes to the corporate governance literature by addressing a critical gap in empirical research on emerging markets, which remains underrepresented compared to studies in developed economies. I clarify the Vietnam's governance evolution by pointing out the differences between various firm's governance indicators in two periods before and after the year of 2015.

Second, I update viewpoint on CEO duality in Vietnam's governance evolution. While existing literature predominantly examines CEO duality in Western contexts (Fama & Jensen, 1983; Krause et al., 2014), my findings reveal how Vietnam's transitional regulatory environment and familial ownership structures modulate the costs and benefits of concentrated leadership roles. From previous paper, especially for Vietnam context, there is no exacts answer to the relationship between the internal governance mechanism and firms' performance. In this paper, I verify paper of Pham et al., (2015) but I emphasize that because of the absence of anti-takeover provisions, Vietnamese firms focus on internal governance mechanism. I found that Vietnamese CEO with power creates wealth for the shareholder from M&A for period when potential agency conflict seems to be low. However, this result is reversed during periods with high potential agency conflicts.

Third, from the perspective of professional characteristics in an educational experience, this paper expands the existing research on the impact of CEOs' characteristics on corporate behaviour. I emphasis the role of high-level education of CEO and diversity of Board on M&A value creation Previous literature has investigated the work experience of CEO (Jiang et al., 2013; Kalelkar and Khan, 2016). High education is a meaningful way to acquire professional knowledge and capabilities of CEO, but in the past, scholars have not paid enough attention to the role of CEO' education experience in integration environments such as post-M&A period. This paper insight aligns with the argument that well-educated CEO, particularly those with expertise in economics and financial management, are better equipped to handle complex integration processes, risk management, and strategic decision-making in M&A deals. By demonstrating a clear link between CEO educational background and post-M&A firm success, this study provides new empirical evidence supporting the importance of CEO qualifications as a determinant of corporate performance in the context of M&A.

This paper is organized as follows. The first section provides research motivation and summary paper's result. The next section presents literature review and develop research hypothesis. The third section examines the sample and variables. The fourth replicated benchmark paper by considering the relationship between CEO duality on M&A performance in the same period, then testing this relationship in an up-to-date period. The next part I study how new variables of interest could affect to the performance of acquirer in post-M&A period, and the last section offers a conclusion and research limitations.

4.2. Literature Review and Hypothesis Development

4.2.1. CEO duality and M&A performance

There are several corporate governance mechanisms that are proposed to reduce the agency costs related to the separation of managers and shareholders, including internal and external governance mechanisms. Internal mechanism focuses on the characteristics of managers (CEO, CFO and other top directors) and the composition of the Board. On top of that, CEO duality has been the subject of academic interest for a few decades and empirical research shows mixed impacts of CEO duality on firms' performance.

The relationship between CEO duality and M&A performance is often explained through two contrasting theoretical perspectives: agency theory and stewardship theory. According to agency theory, the separation of ownership and control creates potential conflicts of interest between shareholders and managers. In this context, CEO duality can weaken the board's oversight role and negatively affect post-M&A performance for several reasons. First, in a well-functioning governance structure, the CEO is responsible for making and executing strategic decisions, while the board is tasked with monitoring and overseeing these decisions to protect shareholder interests. When the CEO holds both positions, this concentration of power reduces the board's ability to perform its monitoring role effectively. As a result, a powerful CEO may prioritize personal interests over shareholder value, pursuing value-destroying actions such as empire-building through unnecessary acquisitions or restructuring the board to consolidate personal control (Liu et al., 2014; Mubeen et al., 2021; Yu, 2023). Second, CEO duality can prevent the cultural integration process between the acquiring and target firms. A dominant CEO may impose their own company's culture on the acquired firm, disregarding feedback or alternative perspectives. This top-down approach can lead to employee resistance, lower morale, and integration challenges that undermine

the success of the merger or acquisition (Gong and Guo, 2014; Tang, 2017). Third, excessive concentration of power may lead to overconfidence, causing the CEO to overestimate the potential benefits of the deal or make poorly evaluated strategic choices. Such behavior can result in unrealistic expectations and suboptimal outcomes (Fralich and Papadopoulos, 2018; Hwang et al., 2020; Gurdgiev and Ni, 2023). Empirical evidence also supports these concerns. For example, Nguyen and Huynh (2023) found that CEO duality is negatively associated with financial performance, as measured by Return on Assets (ROA) and Return on Equity (ROE), although it appears to have a positive effect on Earnings Per Share (EPS). Similarly, Assenga et al. (2018) reported that CEO duality had a negative impact on the financial performance of publicly listed companies in Tanzania. These findings suggest that the risks associated with CEO duality often outweigh its potential benefits, particularly in governance environments where board independence and effective oversight are weak.

In contrast to agency theory, stewardship theory proposes that managers act as responsible stewards whose interests are aligned with those of shareholders. According to this perspective, CEO duality can improve firm performance by enabling more effective leadership and control. Stewardship theory challenges the assumption that all managers are primarily driven by self-interest, suggesting instead that many managers are motivated by organizational success and long-term value creation. In the context of developing countries, where corporate governance mechanisms may be less formalized, CEO duality can help centralize authority within the Board of Directors, leading to more cohesive decision-making. For example, CEO of Family-owned firms, especially those who are family members or founders, often have long-standing relationships and shared goals with other board members, facilitating cooperation and alignment toward the firm's development objectives (Dao and Hoang, 2022). Similarly, long tenured CEOsmay shape the board by appointing directors who share their leadership style and strategic vision, reinforcing their alignment with the firm's long-term interests. These CEOs tend to integrate their personal reputation and self-worth with the success of the firm, further strengthening their commitment to shareholder value. Moreover, CEOs with substantial influence are often better positioned to lead post-merger integration by promoting a unified vision and strategy for the combined entity. This leadership advantage can be even stronger when the CEO has connections with government authorities, providing access to valuable information and reducing regulatory uncertainty (Tao et al., 2018; Freund, 2021). In such cases, shareholders may place greater trust in

the leadership of powerful CEOs, especially when these leaders have established long-term relationships with the firm through tenure or ownership. This trust can help stabilize the organization during transitional periods and support sustainable growth (Dutta, 2011). Empirical evidence from Pham et al. (2015) supports this view in the Vietnamese context, showing that firms where the CEO also serves as Chairman tend to perform better than those where the CEO holds no board leadership role or serves only as a regular board member. The concentration of power in such cases allows for greater autonomy and decisive leadership, which can enhance corporate performance and benefit strategic decisions like mergers and acquisitions (M&A). However, evidence remains mixed. Chadam (2018) reported no significant impact of CEO duality on M&A deal effectiveness, while Desai et al. (2003) found that although CEO duality may improve long-term performance, it is associated with higher acquisition costs, which can reduce the overall financial benefits of the deal.

4.2.2. CEO characteristics and M&A performance

Besides CEO duality, another characteristic of CEO could be tenure, education, age and gender. Tenure is another indicator to measure CEO power, the idea is that when CEO have long-standing relationships with firms, they have a chance to reshape the Board with their style. CEO tenure can significantly influence M&A decisions (Brahmana et al., 2021). Research by Chen et al. (2019) found that high-tenure CEO tend to execute better M&A deals, and the stock market often reacts positively to the announcements of these deals. During the initial years in office, extensive learning and development occurred, making it challenging for a new CEO to acquire sufficient job knowledge. As a result, a CEO with several years of experience is better equipped to execute acquisitions than inexperienced executives (Tao et al., 2018). Other research indicates a linear relationship between CEO tenure and M&A returns, showing that performance increases as year of tenure rises from low to moderate levels, but gradually decreases in the later years of tenure (Walters et al., 2007). At an intermediate level of tenure, CEO are more likely to have gained knowledge, confidence, and familiarity with key competitive factors, enabling them to make effective acquisition decisions. This context fosters the realization of positive benefits from acquisitions, such as gaining access to new knowledge, maintaining corporate agility, and overcoming organizational inertia (Wang, 2002). However, long-serving CEO may accumulate

significant power over the board, potentially leading them to pursue acquisitions that benefit their interests rather than those of the shareholders.

Evaluating a CEO's ability can be challenging, so objective and easily measurable characteristics like education level often play a significant role in assessing a CEO's capabilities, particularly in complex operations such as M&A. Education level is frequently used as a proxy for human capital in empirical studies (Barro and Lee, 2013). In the context of M&A, which is complex and impactful, a CEO needs higher competence and specialized knowledge compared to general company operations. Research has shown that a CEO's education level can significantly affect M&A performance. For instance, Wang and Yin (2018) found that in US companies, CEO are more successful in acquiring target companies headquartered in the states where they obtained their degrees. Additionally, Plaksina et al. (2019) indicate that educational level influences a CEO's likelihood of participating in M&A deals. Andrade and colleagues suggest that highly educated CEO may avoid risky M&A activities due to the potential negative impact on stock value. Buenting (2022) discovered that CEO with honours degrees and doctorates are associated with higher abnormal returns from M&A, while those with only a bachelor's degree predict lower returns. Overall, a CEO's higher education level tends to positively impact on M&A performance. CEO with advanced degrees in finance and business administration have more competence and expertise in M&A decision-making, thereby improving performance. Custodio et al. (2013) found that professionally educated CEO can create and execute more effective M&A plans, enhancing value. They report that CEO with MBA degrees price M&A targets more accurately, leading to more cost-effective acquisitions. Experienced and highly educated CEO can also communicate more effectively with regulators, financial companies, and other stakeholders, facilitating better information processing and decision-making during M&A (Wang and Yin, 2018). However, a CEO's education level can also have adverse effects on M&A performance. Highly educated CEO might use their knowledge for personal gain. Chiang et al. (2016) found that CEO sometimes manipulate financial reports using their expertise, which can extend to M&A activities. M&A deals can offer personal benefits like economic gains and career advancement. Motivated by self-interest, CEO might engage in more M&A deals that are not in the company's best interest, potentially overvaluing acquisition targets and harming the company.

The impact of CEO age on firm performance has been widely studied, but the finding remains mixed. Generally, younger CEO is associated with greater dynamism and innovation,

while older CEO tend to prefer stability and are often more risk averse (Phan and Tran, 2017). This finds that company performance tends to improve as CEO age increase up to around 45 years old, after which further increases in age are linked to declining performance. However, when considering different stages of the corporate life cycle, Wang (2022) reports that CEO age has a positive effect on firm performance during both the growth and decline stages but shows no significant impact during the maturity stage.

4.2.3. Board composition and M&A performance

In terms of Board composition, it refers to the size, the independence and the diversity of Board. A well-structured board of directors could adopt a long-term perspective on the deal's value, addressing biases that may affect decision making and goal setting. Their roles include evaluating value-creation opportunities, scrutinizing merger integration plans, and assisting managers in establishing a competitive corporate advantage in M&A. Specifically, empirical studies suggest that the number of board members can impact a firm's performance, but findings on the direction of this influence are inconsistent. Kiel & Nicholson (2003) argue that a larger board size helps share the burden of management and control, gathers more information, and increases intellectual capacity. Gafoor et al. (2018) indicates that an optimal board size of 6 to 9 members positively affects firm performance. Similarly, Nguyen and Huynh (2023) find that board size positively impacts corporate performance in Vietnam through ROA and ROE indicators and an effective board of directors is crucial for corporate activities, including M&A. Conversely, Le et al. (2023) suggest that excessively large boards disrupt communication and decision-making, reducing effectiveness. They argue that larger boards weaken individual responsibilities, leading to less active participation in decision-making and a tendency to conform to majority decisions without thorough debate, potentially impairing M&A negotiations. Al-Absy and Hasan (2023) find that board size is unrelated to firm's performance when using indicators such as ROA, ROE, and EPS, suggesting that increased board size complicates management, potentially hindering M&A negotiations.

Gender diversity on board is another critical factor. Empirical studies demonstrate that female board members impact business performance and sustainability, including the effectiveness of M&A processes. Hoang et al. (2019) notes that female managers often behave ethically, are less overconfident, and are more cautious. Huang and Kisgen (2012) find that companies led by women

are less likely to make acquisitions but achieve higher returns on announced acquisitions than those led by men. Female board members can offer diverse opinions and perspectives, enhancing multi-dimensional discussions and leading to better decision-making. Shams et al. (2024) highlight women's contributions to streamlining deal terms and monitoring post-M&A activities, contributing to deal success. Francoeur et al. (2008) find a positive relationship between the ratio of female senior management and abnormal returns in complex environments, though no significant relationship with the proportion of women on the board. However, some studies, such as those by Campbell and Minguez-Vera (2008), Chapple and Humphrey (2014), and Saidu (2019), find a negative association between board gender diversity and firm performance. These inconsistencies may arise from different analysis periods, political and social environments, institutional backgrounds, and performance measures. Most research on gender diversity examines US and European companies, with few studies in Asian countries, especially Vietnam. Vietnamese public firms may differ in political, social, and cultural contexts, affecting women's participation in business. Vu et al. (2018) note that Vietnamese media often associates female leaders with traditional roles, influencing perceptions and opportunities for women in management positions.

The number of non-executive directors on the board also reflects a firm's governance. Byrd and Hickman (1992) find that having more than 50% non-executive directors on the board significantly increases a company's cumulative abnormal return (CAR) at the time of M&A deal announcements. Vo et al. (2020) report higher corporate performance with more non-executive directors. They explain that non-executive directors, with their extensive knowledge, bridge senior and executive management, play crucial roles in monitoring and supervising, including M&A activities. However, Martin & Herrero (2018) argue that a higher number of non-executive directors can reduce overall performance and indirectly affect M&A dynamics. They state that non-executive directors may lack specific knowledge or experience, hindering effective operations.

4.2.4. Hypothesis development

Previous studies have shown that the relationship between corporate governance and M&A performance remains inconclusive and is often highly dependent on the governance environment of the market under investigation. In early-stage or transitional markets such as Vietnam where SOEs and FOEs have historically dominated, the market structure does not fully align with

conventional corporate governance models typically observed in developed economies. Despite this, much of the existing research on Vietnam tends to treat governance conditions as static, without fully addressing how Vietnam's corporate governance environment has evolved over time. This represents a significant gap in the literature, as governance structures in Vietnam have undergone important transformations due to economic reforms, privatization efforts, and regulatory changes. While prior studies have identified several governance factors that influence post-acquisition performance, particularly for acquiring firms, these studies often fail to account for how shifting governance conditions may alter these relationships over time. Building on this foundation, the present study aims to examine how the evolution of Vietnam's governance environment may change the way corporate governance factors influence M&A outcomes. This is especially important given that earlier findings suggested that strong alignment between managers and shareholders, often driven by familial ties or state control, contributed positively to firm performance and wealth creation in Vietnam.

However, as Vietnam's governance structures continue to modernize and move closer to international standards, it is no longer clear whether these earlier relationships still hold. The changing environment raises new challenges and opportunities, suggesting that traditional governance frameworks may no longer be fully applicable in transitional markets undergoing regulatory and institutional transformation. Therefore, this study seeks to reassess and extend existing knowledge by providing updated empirical evidence on the role of corporate governance in Vietnam's M&A performance, helping to clarify how governance dynamics evolve in emerging and transitional economies.

Hypothesis 1: There is a significant change in CEO characteristics and Ownership structure in Vietnamese firm after the year of 2015.

Hypothesis 2: There is a significant impact of CEO duality on M&A performance

Hypothesis 3: The post-M&A performance could be affected by new determinant rather than CEO duality in the new governance context of Vietnam market.

4.3. Data and Empirical Methods

4.3.1. Data source

The list of Acquisition announcements by Vietnamese firms is sourced from the Thomson Financial SDC Platinum Mergers and Acquisitions database in Refinitiv workspace. This database is chosen for its coverage of Vietnamese M&A activity, providing the most comprehensive records of date announcement, deal status (completed/withdrawn/on-going), transaction value and participant details compared to alternative sources[16]. I obtained information about corporate governance data from the VietstockFinance database[17]. The information about the CEO characteristics (age, educational level, duality, tenure) and Board characteristics (board size, independence, gender diversity). I consider all firms in two main Vietnam stock markets (Ho Chi Minh City Stock Exchange- HoSE, Hanoi Stock Exchange- HNX. The price of acquirer stock and financial index to calculate firms' performance indicator are collected in DataStream through Eikon software.

4.3.2. Sample construction and Data processing

The research period in this paper is 14 years from 2008 to 2022. This time is selected for two key reasons: First, while the establishment of the HoSE in 2000 and the HNX in 2005 laid the institutional groundwork for Vietnam's capital markets, it was not until 2008 that the market entered a phase of accelerated growth and maturation. This post-2008 expansion reflects increased M&A activity, greater foreign investment inflows, and the emergence of a more robust regulatory environment—critical factors for studying corporate governance dynamics. Second, the 2008–2022 timeframe captures two distinct governance regimes in Vietnam: (i) the pre-2015 era, characterized by state-dominated ownership and limited agency conflicts, and (ii) the post-2015 period, marked by regulatory reforms (e.g., Enterprise Law 2014, 2020), privatization of state-owned enterprises (SOEs), and the professionalization of management.

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[16] SDC Platinum's maintained records of 4269 Vietnamese deals, versus Bloomberg's 3412 for same period 2008-2022. Other database from Vietnam such as VietstockFinance or FiinGroup suffer from reporting lags and inconsistent archival records pre-2015.

[17] VietstockFinance is the system of macro, finance and security database which aim to provide accurate, up-to-date and complete data for multipurpose such as investment analysing, academics or platform development. The website is https://en.vietstock.vn.

I identified 4,143 M&A announcements by filtering acquirer is Vietnam only. I impose the following conventional restrictions on the sample: (i)The acquiring companies must be Vietnamese public firm and must be listed on HNX or HoSE and have a DataStream Code (ii)The target is a private, public, or subsidiary firm (iii) I exclude buyback deals. I merge the stock price data with M&A transaction data using the DataStream codes associated with each firm. However, merging the governance index data with other datasets presented several challenges. Specifically, the governance database employs a unique three-character coding system (VNCode) to identify Vietnamese public firms, making direct merging via DataStream codes unfeasible. Additionally, inconsistencies arise due to Vietnamese firm names being recorded with tone marks, complicating matching procedures across databases. To address these issues, I apply the following steps. First, I create two separate files: one containing DataStream codes alongside firm names in English, and another featuring VNCodes and Vietnamese firm names. Subsequently, I remove all tone marks from the Vietnamese firm names. To further standardize the data, I eliminate specific keywords such as "joint stock company," "JSC," "company," "corporation," and "commercial bank," along with special characters including "&", ",", "-", and spaces. This process yields clean firm names devoid of extraneous elements. Following data cleaning, I employ the Jaro-Winkler similarity measure to estimate the correspondence between firm names across the two datasets. I retain the ten highest-ranked potential matches from this similarity analysis and manually verify their accuracy. Ultimately, this procedure results in a comprehensive file containing both DataStream codes and VNCodes and I use this file to merge all databases together. The sample was screened to ensure that the acquirer firm had a daily stock price available for at least 100 trading days period and 2 trading days around the announcement date. Acquisitions on different days or years of the shares of the same company were considered separate events if an estimation and event windows did not overlap. If the announcement date happens on the following special days such as Labor Day, The Independent Day or other public holiday, I will choose the price of the nearest day to the announcement date instead.

It is important to note that the currency used in the Thomson SDC and Datastream databases is the US Dollar (USD), whereas the VietstockFinance database reports values in Vietnamese Dong (VND). Therefore, I convert all values from USD to VND using the average annual exchange rate for each year from 2008 to 2022. Given that the Vietnamese Dong is a low-denomination currency, I express values in billions of VND to simplify the figures and reduce the number of zeros in the

calculations. The data for exchange rate is collected by State Bank of Vietnam. For all the issues required above, the final dataset contains 419 M&A announcements concerning the merger of 181 acquired companies (The detail is shown in Table 4.1)

4.3.3. Variables Construction

Short-term M&A performance

To assess short-run M&A performance, I measure how the market immediately evaluates the value created by M&A deals. For this purpose, I use an event study method to calculate the abnormal return (AR) of the acquiring firm's stock following the announcement of an M&A deal. An abnormal return represents the market's reaction to the announcement and is calculated as the difference between the firm's actual stock return and its expected return.

$$\mathrm{AR}_{i,t} = \mathrm{R}_{i,t} - \mathrm{NR}_{i,t} \quad (1)$$

where AR_{it} is the abnormal return for stock i in time t (daily in this research), R_{it} is the actual stock return for stock i in time t, measured by acquirer's stock return index, $NR_{i,t}$ is the normal return for stock i in time t, measure by the market return index. The data about stock price is collected in Datastream through Eikon software

Based on the abnormal returns, I calculated cumulative abnormal returns (*CAR*) for a specific event window where $\mathrm{CAR}(-\mathrm{n}, \mathrm{n})$ can be calculated by summing the abnormal return for an event window.

$$CAR_{i,t}(-n, n) = \sum_{-n}^{n} AR_{i,t} \quad (2)$$

In an event study analysis, the event window is the period during which the market's reaction to an event is measured. This window can vary depending on the specifics of the study. A common choice is (-1;1) (Mulherin and Boone, 2000; (Pham et al.,2015) or (-2,2) (Kau et al., 2008) or (-3,3) (Erragragui et al., 2023). In this research, I choose two days around the announcement date (-2;2) as a period of the event window. This window is used to capture the short-term returns that are gained by M&A announcement.

Long-term M&A performance

To examine the impact of M&A activities on long-term performance of the combined firms, I select an accounting profitability ratio that is related to the return of assets indicator. Firstly, I calculate *ROA*, which is measured by *EBITDA* divided by total assets to reflect the operating performance that is free from possible distortions of financing choice and depreciation.

$$ROA_{i,t} = \frac{EBITDA_{i,t}}{TotalAsset_{i,t}} \tag{3}$$

where the time t including one-year, two-year period before and after the deal announcement. Applying with the same period, I calculate the industry adjusted ROA by taking the median ROA value of all firms who have the same SIC codes. I next estimate the average ROA for pre and post M&A period by following formula

$$PostROA_i = \frac{\left(ROA_{i,t+2} - adjROA_{i,t+2}\right) + \left(ROA_{i,t+1} - adjROA_{i,t+1}\right)}{2} \tag{4}$$

$$PreROA_i = \frac{\left(ROA_{i,t-2} - adjROA_{i,t-2}\right) + \left(ROA_{i,t-1} - adjROA_{i,t-1}\right)}{2} \tag{5}$$

where $adjROA_{i,t-1}$ is industry-adjusted ROA of acquirer firms in year t-1, $adjROA_{i,t-2}$ is industry-adjusted ROA of acquirer firms in year t-2, $adjROA_{i,t+1}$ is industry-adjusted ROA of acquirer firms in year t+1 and $adjROA_{i,t+2}$ is industry-adjusted ROA of acquirer firms in year t+2.

$$DeltaROA_{\,i} = PostROA_i - PreROA_i \tag{6}$$

Finally, $DeltaROA_i$ is a variable that equals the difference between the post-M&A ROA and pre-M&A ROA of the acquiring firm.

CEO characteristics

CEOduality occurs when the CEO of the firm also takes the role of chairman in the board of directions. These variable accounts value of 1 if CEO also serves as Chair of the board of directors and 0 otherwise. This governance structure can influence M&A performance in both positive and negative ways, depending on the firm's context and governance environment. In firms or markets with weak external governance mechanisms, CEO duality may increase risks. However, in contexts where managerial and shareholder interests are closely aligned, CEO duality may enhance performance by enabling faster and more cohesive decision making. In this study, I expect that

there is a difference between impact of *CEOduality* on M&A performance for two period before and after 2015.

CEOedu_PhD measure the highest educational level of acquirer's CEO. The key factor of production function is human capital, and it is primarily based on the education level of staff, especially managers such as directors. CEO education is a strategic resource to enhance the company's growth and can have a positive influence on the company's strategy. Following Saidu (2019), I use *CEOedu_PhD* as the level of education attained by CEO as dummy variable which equals to 1 if CEO have PhD degrees and 0 otherwise. I expect that the CEO, who has higher levels of education might make a greater attribution to the performance of firms.

CEOecon measures the academic background of a CEO. I create dummy variable which equals to 1 if CEO holds a degree in Business, Economics, or Finance. CEO with educational backgrounds in these fields are typically trained to assess financial risks, analyse market trends, and make informed strategic decisions, which can influence the success of M&A transactions. Similar to other educational qualifications such as *CEOedu_PhD*, I expect that *CEOecon* will contribute positively to value creation for acquiring firms.

CEOtenure measures the number of years the CEO has served in the acquiring firm. This variable is calculated by subtracting the year the CEO began their tenure at the firm from the year the M&A deal was announced. Previous studies have presented mixed findings on the effect of CEO tenure on firm performance. Some studies report a positive relationship, suggesting that longer tenure provides experience and firm-specific knowledge that improve performance (Simsek, 2007; Ghardallou et al., 2020). However, other studies argue that longer tenure may have negative effects, as it could lead to entrenchment, resistance to change, or reduced innovation (Wu et al., 2005; Diks, 2016).

CEOage represents the age of the CEO in the year the M&A deal is announced. This variable is calculated by subtracting the CEO's year of birth from the year of the M&A announcement. Similar to *CEOtenure*, the impact of CEO age on M&A performance is mixed in the existing literature. Some studies suggest a positive effect, as older CEO may bring more experience and knowledge (Peni, 2014). Others report a negative effect, arguing that older CEO may be more risk-averse or resistant to change (Setiawan and Gestanti, 2022). Some studies find no significant impact at all

(Liu and Jiang, 2020). In this study, I expect that *CEOage* may have a positive influence on firm performance by contributing stability and experience to the M&A process.

CEOgender represents the proportion of male CEO in the sample. CEO gender is recognized as an important factor that can influence M&A performance. Female CEO are often associated with higher ethical standards, greater transparency, and stronger monitoring practices, which can contribute positively to corporate governance and decision-making. However, in cultural contexts that are strongly influenced by traditional or patriarchal norms, female CEO may face resistance or limited support from boards and key stakeholders. This resistance could reduce their influence on strategic decisions, including the outcomes of M&A activities. In this paper, I expect that *CEOgender* could positively impact on M&A performance.

Board characteristics

NonEx is the number of non-executive directors. They are members of the board of directors, but they do not have executive responsibilities within the firms. They focus on providing oversight, strategic guidance and independent judgment for the operations of the company. I use this variable as proxy for the independence of the Board because they are less likely to have conflicts of interest compared to executive directors then it could lead to a low level of agency problem (Vo et al., 2020).

Gender_div is defined as the percentage of female directors on the board. Boards with a higher proportion of female members tend to exhibit more risk-averse and cautious behaviour in M&A decision-making (Sham et al., 2013; Ullah et al., 2019). However, Chapple and Humphrey (2014), Sila et al. (2016), Green and Homroy (2018) report a negative relationship between higher female board representation and firm performance. In the context of Vietnam, where Confucian cultural values traditionally associate women with family-care roles, the influence of female directors on corporate decisions may be less prominent than that of their male colleagues. Therefore, in this study, I expect that *Gender_div* may have a negative effect on M&A performance.

BODsize represents the size of the acquiring firm's board of directors and is measured as the total number of board members. A larger board may enhance the quality of decision-making and problem-solving, especially in complex transactions such as mergers and acquisitions. According to Gafoor et al. (2018), a board size of between six and nine members is considered optimal, providing the greatest positive effect on firm performance. However, Jensen (1993) suggests that

larger boards may reduce individual accountability, potentially weakening the effectiveness of M&A negotiations. In the context of Vietnam, where Confucian cultural values strongly emphasize consensus and collective leadership, I expect that larger boards may have a positive influence on M&A performance.

Control variables

I apply several control variables that have been used in previous corporate governance studies. Most variables related to the characteristics of deals such as the *Deal size, Relative deal size, Control deal, Target public, Same Field* and *Payment type*.

Deal size measures the size of M&A deal. As was found in prior literature (Fich, Harford and Tran, 2015; Luo, 2005), the deal value has a significant impact on the closing probability of the M&A deal. To control this effect and to increase the power of the tests, this thesis will control the deal value. The deal value will be included as the natural logarithm of the deal value in billion Vietnam Dong.

Relative deal size commonly refers to the size of deal in relation to the size of acquiring firms. In addition to controlling the deal value, this thesis will control the deal value relative to the acquirer's market capitalization. This variable has been used in prior literature as a control variable and it was found to have a significant negative effect on deal completion (Fich et al., 2015; Luo, 2005). The variable is constructed by dividing the deal value at the announcement by the acquirer market capitalization on the last day of the estimation window (i.e., 46 trading days before the M&A announcement).

Control deal is defined as an M&A transaction in which the acquiring firm holds more than 50% of the shares after the deal. Typically, control deals enhance M&A performance because they allow the acquiring firm to achieve greater synergies. Nguyen (2018) found that a higher ownership stake by the acquiring firm in the target firm post-M&A positively influences CAR. Similarly, Bouwman et al. (2019) concluded that acquisitions tend to yield positive performance when the acquiring firm effectively manages the integration process and secures cooperation from the target firm. However, without adequate preparation, acquisitions may lead to cultural conflicts and reduce synergies. In this study, I assess the acquiring firm's level of control using a binary variable that indicates whether the M&A transaction qualifies as a takeover. The dummy variable is assigned a

value of 1 if the acquirer holds more than 50% of the target firm's shares after M&A and 0 otherwise. I expect that control deal could help improving M&A performance in Vietnam.

Target public measure the public status of target firms. The classification of the target firm as either a public or private company is a key determinant of M&A performance, as each category presents distinct challenges and opportunities. Public companies generally command higher acquisition premiums due to greater transparency and competitive bidding processes. Private firms can often be acquired at a lower cost, though they necessitate more extensive due diligence, then it could generate higher returns for the acquirer (Capron and Shen, 2007). In contrast, Fuller et al. (2002; 2004) find that acquirers experience significantly negative abnormal returns when buying public firms and significantly positive abnormal returns when targets are private companies or subsidiaries. In this study, I expect that Target pubic could have positive impact on M&A performance.

Payment Type refers to the method by which an acquiring firm compensates the shareholder of the target firms. The method of payment is also related to the stock market's response to acquisition announcements. Based on the studies of Yuan et al. (2015) and Keehnen (2016), it is evident that the choice of cash or stock payment by the acquiring firm affects both abnormal returns and operating performance. Specifically, the abnormal returns for deals paid by cash were higher than those paid by stock, but this difference was not statistically significant. In this paper, I expect a similar result with previous studies. To fully capture the effects of target ownership status and deal payment method, I interact the target public status indicator with the method-of-payment indicator to create exclusive deal: *Public*Payment* (applying for target public and stock payment method).

Same field refers to the similar industry filed of acquiring and target firm. This dummy variable equals 1 if the acquirer and target firms have same 2 first digit SIC code. Previous studies point out that combining firms in the same industry may generate cost synergies, economies of scale, and improv market posititioning (Wu et al., 2016). Thus, these synergies can enhance post-acquisition performance. I expect similar role of *Same field* on M&A performance in this paper.

4.3.4. Descriptive Statistic

In this section, I examine the overview of available data, as well as the descriptive statistics of variables.

4.3.4.1. Deal Sample Distribution

The statistics of deals reproduced in Table 4.2 below point out the deals that meet a requirement in Table 4.1. The first column lists the number of deal for each year, the second and third column provides total value and mean value in VND billion respectively, column 4 shows the CAR, column 5 provides *DeltaROA* for deals in each year, column 6,7,8 provide the average *CEOduality, CEOecon* and *CEOedu_PhD* in percentage for each year.

[Insert Table 4.2 about here]

The total number of deals fluctuates (from 2008 to 2016), with a noticeable peak in 2013 and 2016, where 57 deals were recorded. This is followed by a sharp decline in subsequent years (from 2017 to 2022). Such fluctuations may be indicative of broader economic cycles and market conditions influencing M&A activity. For example, the peak in 2013 could be the result of recovery after a small recession period from 2008 to 2010 or effective consolidations of various laws[18] in the year 2013 and 2014. About CAR statistics, it is worth the attention that there is a significant difference between two periods (before and after 2015). The negative CAR of the period 2008 to 2015 (except for 2008 and 2014) indicates the concerns of the market over the value creation potential of the M&A deals during that period. By contrast, the substantial positive CAR from 2016 to 2022 could be reflective of strategic acquisitions perceived as highly beneficial by the market. Especially for the year 2021 when the CAR reaches 5.534%, indicating a high market return of M&A deals in this year. The reason for this stand-out value is possibly side effects of the new laws [19] release since 2018 and bull-market trend in post Covid-19 period[20]. *DeltaROA*, representing the change in return on assets post-M&A, has a positive value for all estimated period. It suggests that M&A activities improve asset utilization efficiency for acquirers in the long term. Table 4.2 also displays the percentage of CEOduality by year. The highest rate in yearly year (2008) suggest centralized leadership during early development stage of market. The sharp decline

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[18] The list of these law is investment law (2014), enterprise law (2014), securities law (2013)
[19] The list of these new law is enterprise law (2020), investment law (2020), securities law (2019), competition law (2018)
[20] Like many other countries during the Covid pandemic, Vietnam implemented a monetary loosening policy by reducing interest rates. Additionally, social distancing led to a decline in travel, food and beverage services, and daily consumption activities. This resulted in a large amount of money remaining stagnant and not circulating in the market. During this period, the Vietnamese stock market was still considered essential and continued to operate, making it an attractive channel for investors. The market saw a surge of new investors, and as a result, any new information could cause significant fluctuations in stock prices

in 2020 reflect governance reforms due to the change in legal framework about corporate governance in Vietnam[21]. The percentage of CEO who hold a degree related to Economics, Finance and Management reach a peak at 53.3% in 2020, suggesting that there is a strategic shift toward prioritizing CEO with economic and finance expertise to navigate complex M&A deals.

4.3.4.2. Descriptive Statistics for all variables

I report descriptive statistics for all variables in sample of 419 deals in Panel A while focus on three variables *CEOduality, CEOecon and CEOedu_PhD* in sample of all Vietnamese public firms from 2008-2022. The results are shown in table 4.3 below.

[Insert Table 4.3 about here]

In Panel A, it indicates that 26.7% of the deals in the sample involve *CEOduality*. This measure shows a considerable presence of duality in the observed firms, suggesting that a significant portion of M&A activities are influenced by CEO who hold substantial control over both executive and board functions. The presence of *CEOedu_PhD*. is relatively low, with only 5.3% of the deals involving CEO holding a doctoral degree. The standard deviation of 0.225 further highlights the rarity of this educational qualification among the CEO in the sample. The relatively high prevalence of master's degrees may reflect the value placed on higher education in preparing CEO for complex strategic decisions such as M&A. *CEOecon* constitute 33.2% of the sample, suggesting that one third of M&A deals are signed by CEO with expertise in economics, management or finance. The Panel A of table 4.3 reports descriptive statistics for CEO and board characteristics. The average *CEOage* is 46 years, with values ranging from 24 to 67 years. Male CEO dominate the sample, as evidenced by a mean *CEOgender* value of 0.828. Regarding board composition, the gender diversity score (*Gender_div*) averages 80.33, indicating that over 80% of directors are male. The average board size (*BODsize*) is 6.125, with boards ranging from 3 to 11 individuals. Non-executive directors (*NonEX*) constitute nearly 70% of board members on average, a proportion that exceeds levels observed in developed markets such as the UK (Pass, 2004).

[21] *According to Decree No. 71/2017/NĐ-CP, Chairman of the Board of Director shall not hold the position as CEO at the same time of 01 public company. This regulation took effects since August 1st 2020*

When comparing with all Vietnamese firm in Panel B, there is a similarity between *CEOduality* and *CEOecon* in two sample (26.7% versus 23.3%; 33.2% versus 25.7% respectively). On the other hand, the presence of *CEOedu_PhD* is significantly lower in the M&A sample, with only 5.3% compared to 27.6% among all Vietnamese firms. This may suggest that in practice, academic qualifications (such as a PhD) are not the primary driver for selecting CEOs to lead acquisition strategies, with experience or executive leadership qualities being prioritized.

4.3.4.2. Detail Breakdown for Industry Sectors

I go details on the the breakdown of M&A deals across industrial sectors and the results are shown in figure 4.2

[Insert figure 4.2 about here]

Manufacturing sectors account for the largest share of M&A deals (27%), closely followed by Finance, Insurance and Real Estate sectors with 26.49% and construction sector (18.85%). These three sectors dominate the landscape for several reasons: Firstly, rapid urbanization in Vietnam has generated demand for residential construction and industrial real estate. As cities expand, there is a need for more housing, office spaces or other real estate. However, several real estate investors do not have the capacity to finish their business and M&A could help to take over those projects and complete them. Secondly, the rise of the middle class in Vietnam has increased consumer spending power, driving demand for manufactured goods and real estate (Kharas, 2010). This demand encourages companies to expand their capacities and market presence through M&A to meet the growing needs of consumers. Thirdly, Vietnam has experienced rapid economic growth and industrialization, making the manufacturing sector a cornerstone of its economy. The government's focus on industrial development has attracted significant foreign investment and driven consolidation within the industry to achieve economies of scale, enhance efficiency, and compete globally.

4.4. Methodology and Empirical Results

4.4.1. The changing of CEO characteristics and Ownership structures in Vietnam after the year of 2015

In the introduction part, I discussed several changes in Vietnam's market conditions and legal framework that could influence corporate governance practices. In this part, I aim to answer

two questions: First, is there any difference of corporate governance indicator (including CEO characteristics and Board characteristics) between two periods (2008-2014 and 2015-2022). Second, to what extent the change in corporate governance indicator could lead to the potential increase in agency conflict of acquirer firms. For the first question about whether there is a difference between the two periods, I applied an unequal t-test [22] for each CEO and Board characteristics. The results in table 4.4 below prove that there is a significant difference between the two periods. In overall, there has been an increase in *CEOgender*, *CEOecon*, and *NonEx*. Conversely, other variables such as *CEOduality*, *CEOedu_PhD, Gender_div, BODsize* and *SOE* have declined over time.

[Insert table 4.4 about here]

Stewardship theory suggests that CEO duality could help empowering and deliver strong leadership for CEO, which leads to better, faster decision and lower agency cost. Pham et al. (2015) states that this theory is more appropriate to explain Vietnam context than agency theory. The radically decrease of *CEOduality* rate in Vietnam (15.4% for period 2015-2022 compares to 34.6% for period 2008-2014) could potentially increase agency conflict due to power struggles, scrutiny increasing or unclear decision-making authority. Vietnam is an Easten Country who is heavily affected by Confusion cultures. Employees and stakeholders may view older CEO as more legitimate leaders, given the Confucian emphasis on respect to elders. This cultural expectation enhances the CEO's influence over strategic decisions and organizational dynamics. The average *CEOage* for the period 2008-2014 is 48.45 years old, slightly lower than later period (48.62 years old). However, the t-test result for *CEOage* indicates that there is no significant difference in this variable during two periods. Another factor affecting the performance of the firm is the experience and the reputation of the CEO, which could be measured by the number of years he has been with the company. In this research, I use *CEOtenure* as a proxy for CEO reputations. The average tenure of CEO for 2008-2014 period is 11.19 years, slightly lower than 13.08 years of 2015-2022 period. The t-test suggests that there is a significant difference between *CEOtenure* between two periods. When they also have longer tenures, then they could have more consistent relationship with the

[22] I first check the equality of variance of all independent variables by performing Levene's test. The results show that there is statistically significant difference in the variances between the groups before and after the year of 2015.

main shareholder and lower level of agency conflict (Dutta et al., 2011; Gong and Guo, 2015). I also witness the increase in *CEOgender* for later period, suggests that the number of male CEO in period 2015-2022 is higher than previous period. Firm with male CEO potentially have higher level of agency conflict because of their leader style. They are often associated greater risk-tolerance, overconfidence and stronger tendencies toward aggressive growth strategies then such behaviour could potentially exacerbate agency conflicts (Hoang et al., 2019).

In the context of Board composition, Boards with gender-diversified could have low level of agency problems because it could bring different perspective to the table, more comprehensive decision making and better communication (Gurdgiev and Ni, 2023). Thus, the decrease in the *Gender_div* in Vietnamese firms could lead to the increasing of agency conflict in the period after 2015. Small size of Board might not have a diversity and be easily manipulated by Chairman, especially when Chairman is also CEO (Le et al.,2023). This could lead to decisions that favour managers' interest but not align with shareholders' interest. The slight decrease in *BODsize* for the years after 2015 (from 5.592 to 5.505) could potentially cause high levels of agency conflict. The same effect happens when I consider the *BOMsize* when the board of managers' number slightly decreases from 3.771 to 3.641. While non-executive directors play a vital role in providing independent oversight and strategic direction, their presence can also lead to increased agency conflict due to differences in perspective and potential disagreements with executive directors. The percentage of *NonEx* slightly increase from 63.9% for the period before 2015 to 70.7% for the period after 2015. After major privatization wave in Vietnam in 2000s, the percentage of SOEs are drop from 81.3% for period 2008-2014 to 45.1% for period 2015-2022. When the proportion of state ownership in a firm decrease, the influence of political factors on the firm's operations may also decrease. This could reduce the potential for conflicts of interest and mismanagement that are sometimes associated with SOEs (Ding et al., 2015). Moreover, SOEs often face corporate governance challenges such as a lack of transparency and disclosure over finances, which can exacerbate agency conflicts. Reducing the proportion of SOEs could help mitigate these issues, leading to improved corporate governance and potentially lower levels of agency conflict.

4.4.2. Reassessing the impact of CEO duality on M&A performance

4.4.2.1. Univariate analysis

I first conduct a univariate analysis to evaluate the differences between two groups (duality and non-duality) across two distinct periods (before and after 2015). The results are presented in Table 4.5 below.

[Insert Table 4.5 about here]

The t-test, which assesses differences in means, and the Wilcoxon signed-rank test, which evaluates differences in medians, highlight two key findings worthy of further discussion. Firstly, in accordance with my analysis in introduction part, stewardship theory is more suitable to explain the role of CEO duality and M&A performance for the period before 2015 since firms can benefit from dual role CEO and Chairman. Specifically, the mean and median cumulative abnormal return for the non-duality firms is – 0.009 and 0.04 respectively while those values for duality firms are 0.007 and respectively. It suggests that M&A by duality firms is likely associated with better performance. Secondly, prior to 2014, there is a significant difference between firms with CEO duality and non-duality, whereas no significant difference is observed between the two groups in the subsequent period. It is worth noting that the shift in the significance of the difference in firm performance between CEO duality and non-duality across the two periods can be attributed to several factors related to changes in corporate governance practices, market conditions, and regulatory frameworks, which is well mentioned in the introduction part.

4.4.2.2. CEO duality and M&A performance for period 2008-2014

I continue to multivariate analysis by adding other control variables about deal characteristics into considerations to confirm the impact of CEO duality on short-term M&A performance. In this part, I replicate the paper of Pham et al. (2015) when they consider the role of *CEOduality* on M&A performance in a similar period from 2008 to 2014. I use the following specifications:

$$M\&A\_Performance_{i,j,t} = \alpha_j + \alpha_t + \beta_1 . CEOduality_{i,t} + \sum_{k=1}^{K} \beta_k \, CONTROL_{k,i,t} + \varepsilon_{i,t} \qquad (7)$$

where the dependent variable $M\&A\_Performance_{ijt}$, represents the acquisition value creation and measured by the *CAR* for firm i in year t and industry j, computed over 5 days event window around M&A announcement. $CEOduality_{i,t}$ is dual structure of managers of firm i in year

t; $\alpha_j \; and \; \alpha_t$ indicates fixed effect of industry [23] and time respectively. By using fixed effects, I control this unobserved heterogeneity by allowing industry and year to have its own unique intercept, effectively absorbing all the time-invariant characteristics; $\varepsilon_{i,t}$ is a disturbance term of firm i in year t; $CONTROL_{k,i,t}$ is the vector of k deal-specific controls for the firm i in year t. The dependent variable and main interest variables are winsorized by 1% from the lowest and largest value for reducing the impact of outliners. The coefficient of interest is *CEOduality*, and I expect that my results are similar with Phan's result when the coefficient of β_1 is significantly positive to suggest that the concentration of CEO power could enhance the acquisition value creation.

[Insert Table 4.6 about here]

Table 4.6 above provides replicated regression results of Pham et al. (2015). Three first model presents the result for the period (2008-2014) when the level of agency conflict is potentially low. Three remains model 4-6 extend research of Phan for period from 2015 to 2022 when corporate governance in Vietnam dramatically changes. In model 1 and 4, I consider only the effect of CEO duality on performance. Deal size and relative deal size are added into consideration in model 2 and 5 while I include all control variables in model 3 and 6. Overall, the results in table 6 are consistent with original paper when the coefficient of *CEOduality* is significantly positive with M&A stock return in 5 days around M&A deal announcement date for all model 1-3. This indicates that CEO with dual roles are associated with higher short-term abnormal returns post-M&A, reflecting potentially beneficial effects of high level of power concentration on strategic decision-making. The M&A literature suggests that bidder gains differ according to the target status, method of payment, deal size, and deal relatedness. When considering control variables, Dealsize has a significant positive impact on short-term M&A performance (0.004 at 10% level of significance). In contrast, M&A dealing with share as payment method and acquirer as SOE has a significant negative impact on short-term M&A performance.

4.4.2.3. CEO duality and M&A performance for period 2015-2022

In the period from 2015 to 2022, as I mention in introduction part, the level of agency conflict potentially increases due to the change in economy and legal regulatory system related to

[23] I classify firms into 8 main industry groups (based on the first digits of the SIC code)

corporate governance in Vietnam. These changes reshape the governance structure within firms, especially in how concentrative power and oversight are managed. The coefficient for *CEOduality*, which turns negative (-0.011) and is not significant when I include for full set of control variables. This finding suggests that the earlier perceived benefits of CEO duality, where combining the roles of CEO and Chairman bring necessary power for them to efficiency control and create wealth for shareholders from M&As deals, no longer hold in the later period.

Reasons for this phenomenon could come from several factors. Firstly, the evolving legal framework to enforce governance mechanisms and create more strict standards for corporate governance in Vietnam could help imposing greater checks on the concentration of power within a single manager (such as CEO). Therefore, these regulations may have reinforced the Board's responsibility to ensure independent oversight, reducing the effect of CEO duality as a governance structure. Stewardship theory suggests that powerful CEO who alight their benefit with firms' interests could be a good steward, deliver strong leadership and make more comprehensive decisions. However, as governance practices matured, a more independent and accountable Board became necessary, and it diminishes the advantages of CEO duality. Secondly, the shift of Vietnam economic to globalization orientation also changes the Vietnam market structure. The presence of foreign firms also introduced Vietnamese companies to international governance standards. This external pressure encouraged Vietnamese companies to adopt more transparent and accountable governance practices, thereby reducing management entrenchment. The diminishing significance of CEO duality may reflect a broader shift toward governance practices that emphasize monitoring and benefit balancing, preventing any single individual from wielding excessive power within the firm. Moreover, the negative coefficient for CEO duality could show that as firms adopted more complex governance structures, the potential risks associated with CEO duality became more noticeable. In a more complex and regulated economic environment, the concentration of power in a single individual could lead to decisions that prioritize managerial interests over those of shareholders. This could explain why the earlier positive impact of CEO duality did not continue in later years, as both firms and regulators recognized the need for clearer role separation of CEO and Board's Chairman.

4.4.3. The Influence of New Corporate Governance Determinant on M&A Performance

In this section, I examine whether M&A improves a firm's performance and whether a change in the acquirers' operating performance (if any) is related to a new determinant as stated in Hypothesis 3**.** Since *CEOduality* does not appear to be a key determinant of firm performance, it is essential to explore alternative corporate governance indicators that may have a more significant impact. I continue my analysis by testing whatever new corporate governance determinants could provide valuable insights into how governance structures shape strategic decision-making and corporate outcomes. The new determinants could be as diverse as the following: *CEOtenure* (Finkelstein and Hambrick, 1996; Zhou et al., 2019); *CEOedu_PhD* (Barro and Lee, 2010; Wang and Yin,2018; Plaksina et al., 2019); *CEOecon* (Custodio et al., 2013; Chiang et al., 2016), *CEOgender* (Nguyen, 2017; Hoang, 2021); *Board size* (Gafoor et al., 2018; Nguyen and Huynh, 2023; Al-Absy and Hasan, 2023), *NonEx* (Martin and Herrero, 2018). Moreover, beyond individual CEO and board characteristics, the interaction between governance mechanisms should be considered. For example, does the combination of *CEOedu_PhD* with *CEOecon* improve or weaken firm performance?

I estimate the same specification as the previous part, but I focus on the period from 2015 to 2022 when the corporate governance context in Vietnam change drastically in this estimation. The following equation below shows the specification:

$$M\&A\_Performance_{i,j,t} = \alpha_j + \alpha_t + \beta_1 . NEWGOV_{i,t} + \sum_{k=1}^{K} \beta_k \, CONTROL_{k,i,t} + \varepsilon_{i,t} \qquad (8)$$

where the dependent variable $M\&A\_Performance_{ijt}$, represents the acquisition value creation and measured by the five day cumulative abnormal announcement return for firm i in year t and industry j (*CAR*) and the difference between post-M&A ROA and pre-M&A ROA of the acquiring firm after adjusted by sector (*DeltaROA*). *NEWGOV* includes a set of Board characteristics and CEO characteristics for firm i in the year t. Control variables are like equation (1) above. I check the impact of each variable with M&A performance indicators to find which new determinant have a significant impact on Vietnam firm returns in the new context. I also control the fixed effect of industry and year, and all regressions are tested with standard errors clustered.

4.4.3.1. New corporate governance determinants and short-term performance

The dependent variable is the five days cumulative abnormal returns for the acquirer. This variable captures the value creation of acquired firms around the M&A announcement.

[Insert Table 4.7 about here]

Table 4.7 shows the results from the regression models that regress new corporate governance indicators on short-run M&A performance. I consider the educational level of CEO in column 1. The significant positive of *CEOedu_PhD*'s coefficient (0.061 at 1% significance level) suggests that firms led by CEO who have high educational level (doctoral degree) tend to experience better bidder gains. These results consist with previous research of Plaksina et al. (2019) and Buenting (2022) as they said that M&A deals related to highly educated CEO have higher bidder gains than deals related to under-graduate CEO. In column 2, I apply the same specification as in column 1, but the main interest variable now focuses on the education major of CEO. The coefficient of *CEOecon* variable is 0.028 at 95% confidence level. This result indicates that CEO with a background in economics, finance or management are associated with improved M&A performance, as reflected by a significant positive change in acquirer stock returns within 5 days around the M&A deal announcement. In collaboration with CEO education level and CEO major, I add interaction variable *Econ*Edu* into consideration in column 3. The coefficient of *CEOedu_PhD* and *CEOecon* stay significantly positive but the interaction variable between two variables is insignificantly negative. These results can be interpreted as the major and the level of education of CEO being associated with higher synergistic gains. However, the lack of significance in the interaction variable suggests that having both qualifications does not provide additional benefits beyond having high level of education or an economics background independently. It is possible that CEO with advanced education could over-analysis or over-estimate situations, leading to delays in decision-making, miss opportunities or prolonged negotiations. Then the consequence is the reduction in bidder gains. Column from 4 to 11 shows results of the estimation of other determinants including *Gender_div, Board size, NonEx, CEOage, CEOgender, CEOtenure* and *CEOturnover* on cumulative abnormal return of acquirer 5 days around announcement date. I observe that those corporate governance indicators do not play a significant role in the short-run performance of M&A. About control variables, the M&A literature suggests that acquirer returns could relate to deal characteristics such as deal size, control deal, payment method or public status of target firms. I witness the significant positive coefficient of deal size and control deal in all

columns, suggesting that the bigger the M&A deal size, the higher the expected gains for shareholders.

4.4.3.2. New corporate governance determinants and acquirers' operating performance

My dependent variable is *DeltaROA*, the interest and control variables are mentioned in the previous part. The main idea is by expanding the scope of the *CEOduality*, I can develop a more comprehensive understanding of governance mechanisms that drive the performance of acquiring firms in post-M&A period.

[Insert Table 4.8 about here]

Table 4.8 reports the results based on adjusted returns on assets as a proxy for the operating performance of acquiring firms after M&A deals. I test each corporate governance indicators in each column from 1 to 11 (except for column 3 when I consider the interaction variable between CEO educational level and major). I witness the significant positive coefficient of *CEOedu_PhD* (0.048 at 5% of significance level. When I add *CEOecon* and interaction variable (*Econ*Edu*) into consideration, the coefficient of both *CEOedu_PhD* and *CEOecon* are significant positive. It suggests that a high level of education and major of CEO could benefit the performance of post-acquisition firms. In column 4, the positive value of *Gender_div* suggests that the increase in the percentage of male directors in Board could increase the firms' performance. Most recent research claim that Board with high proportion of female could increase the operating performance of firm (Abdelzaher, 2019; EmadEldeen et al., 2021, Tran and Wang, 2021). However, my result is inconsistent with that research. Possible reasons could come from the Vietnamese social norms since Vietnam is heavily affected by a Confucian ideology which emphasis the role of male in society. Moreover, male directors could exhibit higher level of risk tolerance (Kochan et al., 2003) or larger connection with business network than female directors (Vo et al., 2021).

In line with the gender in Board, the result in column 9 state that male CEO has a positive impact (the coefficient of *CEOgender* variable is 0.03 at 1% of significant level) on the return of acquisition in the long-term. It suggests that male CEO tend to create more value for firms for post-M&A period. It is worth noticing that during the period 2008-2014, the proportion of male and female CEO was nearly equal, suggesting a more balanced gender representation in corporate leadership. However, in the subsequent period from 2015 to 2022, the proportion shifted significantly, with 85% of CEO being male. This trend raises important questions about the

underlying factors driving the increasing dominance of male leadership in firms. One possible explanation is that firms may prefer male CEO due to their leadership style, risk-taking behavior, and decision-making approaches, which are often associated with higher firm value creation. Research suggests that male CEO, on average, exhibit greater risk tolerance and a stronger emphasis on aggressive growth strategies, such as mergers and acquisitions, which can enhance firm performance.

4.5. Conclusion

The objective of this study is to re-examine the impact of CEO characteristics on M&A performance within the Vietnamese context. Specifically, this paper investigates how recent regulatory reforms have reshaped corporate governance practices in Vietnam and identifies new determinants, including CEO and board characteristics, influencing M&A performance in the country's evolving financial environment. Using an unequal t-test, my findings reveal significant changes in governance conditions between the periods 2008–2014 and 2015–2022, suggesting an increased potential for agency conflicts within acquiring firms.

I replicate the study conducted by Phan et al. (2015) using an updated dataset comprising 419 Vietnamese M&A transactions. My results confirm the original findings, indicating that CEO duality positively influenced stock returns during the 2008–2014 period. However, this positive effect becomes insignificant after 2015, implying that CEO duality tends to enhance performance primarily in low-agency-conflict environments, such as Vietnam's earlier market conditions. Given the diminished significance of CEO duality in the recent period, I further analyse other CEO characteristics and board features. My findings demonstrate that CEO holding doctoral degrees and specialized knowledge in Economics, Finance, or Management significantly improve M&A performance, particularly in emerging markets like Vietnam. This emphasizes educational qualifications as key predictors of M&A success and provides valuable insights for corporate boards operating in contexts characterized by talent shortages and regulatory limitations.

This research has several limitations, offering opportunities for future studies. Firstly, my analysis does not account for potential endogeneity concerns that could affect the relationship between CEO power and M&A outcomes. Secondly, future research should explore the target firm's perspective by considering similarities between CEO of target and acquiring firms. Thirdly, the primary challenge in researching the Vietnamese context remains the limited availability of

comprehensive data. Although I utilized the most extensive dataset available, nearly half of the transactions lacked details on transaction values, potentially affecting the robustness of my results. Addressing these data gaps by acquiring more complete transaction information represents an important opportunity for future research.

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Table 4.1: Sample selection strategy

This table shows the sample selection strategy of this paper. Data about M&A is collected from the Thomson Reuters SDS M&A database for the period between January 1, 2008, to September 30, 2022.

No. of Obs. after query	Query Description
4143	The acquirer must be Vietnamese companies
1425	The acquirer companies must be a public firm
1261	The acquirer companies must have DataStream Code
1041	The acquiring companies must be listed on HNX and HoSE market
1019	The target companies could be a private, public or subsidiary firm
512	The value of transaction is available
419	Deal type: Acquisition of Majority Interest, Acquisition of Assets, Acquisition of Partial Interest, Acquisition of Remaining Interest and Merge

Table 4.2: Sample Distribution by years

This table presents yearly data from the sample including 419 M&A deals from Thomson Financial SDC Platinum M&A database. The announcement follows selection criteria in table 4.1. The total value and mean value are in VND billion. All variables definition is provided in Appendix 4.1

Year	Deal Value (in VND billion)			CAR	DeltaROA	CEOduality (%)	CEOecon (%)	CEOedu_PhD (%)
	number of deals	Total value	mean value					
2008	7	4,554	651	1.383	0.078	42.91	14.3	14.33
2009	12	1,540	128	-1.871	0.072	16.72	8.3	0.00
2010	41	2,529	62	-0.457	0.015	34.16	26.8	4.92
2011	54	17,600	325	-1.997	0.051	29.60	22.2	3.77
2012	31	4,937	159	-0.011	0.064	25.82	29.0	3.26
2013	57	6,673	117	-0.047	0.054	26.33	38.6	0.00
2014	39	8,645	222	0.466	0.063	25.61	35.9	12.81
2015	52	12,600	241	-0.081	0.047	30.82	46.2	13.50
2016	57	23,900	419	1.467	0.056	26.30	35.1	3.50
2017	27	13,200	489	0.317	0.053	25.91	29.6	0.00
2018	6	2,884	481	1.525	0.066	16.72	33.3	16.67
2019	13	6,715	517	0.131	0.044	30.87	30.8	0.00
2020	15	7,925	528	1.127	0.045	6.72	53.3	6.67
2021	7	3,057	437	5.534	0.028	0.00	28.6	0.00
2022	1	45	45	2.061	-	0.00	100.00	0.00

Table 4.3: Descriptive statistics

This table presents the descriptive statistics for all variables used in the study. Panel A reports statistics based on a sample of 419 M&A deals, which were selected through the filtering process described in Table 4.1. Panel B focuses specifically on three key governance variables: *CEOduality*, *CEOeco*, and *CEOedu_PhD*. Data for all Vietnamese firms are collected from the VietStockFinance database. Detailed definitions of all variables are provided in Appendix 4.1.

Variable	N	Mean	SD	p25	p50	p75	Min	Max
Panel A: Sample of 419 deals								
CAR	419	0.002	0.072	-0.033	0.001	0.028	-0.221	0.706
DeltaROA	418	0.051	0.079	0.017	0.041	0.078	-0.341	0.611
CEOduality	419	0.267	0.443	0.000	0.000	1.000	0.000	1.000
CEOgender	419	0.828	0.378	1.000	1.000	1.000	0.000	1.000
CEOecon	419	0.332	0.471	0.000	0.000	1.000	0.000	1.000
CEOedu_PhD	419	0.053	0.223	0.000	0.000	0.000	0.000	1.000
CEOage	419	46.611	7.879	41.000	47.000	53.000	24.000	67.000
CEOtenure	419	10.133	9.075	3.000	7.000	17.000	-6.000	43.000
CEOturnover	419	0.234	0.424	0.000	0.000	0.000	0.000	1.000
Gender_div	419	0.803	0.253	0.667	1.000	1.000	0.000	1.000
BODsize	419	6.124	1.653	5.000	5.000	7.000	3.000	11.000
BOMsize	419	4.415	2.464	3.000	4.000	5.000	1.000	21.000
NonEx	419	0.692	0.182	0.600	0.714	0.800	0.167	1.000
Deal size	419	10.630	1.879	9.411	10.555	11.770	3.757	16.430
Relative size	419	0.233	0.678	0.010	0.040	0.183	0.000	6.088
Target public	419	0.313	0.464	0.000	0.000	1.000	0.000	1.000
Control deal	419	0.692	0.462	0.000	1.000	1.000	0.000	1.000
Payment type	419	0.129	0.335	0.000	0.000	0.000	0.000	1.000
Same Field	419	0.494	0.501	0.000	0.000	1.000	0.000	1.000
SOE	419	0.358	0.480	0.000	0.000	1.000	0.000	1.000
Panel B: All Vietnamese firms								
CEOduality	9217	0.233	0.423	0.000	0.000	0.000	0.000	1.000
CEOecon	9216	0.257	0.437	0.000	0.000	1.000	0.000	1.000
CEOedu_PhD	12325	0.276	0.447	0.000	0.000	0.000	0.000	1.000

Table 4.4: The changes in CEO characteristics and Ownership Structures in Vietnam market

This table reports the changes in CEO and Board characteristics of all Vietnamese public firms for 2 periods: 2008-2014 (panel A) and 2015-2022 (panel B). The mean value, SD for each period and the mean difference between two period are reported. All of variables are defined in appendix 4.1. The statistical significance levels of 1%, 5% and 10% are shown in ***, ** and * respectively.

Variable	2008-2014		2015-2022		Difference
	Mean	SD	Mean	SD	
Panel A: CEO characteristics					
CEOduality	0.346	0.008	0.154	0.005	-0.191***
CEOgender	0.535	0.006	0.847	0.004	0.311***
CEOecon	0.229	0.007	0.276	0.006	0.047***
CEOedu_PhD	0.443	0.006	0.087	0.004	-0.356***
CEOage	48.449	0.127	48.62	0.113	0.171
CEOtenure	11.193	0.148	13.083	0.132	1.891***
CEOturnover	0.161	0.004	0.201	0.005	0.041***
Panel B: Board characteristics					
Gender_div	0.889	0.003	0.846	0.003	-0.043***
BODsize	5.592	0.02	5.505	0.017	-0.087***
BOMsize	3.771	0.031	3.641	0.028	-0.129***
NonEx	0.639	0.003	0.707	0.002	0.067***
SOE	0.813	0.004	0.451	0.006	-0.363***

Table 4.5: The univariate test of CEO duality and M&A performance

This table presents the mean and median cumulative abnormal returns (CAR) of acquiring firms over a five-day event window (-2, +2). CAR measures the stock market's reaction to the M&A announcement during this short period. Duality firms refer to those where the same individual holds both the CEO and Chair of the Board positions. I apply a t-test to examine differences in mean CAR and a Wilcoxon signed-rank test to examine differences in median CAR between groups. Panel A reports results for the period 2008–2014, while Panel B presents results for the later period. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

	Non-duality firms (0)		Duality firms (1)		Mean diff.	Median diff.
	Mean	Median	Mean	Median	(1)-(0)	(1)-(0)
Panel A: Period 2008-2014						
CAR	-0.009 (N=173)	0.004 (N=173)	0.007 (N=68)	0.084 (N=68)	0.016**	0.080***
Panel B: Period 2015-2022						
CAR	0.016 (N=134)	0.008 (N=134)	0.001 (N=44)	0.008 (N=44)	-0.015	0.000

Table 4.6: Impact of CEO duality on M&A Performance

This table replicates the analysis by Pham et al. (2015), examining the effect of *CEOduality* on firm performance. The dependent variable is the cumulative abnormal return (*CAR*), calculated over the five-day event window (-2, +2) surrounding the M&A announcement date. The control variables used in the analysis are defined in Appendix 4.1. Columns 1, 2, and 3 report results for the period 2008–2014, while Columns 4, 5, and 6 present results for the period 2015–2022. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

Variables	**2008-2014**			**2015-2022**		
	(1)	(2)	(3)	(4)	(5)	(6)
CEO duality	**0.015***	**0.015***	**0.021****	**-0.013**	**-0.010**	**-0.011**
	(1.690)	(1.760)	(2.270)	(-1.230)	(-1.010)	(-0.870)
Deal size		0.003*	0.004*		0.004*	0.005*
		(1.700)	(1.730)		(1.940)	(1.740)
Relative size		0.007	0.007		0.003	-0.001
		(0.580)	(0.500)		(0.300)	(-0.100)
Control deal			0.003			0.026*
			(0.330)			(1.670)
Target public			0.016			0.004
			(1.400)			(0.190)
Payment type			-0.028			-0.013
			(-1.650)			(-0.730)
Same Field			0.000			-0.009
			(0.040)			(-0.810)
Public*Payment			0.037			0.018
			(1.600)			(0.600)
SOE			-0.011			-0.026*
			(-1.250)			(-1.690)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Sector Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.013	0.025	0.149	0.01	0.017	0.055
Observations	241	241	241	178	178	178

Table 4.7: Impact of new determinants on acquirer returns

This table presents the effects of corporate governance indicators on short-term M&A performance. The dependent variable is the cumulative abnormal return (CAR), measured over the five-day event window (-2, +2) around the M&A announcement date. Detailed definitions of all variables used in the analysis are provided in Appendix 4.1. Each column reports the estimated impact of a specific governance indicator, along with control variables, on CAR. Specifically, Column 1 focuses on CEOedu_PhD, Column 2 on CEOecon, and Column 3 includes both CEOedu_PhD, CEOecon, and their interaction term Econ*Edu. Column 4 examines Gender_div, Column 5 BODsize, Column 6 BOMsize, Column 7 NonEx, Column 8 CEOage, Column 9 CEOgender, Column 10 CEOtenure, and Column 11 CEOturnover. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR
CEOedu_PhD	**0.061*** **		**0.078*** **								
	(3.20)		(2.67)								
CEOecon		**0.028** **	**0.023** **								
		(2.83)	(2.05)								
Econ*Edu			**-0.033**								
			(-1.26)								
Gender_div				0.001							
				(0.08)							
BODsize					0.001						
					(0.33)						
BOMsize						-0.001					
						(-0.17)					
NonEx							0.011				
							(0.44)				
CEOage								0.001			
								(-0.17)			
CEOgender									-0.015		
									(-0.42)		
CEOtenure										0.001	
										(-0.01)	

CEOturnover											0.01
											(0.37)
Deal size	0.006*	0.006*	0.006*	0.006*	0.006	0.007	0.006*	0.006*	0.006*	0.006	0.006*
	(1.67)	(1.69)	(1.69)	(1.73)	(1.62)	(1.53)	(1.7)	(1.7)	(1.76)	(1.64)	(1.67)
Relative size	0.001	0.001	0.001	-0.001	-0.001	-0.002	-0.002	-0.002	-0.001	0.001	-0.002
	(0.1)	(-0.06)	(0.02)	(-0.17)	(-0.16)	(-0.21)	(-0.21)	(-0.2)	(-0.13)	(-0.05)	(-0.2)
Control deal	0.022	0.025	0.025	0.029*	0.029*	0.029*	0.029*	0.029*	0.029*	0.027	0.029*
	(1.34)	(1.48)	(1.56)	(1.83)	(1.77)	(1.72)	(1.81)	(1.8)	(1.8)	(1.63)	(1.75)
Target public	0.005	0.003	0.006	0.004	0.003	0.004	0.004	0.003	0.003	0.001	0.003
	(0.24)	(0.17)	(0.28)	(0.18)	(0.16)	(0.2)	(0.2)	(0.18)	(0.14)	(0.07)	(0.13)
Payment type	-0.035*	-0.025	-0.036	-0.02	-0.02	-0.019	-0.02	-0.02	-0.018	-0.022	-0.021
	(-1.74)	(-1.29)	(-1.65)	(-1.05)	(-0.97)	(-1.02)	(-0.99)	(-0.97)	(-1)	(-1.15)	(-0.99)
Same Field	-0.011	-0.011	-0.012	-0.012	-0.011	-0.012	-0.012	-0.012	-0.01	-0.01	-0.011
	(-0.91)	(-0.89)	(-0.95)	(-0.94)	(-0.86)	(-0.91)	(-0.91)	(-0.93)	(-0.87)	(-0.78)	(-0.88)
Public*Payment	0.038	0.032	0.033	0.024	0.023	0.023	0.022	0.023	0.024	0.028	0.026
	(1.24)	(1.03)	(1.06)	(0.75)	(0.73)	(0.73)	(0.7)	(0.71)	(0.74)	(0.91)	(0.78)
SOE	-0.035**	-0.034**	-0.027*	-0.025	-0.025	-0.025	-0.026	-0.025	-0.025	-0.032**	-0.024
	(-2.14)	(-2.07)	(-1.79)	(-1.64)	(-1.64)	(-1.58)	(-1.65)	(-1.57)	(-1.62)	(-1.98)	(-1.62)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.118	0.135	0.145	0.099	0.099	0.099	0.1	0.099	0.102	0.099	0.101
Observations	178	178	178	178	178	178	178	178	178	178	178

Table 4.8: Impact of new determinant on M&A operating performance

This table presents the impact of corporate governance indicators on operating M&A performance. The dependent variable is DeltaROA. Detailed definitions of all variables used in the analysis are provided in Appendix 4.1. Each column reports the estimated impact of a specific governance indicator, along with control variables, on CAR. Specifically, Column 1 focuses on CEOedu_PhD, Column 2 on CEOecon, and Column 3 includes both CEOedu_PhD, CEOecon, and their interaction term Econ*Edu. Column 4 examines Gender_div, Column 5 BODsize, Column 6 BOMsize, Column 7 NonEx, Column 8 CEOage, Column 9 CEOgender, Column 10 CEOtenure, and Column 11 CEOturnover. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	DeltaROA	DeltaROA	DeltaROA	DeltaROA	DeltaROA	DeltaROA	DeltaROA	DeltaROA	DeltaROA	DeltaROA	DeltaROA
CEOedu_PhD	**0.048****		**0.084*****								
	(2.19)		(2.67)								
CEOecon		**0.009**	**0.032****								
		(0.98	(2.05)								
Econ*Edu			**-0.048**								
			(-1.26)								
Gender_div				**0.001****							
				(2.35)							
BODsize					0.001						
					(0.33)						
BOMsize						-0.001					
						(-0.28)					
NonEx							-0.014				
							(-0.63)				
CEOage								0.001			
								(0.03)			
CEOgender									**0.030*****		
									(2.64)		
CEOtenure										0.001	
										(-0.31)	
CEOturnover											0.005
											(0.6)

Deal size	-0.002	0.006*	-0.002	-0.002	-0.003	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	(-0.8)	(1.67)	(-0.77)	(-0.64)	(-0.86)	(-0.8)	(-0.69)	(-0.78)	(-0.62)	(-0.78)	(-0.75)
Relative size	0.008	0.001	0.006	0.008	0.007	0.006	0.007	0.006	0.005	0.007	0.006
	(1)	(0.1)	(0.73)	(1.03)	(0.79)	(0.7)	(0.82)	(0.75)	(0.65)	(0.81)	(0.73)
Control deal	-0.017	0.022	-0.013	-0.011	-0.014	-0.013	-0.014	-0.013	-0.014	-0.014	-0.013
	(-1.04)	(1.34)	(-0.81)	(-0.69)	(-0.84)	(-0.84)	(-0.87)	(-0.8)	(-0.87)	(-0.85)	(-0.79)
Target public	-0.026	0.005	-0.028	-0.029	-0.029	-0.027	-0.028	-0.028	-0.026	-0.028	-0.028
	(-1.27)	(0.24)	(-1.37)	(-1.41)	(-1.43)	(-1.46)	(-1.38)	(-1.33)	(-1.26)	(-1.36)	(-1.37)
Payment type	-0.043**	-0.035*	-0.029*	-0.037**	-0.029*	-0.028	-0.029*	-0.029*	-0.032**	-0.031*	-0.030*
	(-2.31)	(-1.74)	(-1.79)	(-2.38)	(-1.86)	(-1.65)	(-1.95)	(-1.88)	(-2.1)	(-1.93)	(-1.9)
Same Field	-0.002	-0.011	-0.002	-0.003	-0.001	-0.002	-0.002	-0.002	-0.004	-0.002	-0.002
	(-0.29)	(-0.91)	(-0.26)	(-0.41)	(-0.17)	(-0.25)	(-0.21)	(-0.23)	(-0.46)	(-0.23)	(-0.21)
Public*Payment	0.075**	0.038	0.067**	0.078**	0.067**	0.068**	0.069**	0.068**	0.066**	0.069**	0.070**
	(2.43)	(1.24)	(2.42	(2.59)	(2.26)	(2.4)	(2.51)	(2.4)	(2.28)	(2.35)	(2.37)
SOE	0.018	-0.035**	0.022	0.02	0.02	0.021	0.021	0.02	0.02	0.018	0.021
	(1.34)	(-2.14)	(1.33)	(1.52)	(1.5)	(1.4)	(1.64)	(1.41)	(1.51)	(1.39)	(1.55)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.16	0.145	0.123	0.149	0.123	0.123	0.125	0.122	0.152	0.127	0.123
Observations	178	178	178	178	178	178	178	178	178	178	178

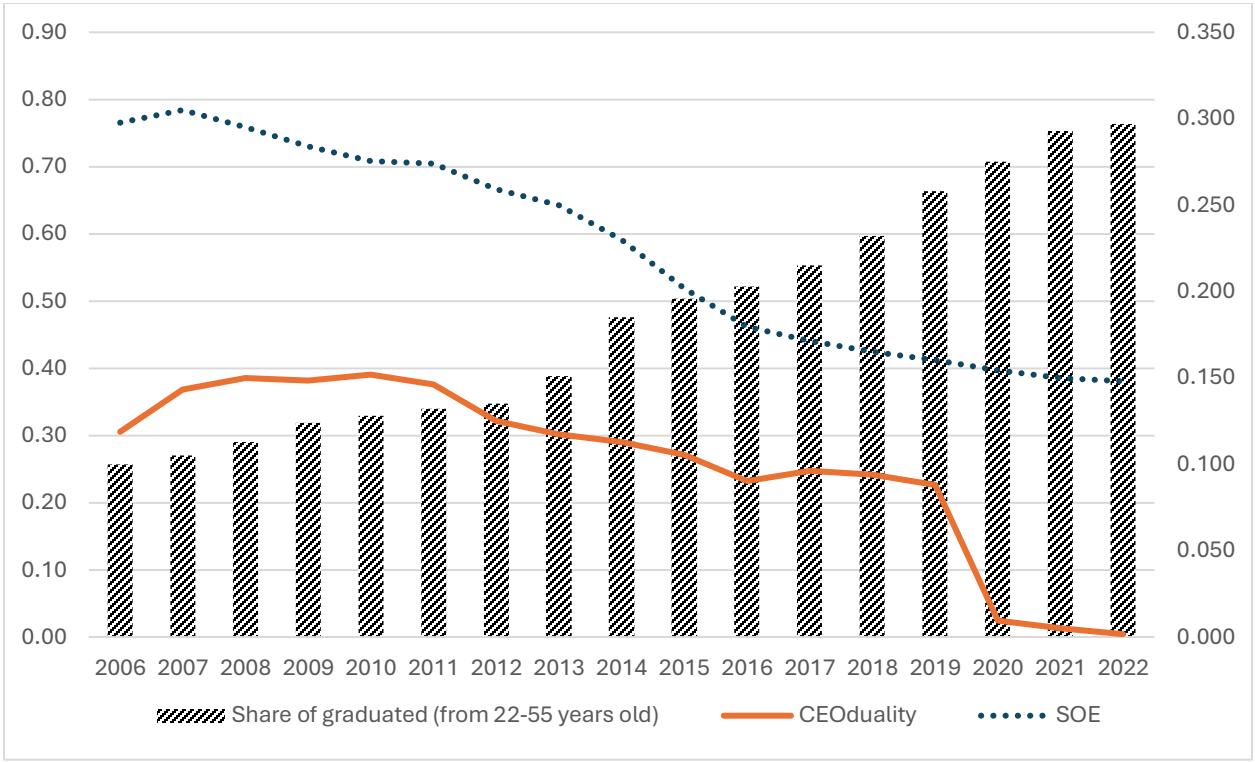

Figure 4.1: CEO duality, SOE and graduated in Vietnam during 2006 to 2022

Figure 4.1 displays an average of CEO duality of Vietnamese firms (percentage) in column, proportion of SOE (percentage) in dashed line and share of graduated (percentage) in line during period 2006 to 2022. The data is collected in the VietstockFinance database.

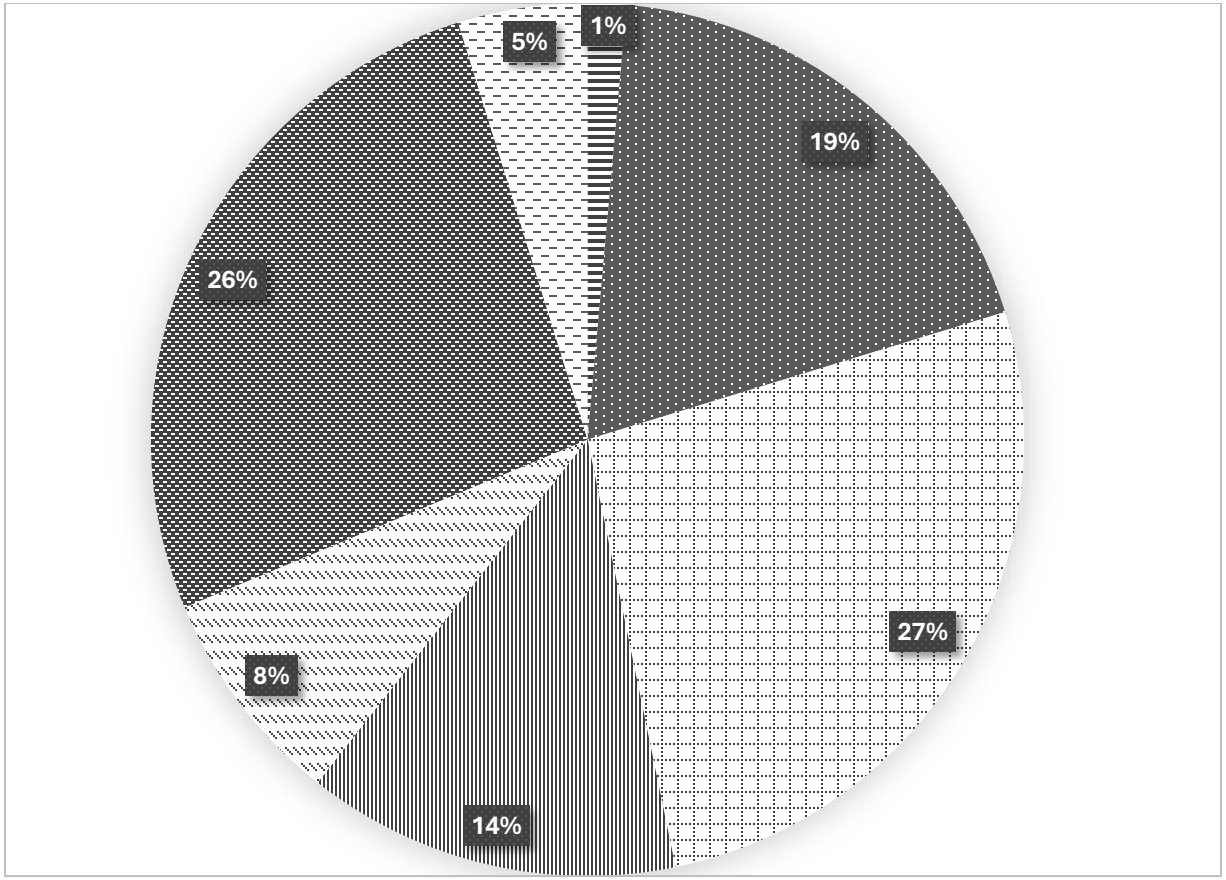

Figure 4.2: Acquirers Industry

Figure 4.2 shows the industry of acquirer firms. In my sample, there are a total of 419 M&A case: 1% of them are Agriculture, Forestry and Fishing, 19% are Construction, 27% are Manufacturing, 14% are Transportation, Communication, Electric, Gas and Sanitary services, 8% are Trade firms, 26% are Finance, Insurance, Real Estate firms and 5% are Consumer products and services firms

Appendix 4.1: Variables' Definitions and Data Sources

	Definition	Source
M&A performance		
CAR	Cumulative Abnormal Return 5 days around announcement date	Datastream
DeltaROA	Adjusted difference in ROA of acquirers between 2 years and 1 year after M&A deal	Datastream
CEO characteristics		
CEOduality	Dummy variable, equal to 1 if Chairman of acquirer firms also is CEO, and 0 otherwise	VietstockFinance
CEOtenure	The tenure of CEO of acquired firm at the time of M&A announcement	VietstockFinance
CEOedu_PhD	Dummy variables, equal to 1 if CEO's has the highest educational degree as PhD or more and 0 otherwise	VietstockFinance
CEOecon	Dummy variables, equal to 1 if CEO's major relates to Business, Economics or Finance and 0 otherwise	VietstockFinance
CEOturnover	Dummy variable, equal to 1 if acquirer firm change CEO in announcement Year	VietstockFinance
CEOage	The age of the CEO of acquiring firms at the time of deal announcement	VietstockFinance
CEOgender	Dummy variable, equal to 1 when CEO is male and 0 when CEO is female	VietstockFinance
Board characteristics		
Gender_div	Percentage of male directors in Board	VietstockFinance
NonEx	Total number of non-executive directors of Board	VietstockFinance
BODsize	Total number of directors in Board of Directors	VietstockFinance
BOMsize	Total number of members in Board of Management	VietstockFinance
Control variables		
Deal size	Natural logarithm of the total value of the transaction in thousands of Vietnam Dong	Thomson Reuters SDC database
Relative size	The deal size is divided by the acquirer's pre-acquisition market valuation.	Thomson Reuters SDC database
Target public	Dummy variable, equal to 1 if the target firm is publicly traded, and 0 otherwise.	Thomson Reuters SDC database
Control deal	Dummy variable, equal to 1 if the deal is control deal, and 0 otherwise	Thomson Reuters SDC database

Payment type	Dummy variable, equal to 1 if some stock was used in financing the deal, and 0 otherwise.	Thomson Reuters SDC database
Same Field	Dummy variable, equal to 1 if the acquirer and target firms have same 2 first digit SIC code, and 0 otherwise	Thomson Reuters SDC database
SOE	Dummy variable, equal to 1 if acquirer firm is SOE, and 0 otherwise	VietstockFinance

TROIS ESSAIS SUR L'INVESTISSEMENT ET LA GOUVERNANCE D'ENTREPRISE AU VIETNAM

Résumé

Cette thèse comprend trois études empiriques sur l'investissement des entreprises et la gouvernance d'entreprise dans le contexte vietnamien. Plus précisément, elle traite de la manière dont les informations concernant les prix des actions et les mécanismes de gouvernance d'entreprise influencent les décisions des entreprises au Vietnam.

La première étude analyse la qualité d'information des prix des actions et son rôle dans la modération de l'apprentissage managérial à partir des indicateurs du marché boursier. En considérant un échantillon de 1,347 entreprises côtées en bourse sur le marché vietnamien de 2006 à 2022, les résultats révèlent que la performance du marché boursier influence positivement les décisions d'investissement des entreprises, affectant à la fois les niveaux d'investissement et les variations annuelles du capital investi. L'étude confirme l'hypothèse de l'apprentissage managérial, montrant que les décisions d'investissement des entreprises vietnamiennes deviennent plus sensibles aux prix des actions lorsque ces prix contiennent une plus grande quantité d'informations spécifiques à l'entreprise. De plus, les contraintes financières renforcent la relation entre les rendements passés des actions et les investissements des entreprises. Des analyses par sous-échantillons indiquent en outre que les prix des actions guident de manière significative les décisions d'investissement des gestionnaires dans les entreprises privées, mais cet effet est moins clair pour les entreprises d'État. En outre, la sensibilité des investissements en faveur des informations privées contenues dans les prix des actions est plus forte chez les petites entreprises, tandis qu'un modèle inverse est observé dans les grandes entreprises.

La deuxième étude examine si la qualité d'information des prix des actions modère la relation entre les réactions du marché aux annonces de fusions et acquisitions (F&A) et la réalisation des transactions dans 440 cas de 2008 à 2022. Contrairement à l'hypothèse conventionnelle, les résultats ne soutiennent pas la qualité des informations des prix des actions comme moyen de modération. Cependant, un effet d'interaction apparaît, indiquant que les transactions recevant une faible attention des investisseurs, mais des réponses positives du marché, ont une probabilité plus élevée de réussite. Cela suggère que les gestionnaires pourraient privilégier la qualité plutôt que la quantité des indicateurs du marché, remettant en question les vues traditionnelles sur le rôle des retours du marché dans la détermination des résultats des F&A. Une analyse plus approfondie révèle que les acquéreurs ayant surmontés de nombreux échecs par le passé sont plus susceptibles de réussir à mener à bien les transactions futures. Cette relation positive est particulièrement marquée dans les transactions impliquant des tailles de transaction relatives plus grandes, mettant en évidence l'importance de la résilience managériale et de l'apprentissage des expériences passées.

La troisième étude explore l'influence des caractéristiques du PDG sur la performance des F&A. Elle reprend partiellement l'étude de Pham et al. (2015), en utilisant un ensemble de données mises à jour de 419 transactions de F&A de 2008 à 2022. Conformément à l'étude de référence, la dualité du PDG est positivement associée aux rendements des actions pendant la période 2008-2014, mais cet effet n'est pas observé après 2015. Cela soutient l'idée que la dualité du PDG peut améliorer la performance de l'entreprise dans des contextes caractérisés par de faibles conflits d'agence, tels que les premières étapes de l'évolution du marché vietnamien. De plus, l'étude examine de nouveaux facteurs de gouvernance, montrant que le parcours éducatif du PDG et la diversité du conseil d'administration améliorent considérablement la performance des F&A.

Mots clefs français :

Investissement des entreprises, Gouvernance d'entreprise, Informations sur le cours des actions, Décisions des entreprises

THREE ESSAYS ABOUT CORPORATE INVESTMENT AND CORPORATE GOVERNANCE IN VIETNAM

Abstract

This dissertation comprises three empirical studies on corporate investment and corporate governance within the Vietnamese context. Specifically, it investigates how information contained in stock prices and corporate governance mechanisms influence firm decisions in Vietnam.

The first study analyses stock price informativeness and its role in moderating managerial learning from stock market signals. Considering a sample of 1,347 public firms in Vietnam stock market from 2006 to 2022, the findings reveal that stock market performance positively influences firm investment decisions, affecting both investment levels and year-over-year changes in investment capital. The study confirms the managerial learning hypothesis, showing that investment decisions by Vietnamese firms become more sensitive to stock prices when these prices include greater amounts of firm-specific information. Additionally, financial constraints strengthen the relationship between past stock returns and firm investment. Subsample analyses further indicate that stock prices significantly guide managerial investment decisions in private-owned enterprises, but this effect is less clear for state-owned enterprises. Furthermore, the sensitivity of investment to private information in stock prices is higher among smaller firms, whereas the opposite pattern is observed in larger firms.

The second study investigates whether stock price informativeness mediates the relationship between market reactions to M&A announcements and deal completion of 440 cases from 2008 to 2022. Contrary to the conventional hypothesis, the findings do not support stock price informativeness as a mediator. However, an interaction effect emerges, indicating that deals receiving low investor attention, but positive market responses have a higher probability of successful completion. This suggests that managers might prioritize the quality rather than the quantity of market signals, challenging traditional views of market feedback's role in shaping M&A outcomes. Further analysis reveals that acquirers with a history of overcoming past failures are more likely to successfully complete future transactions. This positive relationship is especially pronounced in deals involving larger relative transaction sizes, highlighting the importance of managerial resilience and learning from prior experiences.

The third study explores the influence of CEO characteristics on M&A performance. It partially replicates the study of Pham et al. (2015), using an updated dataset of 419 M&A deals from 2008 to 2022. Consistent with the benchmark study, CEO duality is positively associated with stock returns during the period 2008–2014, but this effect is not observed after 2015. This supports the view that CEO duality can improve firm performance in contexts characterized by lower agency conflicts, such as the earlier stages of Vietnam's market evolution. Additionally, the study examines new governance factors, demonstrating that CEO educational background and board diversity significantly enhance M&A performance.

Keywords :

Corporate Investment, Corporate governance, Information in Stock Price, Firm Decisions

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