

DOES PERFORMANCE COMMITMENT IN M&A IMPROVE EARNINGS QUALITY ?

A Thesis

Presented to the Faculty of the Graduate School
of Cornell University

in Partial Fulfillment of the Requirements for the Degree of
Master of Science

by

Xiaoyu Hu

May 2022

© 2022 Xiaoyu Hu
ALL RIGHTS RESERVED

DOES PERFORMANCE COMMITMENT IN M&A IMPROVE EARNINGS
QUALITY ?

Xiaoyu Hu, MS.

Cornell University 2022

I propose an empirical investigation of market response to the implementation of performance commitment in M&As using China's stock market evidence. We hypothesize that performance commitment serves as a tool to reduce information asymmetry of the target in acquisitions and enable investors to better forecast future earnings, thus improving earnings quality. Using a difference-in-difference design(DID), we observe that the investors responsiveness to earnings measured by earnings response coefficient(ERC) for acquirers with performance commitment will exhibit a more significant increase than that of acquirers without performance commitment before and after the completion of M&A. This pattern is more pronounced in firms who exhibit negative unexpected earnings relative to those with positive unexpected earnings. Our evidence suggests that earnings management is more significant in acquirers with positive unexpected earnings due to managers' motives to meet the expected earnings and avoid being punished.

Biographical Sketch

Xiaoyu Hu is an MS student in the field of Applied Economics and Management within the Charles H.Dyson School of Applied Economics and Management at Cornell University. From 2016 to 2020, she majored in Accounting and Finance in Jinan University in China, and received her Bachelor's degree in Business Administration in 2020. From 2020 to 2022, she pursued master of science degree in applied economics and management with focus on management in the Charles H.Dyson School of Applied Economics and Management at Cornell University. From August 2022, she will continue her graduate study in the PhD program of Accounting in the Carroll School of Management at Boston College.

Acknowledgements

I would like to thank Prof.Calum Turvey and Prof.Nick Guest for their advice on my thesis improvement. All errors are my own.

Table of Contents

Biographical Sketch	iii
Acknowledgements	iv
Table of Contents	v
List of Tables	vi
1 Introduction	1
2 Literature Review	8
2.1 Market Reaction to M&A activities	8
2.2 The Practice of Performance Commitment in Chinese M&As	10
2.3 The Market Responsiveness to Reported Earnings	11
3 Theory and Hypothesis Development	13
4 Methodology	19
4.1 Sample Construction	19
4.2 Research Design	20
5 Empirical Results	27
5.1 Descriptive Statistics	27
5.2 Performance Commitment and Market Response	30
5.3 Performance Commitment and Earnings Response	32
6 Conclusion	41

List of Tables

5.1	Summary Statistics for Key Variables	29
5.2	Acquisition Performance	31
5.3	Performance Commitment and Earnings Response	35
5.4	Placebo test	36
5.5	Performance Commitment and Earnings Response (bad news v.s good news)	37
5.6	Performance Commitment and Earnings Response (UE <0)	38
5.7	Performance Commitment and Earnings Response (UE >0)	39
5.8	Earnings Management	40

Chapter 1

Introduction

With the development of Chinese capital market, the number of mergers and acquisitions (M&A) has been greatly increasing. The M&A activity in China is special in several aspects due to its immature capital market. First, around 90 percent of acquirers choose cash to make the payment for the target. Second, a "performance commitment" agreement is widely used in M&A deals, even though it is not required by the regulator. During the period of 2011 to 2019, the percentage of firms who adopted performance commitments in M&A transactions increased from 1% to around 45%. A performance commitment is a legal contract signed by the acquirer and the target in an acquisition. In the contract, the target firm promises to achieve a certain amount of earnings independently during the performance commitment period which is 3 years after the completion of M&A. If

the target firm does not fulfill the earnings goal, the target firm will compensate the shareholders of acquirer based on the gap between the actual earnings and expected earnings. This paper proposes to examine whether the implementation of performance commitment contract plays an important role in reducing the information asymmetry of acquisition and increasing the information content of earnings measured by the extent of investors responsiveness to the earnings announcements released by the acquirers.

The aim of performance commitment is to solve the information asymmetry problem in acquisitions especially when the target is private. Prior literature (Zhai et al. (2019)) documents that the information provided in the performance commitment contract helps reduce information asymmetry by demonstrating a more positive expectation from investors to the acquisitions with performance commitment than those without performance commitment, which is reflected by a higher cumulative abnormal return (CAR) around the M&A announcement period. However, the stock price premiums during the acquisition period cannot fully certify the information provided in performance commitment is value-relevant. According to real options theory, the performance commitment can reduce the uncertainty of investment because of the specific compensation promised by the target firm, thus increasing the valuation of the target. However, whether the performance commitment provides investors with more valuable information about the fundamentals of acquiring firms is still unsolved. Therefore, we attempt to further investigate the informativeness of performance commitment on reported earnings of acquirers during the performance commitment period which

is 3 years after acquisitions. In performance commitment contract, the definite earnings promised by the target serves as a benchmark for the acquisition outcome, enabling analysts and sophisticated investors to have a clearer picture of target firm's profitability and predict future earnings of acquirer more precisely. Under real option theory, if the target firm overstates performance then the 'strike' price linked to the commitment will be higher and the liability exposure will increase. To avoid excessive liability due to excessively optimistic forecasts the target firm has little incentive to exaggerate performance beyond the normal range of due diligence. If that is the case, the earnings target provided by the target will be an accurate estimate of its future earnings. However, the target firm may chase the short-term benefits and promise to achieve a certain amount of earnings beyond its profitability with overconfidence in the performance commitment contract to attract investors and get high stock return during the acquisition period. The overstated earnings in performance commitment contract leads to a higher possibility of failure to achieve expected earnings, which is a bad signal indicating that the profitability of target is exaggerated and the benefits of the acquisition is overvalued. In either case, investors will pay more attention to the earnings news and adjust their expectation for future earnings. Therefore, we make hypothesis that the earnings information content measured by earnings response coefficient (ERC) for acquirers with performance commitment will exhibit a more significant increase than that of acquirers without performance commitment during the performance commitment period. The earnings information content could be reflected in several dimensions. Here we focus on the decision usefulness for

equity valuation in which case the investor responsiveness measured by earnings response coefficient (ERC) can serve as a good indicator for measuring earnings quality (Dechow et al. (2010)).

For most acquisitions, the amount of compensation guaranteed by a performance commitment is the difference between promised earnings and actual earnings. For example, SHENZHEN HUAXIN CO. acquired 51% shares of Bada Garden Co. in 2015. The Bada Garden Co. promised that the net earnings attributable to shareholders of SHENZHEN HUAXIN CO. will be no less than 242 million in 2017. However, the actual earnings Bada Garden Co. achieved in 2017 was -300 million. According to the performance commitment contract, Bada Garden Co. compensated the shareholders of SHENZHEN HUAXIN CO. 542 million (242 million + 300 million). In order to avoid or reduce the compensation, the target has motives to conduct earnings management to meet the expected earnings or narrow the gap between actual earnings and promised earnings, thus hiding the fact that their profitability is overvalued. Under this circumstance, the information content of earnings will be hurt and therefore receive less investor attention. Thus, our third assumption is the increase of investor responsiveness to earnings for acquirers with performance commitment will be more significant in negative earnings surprise group.

We partition the whole sample into treatment and control groups: acquisitions with performance commitment (PC = 1) and acquisitions without performance commitment (PC = 0) to see whether investors respond differently between

these two groups. First, using an event study design, we find that acquisitions with performance commitment tend to have higher cumulative abnormal return (CAR) around the acquisitions announcement period, which means performance commitment tend to generate positive expectation from investors, consistent with Zhai et al. (2019). Second, to test the effects of performance commitment on the change of information content of earnings during the performance commitment period which is 3 years after the completion of acquisition, we code the three fiscal year-ends after the acquisition completion date as post-period (POST=1) and the three fiscal year-ends immediately before the acquisition announcement as the pre-period (POST=0). Using a variant of earnings response coefficient(ERC), we examine whether the earnings surprise (UE) as captured by the difference between actual earnings and analyst consensus scaled by standard deviation contains more value-relevant information. Using a difference-in-difference analysis, we find a more statistically reliable increase in information content of earnings among acquirers in acquisitions with performance commitment contract relative to acquirers in acquisitions without performance commitment contract. To identify whether investors pay more attention to negative earnings surprise during the performance commitment period, we further create an indicator as to whether the earnings surprise is negative or not and incorporate the four interaction term: $\underline{PC}_i * \underline{POST}_t * \underline{UE}_{i,t} * \underline{Bad}_{i,t}$ in our regression. The coefficient returned on the four interaction term is significantly positive, which indicates that bad earnings news receives more attention during the performance commitment period. To explain such phenomenon, we test our hypothesis that the firms with positive earnings

surprise or meet the earnings benchmark exhibit more upward earnings management. We use adjusted-Jones model (Dechow et al. (1995)) to calculate earnings management and the result is consistent with our hypothesis. Considering the intention to have a performance commitment is almost definitely associated with specific firm characteristics, we adopt propensity score matching (PSM) to match the treatment group with control group so as to reduce the selection bias and conduct a placebo test to check its robustness.

Our study contributes to the literature that study the M&As as well as the growing literature that investigate the practice of Chinese M&A activities. Prior M&A literature believe that acquirers have incentives to manage earnings upwards during the acquisition period when they finance acquisitions using stock payment method since the stock price will be over-inflated if investors are misled by the overstated earnings, resulting in less shares paid for the target(e.g. Erickson and Wang (1999), Louis (2004)). However, acquisitions in China seldom adopt stock payment method partly because of its immature capital market and restrictions from China Securities Regulatory Commission. Even though the acquirers in China have less motive to manage earnings during the acquisition period, they may have motives to manage earnings after the acquisition due to the implementation of performance commitment. The practice of M&A and performance commitment have just become more and more popular in China during the recent 5 years and thus the extant literature regarding the M&As in China are limited. Most prior literature studying Chinese M&A activities(Yang et al. (2018),Ge (2015), Lennox et al. (2018)) mostly focus on the behaviors of the acquirers and tar-

get in M&A transactions as well as the characteristics of acquisitions such as payment method, cross-border etc. Only a few focus on the effects of performance commitment. Even though some literature document possible investment risk and stock price crash resulted from performance commitment(Zhai et al. (2019), LI et al. (2019) etc.), they do not deeply explore how investor process accounting information of the acquirers during the performance commitment period and whether earnings quality of acquirers change before and after acquisitions. Our research will focus on the function of performance commitment in M&As on increasing the information content of reported earnings and will be useful for the policy-makers to launch more effective regularities to make the capital market more efficient.

Chapter 2

Literature Review

2.1 Market Reaction to M&A activities

Prior literature suggests that firm-specific characteristics and deal-specific characteristics are associated with the market reactions to acquisitions. For instance, the method of payment in M&A activities plays an important role in many aspects such as risks, M&A premiums and firm performance after acquisitions. On the one hand, Erickson and Wang (1999) finds companies tend to management earnings upwards before stock-financed acquisitions using a sample of 55 stock-financed acquisitions. Consistent with Erickson and Wang (1999), Louis (2004) examines the market's efficiency in processing manipulated accounting reports and

provides strong evidence suggesting acquirers tend to overstate earnings proceeding an acquisition especially for firms who adopt stock swap. Generally, investors tend to respond negatively to stock-financed acquisitions especially when the targets are large and public (Andrade et al. (2001)), which can be explained by reasons including managerial hubris, the winner's curse, earnings management and overvalued equity (Travlos (1987), Roll (1986), Louis (2004)). On the other hand, Chang (1998) and Officer et al. (2009) indicate that acquisitions on average generate positive announcement period returns if the targets are private and smaller, which is mainly due to monitoring from the private targets' owners. Apart from the method of payment, firm-level characteristics including firm size, leverage, investment opportunities and ROA are found to be associated with the acquirer announcement returns (e.g. Moeller et al. (2004). Dong et al. (2006), Harford et al. (2012)).

The mergers and acquisitions activity has become very popular with development of Chinese capital market in the last decade. Therefore, there is a rapidly growing literature studying the relationship between capital market response and corporate acquisitions. Tang and Li (2018) provide evidence that VC/PEs have significant information content in M&A market, which can help investors build efficient portfolios. Li et al. (2020) shows that A-share (common stock) firms in Chinese stock market tend to initiate M&A when their stocks are undervalued and suggests that the pricing efficiency of the capital market significantly influences the timing behavior of acquisitions. Ren and He (2020) observes a positive effect of merge premium on the probability of shareholders' share pledging be-

cause of investors' overreaction. Similarly, Huacheng et al. (2010) observe that stock price reverses since the 180 days after the announcement date, which shows the existence of over-optimistic sentiment during the control transferring. Yang et al. (2018) measure M&A with goodwill and find that goodwill from M&A premiums can predict stock price crash risk through enhancing the company's accounting performance and investors' overreact to the M&As.

2.2 The Practice of Performance Commitment in Chinese M&As

In the recent five years, the performance commitment is widely used in M&A activities in China even though it's not required. According to LI et al. (2019), the proportion of acquisitions that have performance commitment increases from 6.94% in 2012 to 44,16% in 2017. The performance commitment agreement is the commitment of the acquired party to the acquirer during the M&A. Generally, the acquired party promises to achieve a certain amount of earnings independently in the next three fiscal years after the completion of M&A. If the acquired party cannot achieve the expected earnings, they will be punished through making a certain amount of compensation for investors. The formula used to calculate the compensation varies from firm to firm but mostly the calculation basis is the difference between promised earnings and actual earnings. The main purpose of

performance commitment agreement is to reduce the information asymmetry of the profitability of target assets. Zhai et al. (2019) study the association between performance commitment in M&As and asset valuation, indicating that performance commitment pushes up the asset valuation and the stock price because of signal effects and alleviation of information asymmetry. However, in recent years, most literature find that performance commitment tend to be abused in that acquirers have incentives to overstate the profitability of target to push the stock price upwards. Wang et al. (2017) uses the change of achievement ratio to demonstrate that M&As in China tend to have high performance commitment, which causes losses to small and medium investors and discourages market investment. Furthermore, LI et al. (2019) focus on the role of performance commitment in increasing the risk of stock price crash. They find a positive relationship between performance commitment in M&As and acquirers' future crash risk. Therefore, performance commitment is an important characteristic of Chinese stock market which cannot be ignored.

2.3 The Market Responsiveness to Reported Earnings

Since Ball and Brown (1968), there has been a large strand of literature using market response to earnings to study the decision usefulness of reported earnings in equity valuation. The earnings response coefficient (ERC) is often used as a proxy for earnings quality in some specific situations where the decision users

are mainly equity investors (Dechow et al. (2010)). Liu and Thomas (2000) recognize that the degree to which the ERC captures decision usefulness is sensitive to firm specific characteristics such as growth. Researchers have often used investor responsiveness to earnings measured by ERC to investigate the determinants of earnings informativeness such as accounting methods, corporate governance, firm fundamentals etc. For instance, Ferri et al. (2018) find that the information content of earnings captured by ERC increases when investors' uncertainty about managers' reporting objectives decreases. Manry et al. (2003) observe that market returns have a stronger relation with earnings for firms with timely auditor reviews of their interim earnings. The ERC of firms with high leverage is lower than those with low leverage (Dhaliwal et al. (1991)). Hayn (1995) suggest that ERCs are lower for the loss firms and Collins and Kothari (1989) find that earnings may be more informative for the firms with high growth opportunities. Mendenhall and Nichols (1988) further group the unexpected earnings into two groups – – – good news ($UE > 0$) and bad news ($UE < 0$) and find that bad news earnings announced in the early quarters have a more significant market reaction compared to good earnings news and bad news earnings announced in the fourth quarter. Besides, Graham et al. (2005) indicates that managers have great incentives to hit their earnings target in order to avoid negative market reaction. In order to achieve that, they might conduct earnings management. Thus, committing to achieving a certain level of earnings may influence how the stock market reacts to the firm's actual performance.

Chapter 3

Theory and Hypothesis Development

The agency theory suggests that the information asymmetry problem does exist between managers and shareholders in acquisitions. Managers have incentives to make their firm expand beyond the optimal size and thus increase their power and resources under their control. Morck et al. (1990) find that managerial objectives drive bad acquisitions since managers are likely to pursue personal benefits at the expense of shareholders. Jensen (1986) indicate that the agency problems can affect acquisition outcomes because managers may make poor investment decisions and destroy the firm value if there is abundant free cash flow especially when the information asymmetry between managers and shareholders is severe. In particular, information asymmetry may be more severe when target is privately held due to the limited publicly available information (Chen (2019)).

With performance commitment, the target firm is writing an option based on commitment and the acquiring firm is buying that option and thus paying a premium for the firm. According to the Black Scholes formula which is commonly used in option valuation, if the volatility (e.g. macro economic environment uncertainty) is high, then the option premiums should rise. Since the performance commitment period is mostly 3 years which is a relatively long period, we expect that the option premium resulted from performance commitment will be high, thus contributing a significant higher abnormal returns relative to those without performance commitment. Besides, the signaling theory suggests that in the case of severe information asymmetry, the performance commitment contract plays an important role because the certain amount of promised earnings in the contract provides more detail information about the future benefits arising from the acquisition, which in turn signals that the target firm has high profitability and therefore contributes to a higher investors expectation towards the acquisition. Besides, Bulan (2005) documents that real options behavior results in less investment with increased firm-specific uncertainty. The performance commitment contract serves as a real option guaranteeing a certain amount of cash flow after the acquisition, which means that investors can have less concern about the acquisition outcome since they can get compensation from the target if the promised net profits are not met. Based on the above analysis, we expect that performance commitment contract results in a higher valuation of acquisition and thus a higher cumulative abnormal stock return for acquirers in the short-window of acquisition announcement period. Therefore, we make hypothesis 1:

Hypothesis 1. The average cumulative abnormal return (CAR) will be higher for acquisitions with performance commitment relative to acquisitions without performance commitment.

Even though the cumulative abnormal return (CAR) during the acquisition announcement period is higher for acquisitions with performance commitment, we still cannot draw a conclusion that the implementation of performance commitment helps reduce information asymmetry. The real option theory suggests that the target firm in its promise to perform is writing a put option against future performance, and in purchasing the firm the acquirer is purchasing this option. The option itself is a compound option covering (typically) 3 years of performance. Under risk neutral valuations the value of this option plays a critical theoretical role. If the target firm overstates performance then the 'strike' price linked to the commitment will be higher and the liability exposure will increase. To avoid excessive liability due to excessively optimistic forecasts the target firm has little incentive to exaggerate performance beyond the normal range of due diligence. Likewise, the acquiring firm must also pay in advance for the put option, and with overly optimistic forecasts the option premium to be paid will increase. The acquiring firm has no incentive to over-pay for the option value and will also seek to reduce the cost through its own due diligence. Through this operating channel negotiations will continue until both target firm and acquirer agree on an equilibrium option value that reflects neither overly optimistic or overly pessimistic forecasts about the present value of future cashflow. Based on that, we expect that the earnings information disclosed in earnings announcements is more value-

relevant during the performance commitment period. Since the information that a definite earnings the target will achieve during the performance commitment period is provided, investors and analysts are able to have a clearer picture of future cash flow after acquisition and easily forecast the post-acquisitions earnings with higher accuracy based on that information. As a result, they would pay more attention to unexpected earnings. In other words, it would be difficult to evaluate the true value of private target and attribute the profits or loss in reported earnings to acquisition without performance commitment. Thus, we expect the earnings information content for acquiring firms with performance commitment will increase more than that of firms without performance commitment during post-acquisition period. We measure the earnings information content using earnings response coefficient (ERC) The earnings response coefficient (ERC) measures investors' response to firm's earnings surprise and depends on the perceived credibility of the earnings report (Teoh and Wong (1993)). It serves as an indicator of earnings quality especially when the earnings information is used for equity valuation: a high ERC means that reported earnings has more precise signal for predicting the future earnings. We therefore hypothesize that acquirers with performance commitment will have a more significant increase in earnings response coefficient (ERC) during the performance commitment period relative to acquirers without performance commitment.

Hypothesis 2. The earnings response coefficient (ERC) will exhibit a more significant increase during the performance commitment period for acquiring firms with performance commitment relative to those without performance commit-

ment.

The market reaction to earnings news may vary from bad news to good news. Francis and Martin (2010) suggest that bad news recognized in earnings receives more attention from market and provides a disciplining mechanism for managers' behaviors. Graham et al. (2005) also denotes that most firms are believed to have the capacity to "find the money" to hit earnings targets because the stock market reactions to small EPS misses would be very severe. The definite amount of earnings promised by the target firm in performance commitment contract may improve monitoring and scrutiny over managers by helping acquirers' shareholders to better link firm performance to acquisition decisions and accurately assign blame for bad acquisition outcomes. If the target does not achieve the expected earnings, investors may suspect that the target firm overstates its profitability in performance commitment. Therefore, in the case where the performance commitment contract is implemented, the negative unexpected earnings are more likely to be viewed as a bad signal that the target is overvalued and the acquisition is a truly poor investment decision, thus receiving more investors attention. Without performance commitment, it is hard to attribute the negative earnings surprise to acquisition since investors have less information about the real benefits generated by acquisition. There is a possibility that even though the acquisition is indeed a bad decision, the acquiring firm may have incentives to collude with the target to manage earnings, achieving the expected earnings promised in performance commitment contract and avoid negative investors response. Therefore, we expect that the market reaction to negative earnings sur-

prise is more significant because investors anticipate that such bad earnings news contain more value-relevant information relative to good earnings news. Based on the assumption, we make hypothesis 3:

Hypothesis 3. For acquirers with performance commitment contract, the average earnings response coefficient (ERC) will exhibit a more significant increase towards negative earnings surprise.

Chapter 4

Methodology

4.1 Sample Construction

We obtain the data about Chinese listed firms' M&A deals (M&A announcement date, performance commitment, method of payment, outcome etc.) from China Stock Market & Accounting Research Database (CSMAR) which contains the information of Chinese listed firms. Our sample comprises M&A deals announced on or after January 1, 2011 since the performance commitment was not carried out by firms until 2011. The sample ends with deals announced in 2018 because we also require data for the performance commitment period which is 3-year after the M&A completion or termination date. We only keep M&A deals which are

successfully completed. We discuss our sample selection below. To remove the confounding effects of other targets' accounting information, we remove firms that make multiple acquisitions in any given year. We also delete acquisitions of public targets because the financial information of public targets is easily available so that investors could evaluate their profitability and predict the acquisition performance in the next several years. Following prior literature, we only keep non-financial firms' M&A records because their accounting differs from industrial firms in several significant ways. We exclude acquirers that are not listed firms since we cannot observe market response for non-listed firms. We also exclude the M&A records where the total amount of transaction is less than ten million. Finally, we delete international targets because private firms outside China may have disclosed their financial information. We further obtain firm fundamental data from CSMAR, including variables for earnings, stock return, and other firm level characteristics used as controls. We delete the sample where the firm fundamental data is missing. The screens result in a total of 2059 acquisitions in CSMAR database.

4.2 Research Design

We first use event study specification to estimate the relationship between performance commitment and market response. With reference to prior Chinese M&A literature, we measure market response using daily abnormal stock returns dur-

ing the acquirer's abnormal announcement period return over days (-1,1), where day 0 is the date of first acquisition announcement by the acquirer. We test H1 by estimating the following regression model:

$$CAR(M\&A)_{i,t} = \beta_0 + \beta_1 PC_i + ControlVariables + \delta_i + \epsilon_{i,t}(1)$$

where the $CAR(M\&A)_{i,t}$ is calculated by adding up the excess daily stock return during the short-term window of 1 days before and after the first announcement date of M&A. Daily abnormal stock returns are computed based on the market model and value-weighted market index. The reason why we take stock return 1 days before announcement into calculation is that the M&A information may be released to some investors privately. PC_i is an indicator as to whether the acquisition transaction has performance commitment or not. The PC_i variable equals one if the acquisition announces performance commitment, and zero otherwise. Under H1, we expect the coefficient of the PC_i to be positive. The δ_i refers to year and industry fixed effects.

Following prior literature (e.g. Moeller et al. (2004);Harford et al. (2012)), we include acquirer-specific and deal-specific control variables. We add firm-specific control variables including firm size (SIZE), Market-to-Book ratio (MB), leverage (LEV), Profitability (ROA). They are calculated at the fiscal year-end prior to the merger announcement. We control for acquirer's size and profitability because prior studies find that acquirer size is negatively associated with acquirer an-

nouncement returns and profitability is positively related to acquirer announcement return. We also control for acquirer's leverage because monitoring by debt holders are supposed to encourage managers to make better acquisition decisions. We include Market-to-Book ratio since prior literature provides evidence that acquirers' investment opportunities impact acquirer returns around M&A announcement. For deal-specific control variable, we include method of payment (CASH vs STOCK) because prior studies suggest that market reaction to private target acquisitions financed with equity is more positive than acquisitions financed with cash only. The STOCK indicator equals 1 if the acquirer is financed with stock and zero for cash-financed acquisitions. Plus, we include the dummy variable (DIFFIND) according to whether the acquirer and the target are in different industry classifications. All continuous variables are winsorized at the 1% and 99% levels.

We exploits the relationship between the adoption of performance commitment and the change of earnings response coefficient(ERC) using difference-in-difference identification strategy. To be specific, we use acquirers with performance commitment as the treatment sample and acquirers without performance commitment as control sample. Thus, we can examine how investors' response to annual earnings releases changed for treatment versus control acquirers before and after M&A completion. In particular, we estimate the following equation (2) to test our hypothesis 2:

$$\begin{aligned}
CAR(EA)_{i,t} = & \beta_0 + \beta_1 PC_i * POST_t * UE_{i,t} + \beta_2 PC_i + \beta_3 POST_t + \beta_4 UE_{i,t} + \\
& \beta_5 PC_i * POST_t + \beta_6 PC_i * UE_{i,t} + \beta_7 UE_{i,t} * POST_t + ControlVariables + UE_{i,t} * \\
& ControlVariables + \delta_i + \epsilon_{i,t}(2)
\end{aligned}$$

where the $CAR(EA)_{i,t}$ is calculated by adding up the excess daily stock return during the short-term window of 1 days before and after the date of annual report of earnings. Following Teoh and Wong (1993), the $UE_{i,t}$ variable refers to unexpected earnings measured as the actual earnings disclosed minus a measure of investors' prior expectation of earnings scaled by the standard deviation. Prior literature often uses prior year's earnings or analysts' forecasts to measure the expected earnings. Here we only use analysts forecast considering that the prior year's earnings is not a good reference when the firm experience acquisitions. The standard deviation is calculated based on the unexpected earnings 5 years prior to the current year. Consistent with eq.(1), the PC_i equals one if the acquirer announces performance commitment and zero otherwise. The $POST_t$ variable equals one during the performance commitment period which is 3 fiscal years immediately after the M&A completion date, and zero for the most recent three fiscal years prior to the M&A completion date. Our main parameter of interest is the interaction term $PC_i * POST_t * UE_{i,t}$, which captures the change of earnings response

coefficient for acquisitions with performance commitment relative to acquisitions without performance commitment before and after the M&A completion. We add interaction terms $PC_i * POST_t$, $PC_i * UE_{i,t}$ and $UE_{i,t} * POST_t$ to control for time-varying and time-invariant differences. Under H2, we expect the coefficient of $PC_i * POST_t * UE_{i,t}$ to be positive.

To further test Hypothesis 3, we add the negative earnings surprise indicator and its interactions with the main variables including PC , $POST$ and UE on the basis of equation (2) and estimate the following equation (3):

$$CAR(EA)_{i,t} = \beta_0 + \beta_1 PC_i * POST_t * UE_{i,t} * Bad_{i,t} + \beta_2 PC_i * POST_t * Bad_{i,t} + \beta_3 PC_i * UE_{i,t} * Bad_{i,t} + \beta_4 POST_t * UE_{i,t} * Bad_{i,t} + \beta_5 PC_i * POST_t * UE_{i,t} + \beta_6 PC_i + \beta_7 POST_t + \beta_8 UE_{i,t} + \beta_9 Bad_{i,t} + \beta_{10} PC_i * POST_t + \beta_{11} PC_i * UE_{i,t} + \beta_{12} UE_{i,t} * POST_t + \beta_{13} Bad_{i,t} * POST_t + \beta_{14} UE_{i,t} * Bad_{i,t} + \beta_{15} Bad_{i,t} * PC_i + ControlVariables + UE_{i,t} * ControlVariables + \delta_i + \epsilon_{i,t} \quad (3)$$

where $Bad_{i,t}$ equals 1 if the unexpected earnings (UE) is negative. Other variables are defined as the same as that in equation (2). Our main parameter of interest is the interaction term $PC_i * POST_t * UE_{i,t} * Bad_{i,t}$, which captures the change of earnings response coefficient for acquisitions with negative unexpected earnings during the performance commitment period relative to those without negative

bad earnings news during the performance commitment period. Under the H3, the coefficient returned on $PC_i * POST_t * UE_{i,t} * Bad_{i,t}$ is significantly positive.

Following prior literature on ERCs (e.g. Collins and Kothari (1989); Easton and Zmijewski (1989)), we include several control variables as well as their interactions with UE including firm size ($SIZE$), investment opportunities (BM), beta ($Beta$), leverage (LEV), earnings persistence ($Persistence$), a loss indicator ($Loss$). Industry fixed effects and year fixed effects are also included. All continuous variables are winsorized at the 1% and 99% levels.

To get a robustness check, we test our hypothesis 3 in an alternative way: we do a sorting regression by estimating the equation (2) in two groups: firms with positive unexpected earnings and firms with negative unexpected earnings after the M&A completion. Under H3, we expect the coefficient of $PC_i * POST_t * UE_{i,t}$ is more significant and positive in negative unexpected earnings group.

To mitigate the concern of selection bias, we adopt propensity score matching (PSM) to match the treatment sample (PC = 1) with control sample (PC = 0) based on firm characteristics that might be associated with the tendency to have performance commitment including firm size ($SIZE$), risk (LEV), investment opportunities (BM), method of payment ($STOCK$) and industry category. We then only keep the sample falling in the common area, which means some control units are discarded because their estimated propensity scores are less than the minimum for the treatment units (Dehejia and Wahba (1999)). We also conduct a placebo test where we randomly assign units into treatment and control group

and run the same regression.

Chapter 5

Empirical Results

5.1 Descriptive Statistics

Panel A in table 5.1 present the summary statistics for the variables included in the study. The acquirers' cumulative abnormal returns (CAR(M&A)) around the M&A announcement have a mean of 1%, which is consistent with the prior evidence that investors on average respond positively to private target acquisitions. We all use CAR in percentage terms for below analysis. In terms of whether the target has performance commitment in transaction or not, 29% of the acquisitions in my sample have performance commitment in announcement, which is consistent with prior finding (LI et al. (2019)).

Panel B in table 5.1 provides mean values and differences of variables included eq.(1) for acquisitions with performance commitment ($PC = 1$) and acquisitions without performance commitment ($PC = 0$). The difference test provides some initial univariate evidence associated with my hypothesis 1. The results show that when the target offers performance commitment in transaction, the average market reaction ($CAR(M\&A)$) to these acquisitions is 1% higher than the average market reaction ($CAR(M\&A)$) to those without offering performance commitment. When doing the empirical analysis, we scale the CAR by multiplying 100 so that the coefficients are in percentage. The results in panel B of table 2 also demonstrate that acquisitions with and without performance commitment differ along several dimensions. Specifically, acquirers tend to be smaller, less levered, stock-financed and have less investment opportunities in acquisitions with performance commitment. Therefore, we use the traditional propensity score matching to match the control sample with treatment sample in order to reduce the selection bias. The matching is based on the above firm characteristics.

Table 5.1: Summary Statistics for Key Variables

Panel A: Full sample							
Variable	Mean	Std.Dev	Min	25th Pctl	50 Pctl	75 Pctl	Max
CAR(M&A)	0.01	0.05	-0.3	-0.02	0	0.03	0.33
CAR(EA)	0	0.07	-0.36	-0.01	0.03	0.33	0.34
PC	0.29	0.45	0	0	0	1	1
POST	0.63	0.48	0	0	1	1	1
STOCK	0.02	0.14	0	0	0	0	1
DIFFIND	0.34	0.47	0	0	0	1	1
LEV	0.47	0.20	0.07	0.32	0.48	0.62	0.84
SIZE	22.98	0.92	20.82	22.34	22.90	23.59	24.89
ROA	0.05	0.04	-0.08	0.02	0.05	0.08	0.14
MB	0.59	0.24	0.16	0.41	0.59	0.77	1.03
Loss	0.09	0.28	0	0	0	1	1
Beta	1.15	0.28	0.55	0.97	1.17	1.33	1.82
Persistence	0.24	1.59	-0.52	-0.01	0.29	0.58	1.07
UE	-0.06	1.31	-9.54	-0.99	-0.04	0.81	7.94

Panel B: Difference Test			
Variable	PC = 1	PC = 0	Difference
CAR(M&A)	0.01	0	0.01***
LEV	0.37	0.42	-0.05***
SIZE	22.47	22.83	-0.36***
ROA	0.04	0.05	0.00
MB	0.52	0.59	-0.07***
DIFFIND	0.31	0.37	-0.06
STOCK	0.03	0.01	0.02***

This table reports summary statistics for main variables used in regressions. Panel A reports descriptive statistics for the full sample for the entire period (yearly data from fiscal year 2009 to 2020). *CAR(M&A)* is the sum of abnormal daily stock return during the short-term window of 2 days before and after the first announcement date of M&A. *CAR(EA)* is the sum of abnormal daily stock return during the short-term window of 1 days before and after the date of annual report of earnings. Daily abnormal stock returns are computed based on the market model and value-weighted market index. The *PC* equals one if the acquisition announces performance commitment, and zero otherwise. *POST* equals one during the performance commitment period which is 3 fiscal years immediately after the M&A completion date, and zero for the most recent three fiscal years prior to the M&A completion date. *STOCK* equals one if the acquisition is stock-financed and zero for cash-financed acquisition. *DIFFIND* equals one if the acquirer and the target are in difference industry and zero otherwise. *LEV* is the ratio of total debt to the total asset. *SIZE* is the logarithm of total assets measured at the end of the fiscal year. *ROA* is the ratio of total revenues to the total assets. *BM* is ratio of book value of equity to the market value of equity. *Loss* is an indicator variable that equals 1 if the basic earnings per share excluding extraordinary items is less than 0, and 0 otherwise. *Beta* is the regression coefficient from regressing excess daily returns for a firm on excess market returns over one calendar year. *Persistence* is the regression coefficient from regressing quarterly EPS on past quarter's EPS using up to 10 years data. *UE* is the actual earnings disclosed minus a measure of investors' prior expectation of earnings scaled by the standard deviation. Panel B reports the mean values for the treatment (acquisitions with performance commitment) and control (acquisitions without performance commitment). Also reported are the differences in mean values. All continuous variables are winsorized at 5% level. ***, **, * indicates significance level at 1%, 5%, and 10%, respectively.

5.2 Performance Commitment and Market Response

Table 5.2 displays the multivariate results of estimating equation (1) to test whether the performance commitment is associated with more positive and significant market response. According to prior literature, the market response measured by cumulative abnormal daily return around the announcement date is also viewed as an indicator of acquisition performance. For comparison, we run OLS regression for the main variables in different situations (with or without control variables, with or without year and industry fixed effects). Column 1 shows that the coefficient on the performance commitment indicator (PC) is significantly positive at 5% level. Column 2 ~ Column 4 present results including the control variables as well as year and industry fixed effects. We can see that the coefficients returned on the performance commitment indicator are still positively significant at 5% level. Regarding the economic magnitude, the coefficients remain closed to 0.9 in four situations, meaning that the average acquisition performance (CAR(M&A)) in transactions with performance commitment is 0.9% higher than the average acquisition performance (CAR(M&A)) in transactions without performance commitment, which is consistent with Hypothesis 1.

Table 5.2: Acquisition Performance

	CAR(M&A)	CAR(M&A)	CAR(M&A)	CAR(M&A)
<u>PC</u>	0.90** (2.31)	0.90** (2.25)	0.86** (2.26)	0.87** (2.19)
<u>STOCK</u>			-0.19 (-0.15)	-0.54 (-0.41)
<u>LEV</u>			-0.39 (-0.32)	-0.49 (-0.31)
<u>SIZE</u>			-0.31 (-1.55)	-0.24 (-1.10)
<u>ROA</u>			3.21 (0.65)	2.01 (0.38)
<u>MB</u>			0.51 (0.57)	0.43 (0.39)
<u>DIFFIND</u>			-0.40 (-0.91)	-0.54 (-1.26)
<i>N</i>	2059	2059	2059	2059
<i>R</i> ²	0.03	0.04	0.1	0.1
YEAR FE	N	Y	N	Y
Industry FE	N	Y	N	Y

This table presents the results from the estimation of Eq.(1) which is aimed to examine whether performance commitment is related to higher excess stock return around M&A announcement period. In column (3) and (4), we add control variables as well as year and industry fixed effects. All columns use robust regression weights with weights from propensity score matching. *CAR(M&A)* is the sum of abnormal daily stock return during the short-term window of 2 days before and after the first announcement date of M&A. *PC* equals one if the acquisition announces performance commitment, and zero otherwise. *STOCK* equals one if the acquisition is stock-financed and zero for cash-financed acquisition. *DIFFIND* equals one if the acquirer and the target are in difference industry and zero otherwise. *LEV* is the ratio of total debt to the total asset. *SIZE* is the logarithm of total assets measured at the end of the fiscal year. *ROA* is the ratio of total revenues to the total assets. *BM* is ratio of book value of equity to the market value of equity. All continuous variables are winsorized at 5% level. ***, **, * indicates significance level at 1%, 5%, and 10%, respectively.

5.3 Performance Commitment and Earnings Response

sponse

Table 5.3 presents the multivariate results of estimating equation (2) to test the relationship between performance commitment and the change of earnings response coefficient. To begin with, the coefficient returned on unexpected earnings (UE) is positively significant at 1% level, meaning that the financial market is effective. Then, we still run OLS regression for main variables in four different situations (with or without control variables, with or without year and industry fixed effects) for comparison. In column (1) and column (2), we only include the indicators variables for the Post period (POST) and for the treatment sample (PC) and their interactions with each other and with UE again without firm characteristics and their interactions with UE. The coefficient on the three interaction term $PC * POST * UE$ is positively significant at 1% level. Column 2 ~ Column 4 show results including control variables as well as year and industry fixed effects. Even the magnitude of the coefficient on the interaction term $PC * POST * SUE$ decreases a little bit when including control variables as well as year and industry fixed effects, it is still positively significant at 5% level, which suggests that the acquirer's earnings response coefficient exhibit a more significant increase during the period of 3 years after the M&A completion if the target provides performance commitment. Taken together, the results in table 5.3 support H2. In terms of economic magnitude, the adoption of performance commitment increases the ERC by

0.78. Table 5.4 shows that results of placebo test where we randomly assign units into performance commitment group and non-performance commitment group. The main coefficients are not significant, which provides evidence that the performance commitment does play an important role.

Table 5.5 presents the multivariate results of estimating equation (3) to test whether there is a difference in the change of earnings response coefficient during the performance commitment period for two different groups: firms with negative unexpected earnings versus firm with positive unexpected earnings. The coefficient returned on the four-interaction term $PC * POST * UE * Bad$ is positively significant at 5% level even when we add control variables as well as year & industry fixed effects, which suggests that the market reaction to negative earnings news from acquirers with performance commitment is more dramatic relative to positive earnings news during the performance commitment period, thus supporting H3. In terms of economic magnitude, the bad news contribute to an increase of 3 in ERC level relative to good news.

To get robustness check, we divide our sample into two groups based on whether the unexpected earnings (UE) after acquisitions is negative or not and estimate equation (2) respectively. Table 5.6 displays the regression results for bad news group ($UE < 0$). It is clear to see that the coefficient returned on the interaction term $PC * POST * UE$ is positive and significant at 1% level. The magnitude is closed to 2% when including control variables and year & industry fixed effects. In contrast, table 5.7 shows that the coefficient of $PC * POST * UE$ only remain at 10%

significance level in good news group and the magnitude is around 1%, which is smaller than that of negative news group. That also demonstrates the earnings response coefficient for negative earnings news group increased more significantly during the performance commitment period after acquisitions, which is consistent with hypothesis 3.

Table 5.3: Performance Commitment and Earnings Response

	CAR(EA)	CAR(EA)	CAR(EA)	CAR(EA)
<u>PC*POST*UE</u>	1.01*** (3.33)	0.94*** (3.15)	0.94** (2.42)	0.78** (2.04)
<u>PC*POST</u>	-0.66* (-1.85)	-0.46 (-1.31)	-0.33 (-0.72)	-0.09 (-0.19)
<u>PC*UE</u>	-0.81*** (-3.44)	-0.80*** (-3.41)	-0.43 (-1.33)	-0.35 (-1.08)
<u>POST*UE</u>	-0.65*** (-2.74)	-0.65*** (-2.80)	-0.81*** (-2.70)	-0.77*** (-2.60)
<u>UE</u>	1.06*** (5.87)	1.06*** (5.94)	0.63 (-0.22)	0.44 (-0.15)
<u>PC</u>	0.29 (1.03)	0.07 (0.26)	-0.10 (-0.28)	-0.27 (-0.72)
<u>POST</u>	-0.08 (-0.31)	-0.03 (-0.11)	-0.37 (-1.09)	-0.31 (-0.87)
<u>LEV</u>			-1.47** (-2.26)	-1.63** (-2.48)
<u>SIZE</u>			0.30* (1.94)	0.36** (2.20)
<u>Loss</u>			-0.98** (-2.35)	-0.70* (-1.69)
<u>MB</u>			-0.50 (-0.92)	-0.25 (-0.47)
<u>Beta</u>			0.33 (0.81)	0.64 (1.35)
<u>Persistence</u>			-0.12 (-1.18)	-0.12 (-1.10)
<u>UE*SIZE</u>			0.09 (0.74)	0.09 (0.71)
<u>UE*Loss</u>			0.40 (1.24)	0.38 (1.21)
<u>UE*MB</u>			-0.50 (-1.08)	-0.47 (-1.02)
<u>UE*LEV</u>			-0.46 (-0.86)	-0.63 (-1.18)
<u>UE*Beta</u>			0.04 (0.11)	-0.02 (-0.07)
<u>UE*Persistence</u>			-0.06 (-1.07)	-0.06 (-1.00)
<u>N</u>	5328	5328	5328	5328
<u>R²</u>	0.02	0.04	0.03	0.06
<u>YEAR FE</u>	N	Y	N	Y
<u>Industry FE</u>	N	Y	N	Y

This table presents the results from the estimation of Eq.(2). In column (1) and (2), we regress 3-day cumulative abnormal returns around earnings announcements(CAR) on unexpected earnings(UE), indicators for performance commitment, performance commitment period and their interaction. In column (3) and (4), we add control variables as well as year and industry fixed effects. All columns use robust regression weights with weights from propensity score matching. All continuous variables are defined in the footnotes of table 5.1. ***, **, * indicates significance level at 1%, 5%, and 10%, respectively.

Table 5.4: Placebo test

	CAR(EA)	CAR(EA)	CAR(EA)	CAR(EA)
<u>PC*POST*UE</u>	-0.12 (-0.30)	-0.09 (-0.23)	-0.23 (-0.58)	-0.19 (-0.47)
<u>PC*POST</u>	0.51 (1.08)	0.54 (1.16)	0.62 (1.31)	0.67 (1.43)
<u>PC*UE</u>	0.05 (0.15)	0.02 (0.06)	0.14 (0.42)	0.10 (0.30)
<u>POST*UE</u>	-0.46* (-1.67)	-0.47* (-1.72)	-0.24 (-0.83)	-0.29 (-1.04)
<u>UE</u>	0.99*** (4.16)	0.96*** (4.11)	-0.76 (-0.26)	-0.50 (-0.17)
<u>PC</u>	-0.30 (-0.79)	-0.32 (-0.87)	-0.39 (-1.07)	-0.40 (-1.08)
<u>POST</u>	-0.68** (-1.96)	-0.62* (-1.72)	-0.84** (-2.42)	-0.67* (-1.82)
<u>LEV</u>			-1.43** (-2.19)	-1.64** (-2.48)
<u>SIZE</u>			0.28* (1.84)	0.37** (2.20)
<u>Loss</u>			-1.04** (-2.45)	-0.73* (-1.76)
<u>MB</u>			-0.52 (-0.96)	-0.29 (-0.55)
<u>Beta</u>			0.38 (0.94)	0.71 (1.50)
<u>Persistence</u>			-0.12 (-1.19)	-0.12 (-1.11)
<u>UE*SIZE</u>			0.09 (0.69)	0.08 (0.65)
<u>UE*Loss</u>			0.42 (1.32)	0.40 (1.26)
<u>UE*MB</u>			-0.46 (-0.98)	-0.44 (-0.96)
<u>UE*LEV</u>			-0.47 (-0.87)	-0.62 (-1.16)
<u>UE*Beta</u>			0.01 (0.03)	-0.04 (-0.11)
<u>UE*Persistence</u>			-0.06 (-1.02)	-0.06 (-0.98)
<u>N</u>	5328	5328	5328	5328
<u>R²</u>	0.01	0.03	0.03	0.05
<u>YEAR FE</u>	N	Y	N	Y
<u>Industry FE</u>	N	Y	N	Y

This table presents the results from the estimation of Eq.(2) with random assignment to treatment and control group. In column (1) and (2), we regress 3-day cumulative abnormal returns around earnings announcements(CAR) on unexpected earnings(UE), indicators for performance commitment, performance commitment period and their interaction. In column (3) and (4), we add control variables as well as year and industry fixed effects. All columns use robust regression weights with weights from propensity score matching. All continuous variables are defined in the footnotes of table 5.1. ***, **, * indicates significance level at 1%, 5%, and 10%, respectively.

Table 5.5: Performance Commitment and Earnings Response (bad news v.s good news)

	CAR(EA)	CAR(EA)	CAR(EA)	CAR(EA)
<u>PC*POST*UE*Bad</u>	2.40** (2.52)	2.38** (2.52)	3.06** (2.39)	3.03** (2.39)
<u>PC*POST*UE</u>	0.41 (0.61)	0.38 (0.56)	0.52 (0.61)	0.44 (0.52)
<u>PC*UE*Bad</u>	-1.39* (-1.93)	-1.40* (-1.94)	-2.07** (-2.08)	-2.08** (-2.06)
<u>POST*UE*Bad</u>	0.43 (0.57)	0.35 (0.48)	0.14 (0.14)	-0.05 (-0.05)
<u>PC*POST*Bad</u>	2.03* (1.77)	2.12* (1.87)	3.15** (2.08)	3.33** (2.25)
<u>PC*Bad</u>	-1.13 (-1.31)	-1.22 (-1.44)	-1.23 (-1.07)	-1.39 (-1.23)
<u>POST*Bad</u>	-0.37 (-0.44)	-0.45 (-0.53)	-0.54 (-0.49)	-0.71 (-0.66)
<u>UE*Bad</u>	-0.47 (-0.82)	-0.52 (-0.92)	-0.05 (-0.07)	-0.13 (-0.17)
<u>PC*POST</u>	-0.39 (-0.49)	-0.27 (-0.34)	-0.34 (-0.33)	-0.22 (-0.22)
<u>PC*UE</u>	-0.44 (-0.79)	-0.46 (-0.81)	0.12 (0.17)	0.15 (0.20)
<u>POST*UE</u>	-1.00* (-1.88)	-0.98* (-1.85)	-1.00 (-1.50)	-0.94 (-1.40)
<u>UE</u>	1.42*** (3.11)	1.47*** (3.20)	-0.59 (-0.20)	-0.33 (-0.11)
<u>PC</u>	0.13 (0.21)	-0.03 (-0.05)	-0.52 (-0.62)	-0.59 (-0.72)
<u>POST</u>	0.32 (0.54)	0.37 (0.62)	-0.08 (-0.10)	-0.03 (-0.04)
<u>Bad</u>	0.33 (0.53)	0.42 (0.68)	-0.01 (-0.01)	0.15 (0.19)
Controls?	N	N	Y	Y
UE*Controls?	N	N	Y	Y
N	5328	5328	5328	5328
R ²	0.02	0.04	0.04	0.06
YEAR FE	N	Y	N	Y
Industry FE	N	Y	N	Y

This table presents the results from the estimation of Eq.(3). In column (1) and (2), we regress 3-day cumulative abnormal returns around earnings announcements(CAR) on unexpected earnings(UE), indicators for performance commitment(PC), performance commitment period(POST), indicators for bad earnings new(Bad) and their interaction. In column (3) and (4), we add control variables as well as year and industry fixed effects. All columns use robust regression weights with weights from propensity score matching. All variables are defined in the footnotes of table 5.1. ***,**, * indicates significance level at 1%, 5%, and 10%, respectively.

Table 5.6: Performance Commitment and Earnings Response (UE <0)

	CAR(EA)	CAR(EA)	CAR(EA)	CAR(EA)
<u>PC*POST*UE</u>	1.78*** (3.21)	1.66*** (3.10)	2.05*** (2.87)	1.82*** (2.65)
<u>PC*POST</u>	0.36 (0.54)	0.49 (0.75)	1.15 (1.37)	1.38* (1.68)
<u>PC*UE</u>	-0.81*** (-3.44)	-0.80*** (-3.40)	-0.41 (-1.28)	-0.32 (-1.00)
<u>POST*UE</u>	-0.68 (-1.51)	-0.72* (-1.66)	-0.99* (-1.78)	-1.07** (-2.01)
<u>UE</u>	1.06*** (5.87)	1.06*** (5.93)	1.82 (0.44)	4.09 (0.98)
<u>PC</u>	0.29 (1.03)	0.07 (0.26)	-0.10 (-0.27)	-0.27 (-0.73)
<u>POST</u>	-0.12 (-0.24)	-0.10 (-0.20)	-0.62 (-0.95)	-0.69 (-1.08)
<u>LEV</u>			-1.72** (-2.07)	-2.01** (-2.41)
<u>SIZE</u>			0.22 (1.09)	0.19 (0.86)
<u>Loss</u>			-1.20** (-2.11)	-0.62 (-1.07)
<u>MB</u>			-0.92 (-1.36)	-0.22 (-0.34)
<u>Beta</u>			0.04 (0.07)	0.44 (0.70)
<u>Persistence</u>			-0.08 (-0.60)	-0.09 (-0.67)
<u>UE*SIZE</u>			0.01 (0.05)	-0.09 (-0.53)
<u>UE*Loss</u>			0.10 (0.24)	0.24 (0.56)
<u>UE*MB</u>			-0.83 (-1.34)	-0.56 (-0.91)
<u>UE*LEV</u>			-0.65 (-0.90)	-0.73 (-1.02)
<u>UE*Beta</u>			-0.17 (-0.35)	-0.25 (-0.52)
<u>UE*Persistence</u>			-0.03	-0.04
<i>N</i>	3695	3695	3695	3695
<i>R</i> ²	0.02	0.05	0.05	0.07
YEAR FE	N	Y	N	Y
Industry FE	N	Y	N	Y

This table presents the results from the estimation of Eq.(2) for the sample firms who exhibit negative unexpected earnings during the performance commitment period. In column (1) and (2), we regress 3-day cumulative abnormal returns around earnings announcements(CAR) on unexpected earnings(UE), indicators for performance commitment(PC), performance commitment period(POST) and their interaction. In column (3) and (4), we add control variables as well as year and industry fixed effects. All columns use robust regression weights with weights from propensity score matching. All variables are defined in the footnotes of table 5.1. ***,**,* indicates significance level at 1%, 5%, and 10%, respectively.

Table 5.7: Performance Commitment and Earnings Response (UE >0)

	CAR(EA)	CAR(EA)	CAR(EA)	CAR(EA)
<u>PC*POST*UE</u>	0.77*	0.72*	1.04*	0.95*
	(1.78)	(1.65)	(1.86)	(1.71)
<u>PC*POST</u>	-0.55	-0.35	-0.76	-0.51
	(-0.99)	(-0.64)	(-1.04)	(-0.72)
<u>PC*UE</u>	-0.81***	-0.81***	-0.40	-0.35
	(-3.44)	(-3.43)	(-1.24)	(-1.12)
<u>POST*UE</u>	-0.64**	-0.56*	-1.01**	-0.91**
	(-1.98)	(-1.73)	(-2.52)	(-2.33)
<u>UE</u>	1.06***	1.06***	2.29	0.63
	(5.87)	(5.91)	(0.73)	(0.21)
<u>PC</u>	0.29	0.10	-0.11	-0.31
	(1.03)	(0.35)	(-0.30)	(-0.83)
<u>POST</u>	-0.08	-0.14	-0.04	-0.15
	(-0.20)	(-0.35)	(-0.08)	(-0.29)
<u>LEV</u>			-1.04	-0.88
			(-1.32)	(-1.09)
<u>SIZE</u>			0.51***	0.42**
			(2.71)	(2.08)
<u>Loss</u>			-0.77	-0.64
			(-1.56)	(-1.31)
<u>MB</u>			-0.60	-0.26
			(-0.93)	(-0.39)
<u>Beta</u>			0.62	0.77
			(1.21)	(1.34)
<u>Persistence</u>			-0.33**	-0.30*
			(-2.03)	(-1.67)
<u>UE*SIZE</u>			-0.02	0.06
			(-0.18)	(0.42)
<u>UE*Loss</u>			0.19	0.18
			(0.56)	(0.53)
<u>UE*MB</u>			-0.38	-0.58
			(-0.74)	(-1.12)
<u>UE*LEV</u>			-1.10	-1.19*
			(-1.63)	(-1.77)
<u>UE*Beta</u>			0.07	0.04
			(0.19)	(0.09)
<u>UE*Persistence</u>			-0.12	-0.11
<i>N</i>	3770	3770	3770	3770
<i>R</i> ²	0.01	0.03	0.04	0.06
YEAR FE	N	Y	N	Y
Industry FE	N	Y	N	Y

This table presents the results from the estimation of Eq.(2) for the sample firms who exhibit positive unexpected earnings during the performance commitment period. In column (1) and (2), we regress 3-day cumulative abnormal returns around earnings announcements(CAR) on unexpected earnings(UE), indicators for performance commitment(PC), performance commitment period(POST) and their interaction. In column (3) and (4), we add control variables as well as year and industry fixed effects. All columns use robust regression weights with weights from propensity score matching. All variables are defined in the footnotes of table 5.1. ***, **, * indicates significance level at 1%, 5%, and 10%, respectively.

Table 5.8: Earnings Management

	EM	EM	EM	EM
<u>PC*POST*POS</u>	0.04** (2.09)	0.04** (2.17)	0.04** (2.06)	0.04** (2.17)
<u>PC*POS</u>	-0.02 (-1.37)	-0.02 (-1.43)	-0.02 (-1.27)	-0.02 (-1.34)
<u>POST*POS</u>	-0.00 (-0.15)	-0.00 (-0.28)	0.00 (0.28)	0.00 (0.12)
<u>PC*POST</u>	-0.04*** (-2.85)	-0.04*** (-2.80)	-0.04*** (-2.87)	-0.04*** (-2.83)
<u>PC</u>	0.03** (2.32)	0.03** (2.34)	0.03** (2.22)	0.03** (2.28)
<u>POST</u>	0.01 (1.55)	0.01 (1.27)	0.01 (1.20)	0.01 (1.09)
<u>POS</u>	0.00 (0.61)	0.01 (0.65)	-0.00 (-0.09)	0.00 (0.00)
<u>LEV</u>			-0.03* (-1.93)	-0.04** (-2.08)
<u>SIZE</u>			0.00 (1.48)	0.01* (1.86)
<u>MB</u>			0.02** (2.02)	0.02 (1.42)
<u>ROA</u>			0.20*** (3.01)	0.19*** (2.83)
<i>N</i>	5328	5328	5328	5328
<i>R</i> ²	0.01	0.02	0.02	0.03
YEAR FE	N	Y	N	Y
Industry FE	N	Y	N	Y

This table presents the results from the estimation of Eq.(5). In column (1) and (2), we regress nondiscretionary accruals on indicators for good news(POS), indicators for performance commitment(PC), performance commitment period(POST) and their interaction. In column (3) and (4), we add control variables as well as year and industry fixed effects. All columns use robust regression weights with weights from propensity score matching. All variables are defined in the footnotes of table 5.1. ***, **, * indicates significance level at 1%, 5%, and 10%, respectively.

Chapter 6

Conclusion

Our study researches the effect of performance commitment on acquisitions of private targets. We find that the implementation of performance commitment is associated with a better acquisition performance, which is reflected by a higher cumulative abnormal daily stock return during the acquisition announcement period. Further, we observe that investor responsiveness to annual earnings of acquirers who sign performance commitment agreement is more dramatic relative to acquirers without performance commitment. In particular, bad news receives more significant reaction than that of good news. Therefore, the practice of performance commitment help reduce information asymmetry and protect shareholders' interests to some degree.

This paper makes several contributions. First, our findings support that the

adoption of performance commitment is beneficial both firms and investors. For firms, performance commitment could achieve better acquisition performance by issuing a positive signal to investors. For investors, performance commitment can help better predict the future earnings and make right investment decisions. Second, our study provides important insights for the policy-makers to develop appropriate policy that can provide a discipline mechanism over firm misbehavior and improve the efficiency of capital market. Third, our research contributes to existing literature that study the M&A activity in China.

Evidently, our study has some limitations including the possible and unobserved confounding variable that drive firms to have performance commitment even though we use propensity score matching to reduce selection bias.

Bibliography

- Andrade, G., Mitchell, M., and Stafford, E. (2001). New evidence and perspectives on mergers. Journal of economic perspectives, 15(2):103–120.
- Ball, R. and Brown, P. (1968). An empirical evaluation of accounting income numbers. Journal of accounting research, pages 159–178.
- Bulan, L. T. (2005). Real options, irreversible investment and firm uncertainty: new evidence from us firms. Review of Financial Economics, 14(3-4):255–279.
- Chang, S. (1998). Takeovers of privately held targets, methods of payment, and bidder returns. The Journal of Finance, 53(2):773–784.
- Chen, C.-w. (2019). The disciplinary role of financial statements: evidence from mergers and acquisitions of privately held targets. Journal of Accounting Research, 57(2):391–430.
- Collins, D. W. and Kothari, S. (1989). An analysis of intertemporal and cross-sectional determinants of earnings response coefficients. Journal of accounting and economics, 11(2-3):143–181.

- Dechow, P., Ge, W., and Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. Journal of accounting and economics, 50(2-3):344–401.
- Dechow, P. M., Sloan, R. G., and Sweeney, A. P. (1995). Detecting earnings management. Accounting review, pages 193–225.
- Dehejia, R. H. and Wahba, S. (1999). Causal effects in nonexperimental studies: Reevaluating the evaluation of training programs. Journal of the American statistical Association, 94(448):1053–1062.
- Dhaliwal, D. S., Lee, K. J., and Fargher, N. L. (1991). The association between unexpected earnings and abnormal security returns in the presence of financial leverage. Contemporary Accounting Research, 8(1):20–41.
- Dong, M., Hirshleifer, D., Richardson, S., and Teoh, S. H. (2006). Does investor misvaluation drive the takeover market? The Journal of Finance, 61(2):725–762.
- Easton, P. D. and Zmijewski, M. E. (1989). Cross-sectional variation in the stock market response to accounting earnings announcements. Journal of accounting and economics, 11(2-3):117–141.
- Erickson, M. and Wang, S.-w. (1999). Earnings management by acquiring firms in stock for stock mergers. Journal of accounting and economics, 27(2):149–176.
- Ferri, F., Zheng, R., and Zou, Y. (2018). Uncertainty about managers' reporting objectives and investors' response to earnings reports: Evidence from the 2006 ex-

- ecutive compensation disclosures. Journal of Accounting and Economics, 66(2-3):339–365.
- Francis, J. R. and Martin, X. (2010). Acquisition profitability and timely loss recognition. Journal of accounting and economics, 49(1-2):161–178.
- Ge, J. (2015). An empirical study on method of payment and efficiency of merger and acquisition—evidence of taking listed company as a target in china. Accounting Research, 9:74–80.
- Graham, J. R., Harvey, C. R., and Rajgopal, S. (2005). The economic implications of corporate financial reporting. Journal of accounting and economics, 40(1-3):3–73.
- Harford, J., Humphery-Jenner, M., and Powell, R. (2012). The sources of value destruction in acquisitions by entrenched managers. Journal of financial economics, 106(2):247–261.
- Hayn, C. (1995). The information content of losses. Journal of accounting and economics, 20(2):125–153.
- Huacheng, W., Jian, S., Lu, D., and Chuang, L. (2010). Does the investors over-optimistic during the control transferring?[j]. Management World, 2:38–45.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. The American economic review, 76(2):323–329.

- Lennox, C., Wang, Z.-T., and Wu, X. (2018). Earnings management, audit adjustments, and the financing of corporate acquisitions: Evidence from china. Journal of accounting and economics, 65(1):21–40.
- LI, J., GUO, Y., and WEI, M. (2019). Performance commitment in m&as and stock price crash risk. China Journal of Accounting Studies, 7(3):317–344.
- Li, S., Huang, Z., and Guo, J. (2020). Capital market pricing and corporate acquisitions:. Economic Research Journal, 55(7):41–57.
- Liu, J. and Thomas, J. (2000). Stock returns and accounting earnings. Journal of Accounting Research, 38(1):71–101.
- Louis, H. (2004). Earnings management and the market performance of acquiring firms. Journal of financial economics, 74(1):121–148.
- Manry, D., Tiras, S. L., and Wheatley, C. M. (2003). The influence of interim auditor reviews on the association of returns with earnings. The Accounting Review, 78(1):251–274.
- Mendenhall, R. R. and Nichols, W. D. (1988). Bad news and differential market reactions to announcements of earlier-quarters versus fourth-quarter earnings. Journal of Accounting Research, pages 63–86.
- Moeller, S. B., Schlingemann, F. P., and Stulz, R. M. (2004). Firm size and the gains from acquisitions. Journal of financial economics, 73(2):201–228.
- Morck, R., Shleifer, A., and Vishny, R. W. (1990). Do managerial objectives drive bad acquisitions? The Journal of Finance, 45(1):31–48.

- Officer, M. S., Poulsen, A. B., and Stegemoller, M. (2009). Target-firm information asymmetry and acquirer returns. Review of Finance, 13(3):467–493.
- Ren, L. and He, S. (2020). Research on the influence of merger premium on the timing of share pledging. Accounting Research.
- Roll, R. (1986). The hubris hypothesis of corporate takeovers. Journal of business, pages 197–216.
- Tang, Q. and Li, W. (2018). Identifying m&a targets and the information content of vc/pes. China Journal of Accounting Research, 11(1):33–50.
- Teoh, S. H. and Wong, T. J. (1993). Perceived auditor quality and the earnings response coefficient. Accounting Review, pages 346–366.
- Travlos, N. G. (1987). Corporate takeover bids, methods of payment, and bidding firms' stock returns. The Journal of Finance, 42(4):943–963.
- Wang, J., Fan, Q., et al. (2017). A study on performance commitment in m&a and policy influence. Accounting Research, (2017):71–77.
- Yang, W., Song, M., and Feng, K. (2018). M&a goodwill, investor overreaction, and stock price bubbles and crashes. China Industrial Economics, 6:156–173.
- Zhai, J., Li, J., and Gu, Z. (2019). Does performance commitment in m&as push up the asset valuation? Accounting Research, 6:35–42.