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Strategic timing of corporate disclosures evidence from China

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Strategic Timing of Corporate Disclosures: Evidence from China

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Abstract

This thesis studies the strategic timing of corporate disclosures in the institutional context of China. It comprises three independent but linked studies which draw on both financial and psychological theories.

The focus is on the Chinese setting as the unique regulations governing corporate disclosures enables managers to strategically time their disclosures of quarterly reports. The sample comprises 18273 observations from 2006 to 2012 which covers both A and B shares from the Shanghai and Shenzhen stock exchanges.

Firstly, under the Chinese booking system of quarterly report disclosure, I examine whether managers delay the disclosure of bad news relative to good news. The listed firms in China are required to book disclosure dates of quarterly reports before legal disclosure periods, and they are allowed to change the dates after the bookings have been made. Through this booking system, the advance and delay of quarterly report disclosures can be observed directly. Supporting prior literature, I find that managers advance their first booking disclosure dates if quarterly reports reveal good news, but delay them if quarterly reports reveal bad news. I further demonstrate that managers' preference for modifying of first booking dates as a timing strategy appears to occur when they have strong incentives to withhold their firm news and potentially gamble that the subsequent release of relative market conditions could turn in their favor. In line with the prediction of Acharya et al. (2011), my results suggest that managers tend to advance their first booking dates, when relative market conditions are bad. Conversely, they are likely to postpone them, when relative market conditions are good.

The second study utilizes the Chinese overlapping legal disclosure period between an annual report of one year and the subsequent first quarterly report to test whether

the nature of firm's news influences the release sequence of the two financial information sources. Mental accounting theory suggests that individuals tend to integrate losses and segregate gains. In line with this theory, I find that managers are willing to release their annual report and subsequent first quarterly report simultaneously if both reports reveal bad news, but separately if both reports reveal good news. When two reports reveal conflicting information, managers are likely to make separate disclosure, if the annual report reveals good news and the subsequent first quarterly report reveals bad news. In particular, I demonstrate that managers indeed achieve simultaneous and separate disclosure through amending the first booking dates of their annual report and subsequent first quarterly report.

Baker and Wurgler (2007) suggest that both high proportions of retail investors and short sale constraints enable Chinese stock markets to be a natural experiment for investor sentiment studies. Therefore, utilizing Chinese data, in the final study, I investigate whether investor sentiment affects managers' decisions of quarterly report disclosures. Since the stock prices tend to be higher during high sentiment periods than low sentiment periods, managers may choose to accelerate the disclosure dates of their quarterly report during the high sentiment periods, conversely, decelerate them during the periods of low sentiment. The results support this and are especially pronounced for firms releasing bad news, who appear to (1) release their firm news earlier than firms with good news when sentiment is high and (2) delay quarterly report disclosures more than firms with good news when sentiment is low.

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Declarations

I hereby certify that this thesis has not been accepted for any award, and is not being submitted concurrently for any award and that it is my own work.

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I agree to deposit an electronic copy of my thesis (the Work) in the Bangor University (BU) Institutional Digital Repository, the British Library ETHOS system, and/or in any other repository authorized for use by Bangor University and where necessary have gained the required permissions for the use of third party material.

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List of Variables

CBLAG	continuous booking lag continuous variable, difference between actual disclosure date and first booking date of quarterly report
BLAG	booking lag 0, 1 dummy variable of continue booking lag, if actual disclosure date is later than first booking date, it equals to 1, conversely, if actual disclosure date is earlier than first booking date, it equals to 0.
CNEWS	earnings surprise difference between earnings per shares of same quarter in two successive years
NEWS	firm news 0, 1 dummy variable of earnings surprise, it equals to 1, if firm's earnings surprise is bigger than 0, and 0, otherwise.
MNEWS	relative market condition 0, 1 dummy variable of difference between a firm’s earnings surprise and market's average earnings surprise, it is defined as 1, if a firm’s earnings surprise is greater than market's average earnings surprise, and 0, otherwise.
SimDis	simultaneous disclosure 0, 1 dummy variable, it is 1, if a firm releases its annual report and subsequent first quarterly report on the same day, and 0, otherwise.
ABQBNews	both bad news

	0, 1 dummy variable, it equals to 1, if firm news is bad in both annual report and subsequent first quarterly report; and 0, otherwise
AGQGNews	both good news 0, 1 dummy variable, it equals to 1, if firm's news is good in both annual report and subsequent first quarterly report; and 0, otherwise
ABQGNews	annual bad and quarter good news 0, 1 dummy variable, it equals to 1, if annual report reveals bad news and subsequent first quarterly report reveals good news, and 0, otherwise
AGQBNews	annual good and quarter bad news 0, 1 dummy variable, it equals to 1, if annual report reveals good news and subsequent first quarterly report reveals bad news, and 0, otherwise
ADelay	annual booking delay 0, 1 dummy variable, it equals to 1, if actual disclosure date of annual report is later than its first booking date, and 0, otherwise
QDelay	quarter booking delay 0, 1 dummy variable, it equals to 1, if actual disclosure date of first quarterly report is later than its first booking date, and 0, otherwise
RLAG	reporting lag continuous variable, difference between actual disclosure date of quarterly report and first date of legal quarter report disclosure period divided by length of legal disclosure period
UNRLAG	unexpected reporting lag continuous variable, difference of a firm's actual disclosure dates in same quarter of two successive years
CCI	monthly consumer confidence index continuous variable
TURN	turnover continuous variable, turnover ratio detrended by the past two-period moving average

ADRATIO	A/D ratio continuous variable, ratio of number of advancing issues to declining issues
DIPRE	dividend premium continuous variable, difference between return on dividend-paying shares and that on on-paying shares
SIZE	firm size continuous variable, log of total asset
ME/BE	market to book ratio continuous variable, market capitalization divided by total common equity
FEV	financial leverage continuous variable, total debt divided by total equity
MAR	market category 0,1 dummy variable, category of the market, it equals to 1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise
AGE	listed year continuous variable, year of a firm has been a listed firm
INDU_DUM	industry dummies if a firm belongs to an industry, it equals to 1, and 0, otherwise there are totally ten industry categories which includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas
YQ_DUM	year and quarter dummies if a firm belongs to this year or this quarter, it equals to 1, and 0, otherwise.
Y_Dum	year dummies if a firm belongs to this year, it equals to 1, and 0, otherwise.

Chapter 1

Introduction

> *"It was one of the first lessons I learned when I arrived in Washington.... If you've got some news that you don't want to get noticed, put it out Friday afternoon at 4 p.m."*

David Gergen, counselor to President Clinton (1984) [1]

As the above statement suggests, timeliness is recognized as an important characteristic of accounting information by many accountants, managers and financial analysts. The American Accounting Association in 1954 observed that, "timeliness of reporting is an essential element of adequate disclosure". Various studies have addressed the question of timeliness in financial information disclosure as well. For example, Lurie and Pastena (1975), Kross (1981), Givoly and Palmon (1982) amongst others suggest that managers tend to release good news early but publish bad news late. Damodaran (1989) and DellaVigna and Pollet (2005) demonstrate

[1] New York Times, reprinted in The (Oakland) Tribune, April 7, 1984, page 1.

that managers are likely to release bad firm news on Fridays since they suggest Friday investor attention is lower than other weekdays.

In light of the argument of Dyer and McHugh (1975); Gennotte and Trueman (1996) amongst others, managers' strategic timing behaviour is likely to be driven by the goal of maximization of firm's capital value, this thesis investigates whether managers strategically time their disclosure dates of quarterly reports to obtain more favorable responses to their disclosures in the institutional context of China.

1.0.1 Good News Early and Bad News Late

Based upon unique Chinese settings of governing corporate disclosure, the first question this thesis addresses is whether managers strategically time the disclosure dates of their quarterly reports by amending the first booking dates.

In prior literature, the timeliness of financial information disclosure has been measured indirectly. For example, Givoly and Palmon (1982) define the disclosure of quarterly reports as early, on time, or late, based on the actual lag compared with that of prior year, or the actual lag compared with those of other firms during the year. The Chinese booking system of quarterly report disclosure creates a more direct way to observe the advance and delay of disclosure dates of quarterly reports. It requires listed firms in China to book disclosure dates of quarterly reports before the legal disclosure periods commences. After the bookings have been made, the listed firms are allowed to change them. Therefore, the advance and delay of quarterly report disclosures can be observed directly.

Following the "good firm news early" and "bad firm news late" hypotheses, proposed by Lurie and Pastena (1975), Kross (1981), Givoly and Palmon (1982) amongst others, I question whether managers amend the first booking dates of their quarterly reports according to the nature of their firm news. In turns, the firm news is measured by earnings surprise. If a firm's earnings surprise is positive, the firm news is good, and bad, otherwise. Carrying out various tests, I indeed find that managers tend to advance their first booking dates of quarterly reports if quarterly reports reveal good news, conversely, they are likely to delay them if quarterly reports reveal bad news.

I further demonstrate that managers are more likely to modify their original booking dates as a timing strategy, since they have incentives to withhold their firm news and gamble that the subsequent release of relative market conditions can hide or distinguish their bad or good news. In this thesis, I define the relative market news as the dummy variable of the difference between a firm's earnings surprise and market's average earnings surprise. For an individual firm, the relative market condition is bad, if their difference is negative, and good, otherwise. Consistent with the predictions of Acharya et al. (2011), when relative market conditions are bad, managers tend to advance their first booking dates, conversely, when relative market conditions are good, they are likely to postpone them.

1.0.2 Good News, Bad News and Simultaneous Disclosure

The second question addressed in this thesis is whether the nature of firm news influences the decisions of managers on the release sequence of two financial information

sources. The previous literature focuses on the discrete release of a single financial information source and pays limited attention to the release sequence of two financial information sources. In China, the regulations of quarterly report disclosure provides a natural experiment to examine this.

The China Securities Regulatory Commission (hereafter, CSRC) requires listed firms to release annual reports of one year within the first four months of the following year and to publish first quarterly reports of next year in April of the same year. Therefore, there is a overlapping legal disclosure period between those two reports which allows firms to release them simultaneously or separately.

Consistent with the predictions of mental accounting theory, my results show that managers prefer to make simultaneous disclosure, if two reports both reveal bad news, but separately, if they both reveal good news. Mental accounting theory, addressed by Thaler (1999), suggests that individuals have a propensity to integrate two losses and segregate two gains, since the utility of integrated losses is higher than the utility of segregated losses, whereas the utility of segregated gains is higher than the utility of integrated gains. The simultaneous disclosure of two bad news is also linked to the "big bath theory" which is proposed by Kirschenheiter and Melumad (2002) who argues managers have a propensity to manipulate this period's earnings to look worse so that the next period's earnings seem better in comparison.

Additionally, I find that managers prefer to release annual reports and subsequent first quarterly reports simultaneously, if the annual report reveals bad news but the subsequent first quarterly report conveys good news, conversely, managers are likely to publish them separately, if the annual report reveals good news but the

subsequent first quarterly report contains bad news. The difference between the two released news reflects the direction of firm's growth. Generally, the annual bad and subsequent quarter good news implies a favorable growth of the firm, whereas the annual good and subsequent quarter bad news signifies the the firms' prospects are worsening. Consequently, if the annual report reveals bad news and the subsequent first quarterly report conveys good news, the managers tend to use simultaneous disclosure to make the investor observe the favorable firm growth more directly. In contrast, if annual report reveals good news and subsequent first quarterly report contains bad news, the managers are likely to separate the disclosure in hope of lowering the probability of investor to detect the worsening of the firm.

There is, however, no statistical significance to support the latter association. A possible explanation is the negativity bias, which suggests that, even when of equal intensity, negative events have greater impacts on individuals than positive events. In this study, the annual good and quarter bad news indicates a negative event, whereas the annual bad and quarter good news implies a positive event. As a result, the managers appear to react more strongly to the annual good and quarter bad news, but react less to the annual bad and quarter good news.

1.0.3 Investor Sentiment and Strategic Timing of Quarterly Report Disclosure

As stated by Baker and Wurgler (2007), there is very little evidence on the relation between investor sentiment and corporate's disclosure decisions, thus, the third question addressed is whether investor sentiment affects timeliness of firms quarterly

report disclosure.

According to the paper of Baker and Wurgler (2007), because of the high proportion of retail investors [2] and "T+1 trading rule" [3], the Chinese stock market is a natural experiment for the study of investor sentiment. Utilizing Chinese data, I find that, consistent with the predictions of Mian and Sankaraguruswamy (2012), either for good firm news or bad firm news, stock prices react more favorable during periods of high sentiment periods than periods of low sentiment. In light of these findings, I hypothesize that, in order to obtain higher stock prices, when sentiment is high, managers are likely to release their quarterly reports early as a decline in optimism might occur if they delay, conversely, they prefer to delay the disclosures of quarterly reports during low sentiment periods in the hope that investor sentiment may improve.

My findings indeed provide some support for the hypotheses that early quarterly report disclosure tends to occur in the presence of high sentiment whereas late quarterly report disclosure appears to occur if sentiment is low. Additionally, I further illustrate that, the effect of investor sentiment on timeliness of quarterly report is stronger for firms with bad news than firms with good news. Firms with bad news appear to (1) release quarterly reports earlier than firms with good news when sentiment is high and (2) delay more than firms with good news when sentiment is low. This finding is also in line with the notion of the negativity bias. Even when of equal intensity, negative events have a greater effect on individuals' psychological state and processes than the positive events. In this study, for managers, the bad

[2] Retail investors tend to be irrational and are more likely to be subject to investor sentiment.

[3] "T+1 trading rule" is a specific short sell constrain in China which prevents investors from selling stocks bought on the same day.

news is a negative event whereas the good news is positive news. Consequently, managers react more strongly to the bad news than the good news.

On the basis of the unique Chinese settings, this thesis extends and deepens the study of strategic timing of corporate disclosures in literature. First, it provides a more direct context to test and demonstrate the good news early and bad news late hypothesis. Second, it is the first to empirically test whether relative market condition affects strategic timing of corporate disclosure. Third, based upon overlapping legal disclosure period between annual reports of one year and first quarterly report of subsequent year, the gap of identified literature on the release sequences of two financial information sources has been addressed. Fourth, to my knowledge, this is the first study to examine whether investor sentiment impacts on managers' strategic timing disclosure behaviour. Finally, the negative bias and mental accounting theory have been initially found in strategic timing of corporate disclosure.

The thesis is organized as follows. Chapter 2 reviews the relevant literature, Chapter 3 describes the institutional background; Chapter 4 address the hypotheses that managers amend their first booking dates according to the nature of firm news; Chapter 5 test the hypotheses that the nature of firm news influences the decisions of managers on the release sequence of annual report and subsequent first quarterly report; Chapter 6 examines the hypotheses that investor sentiment affects managers' timing strategy of quarterly reports; and Section 7 concludes.

Chapter 2

Literature Review

2.1 Financial Information Disclosure

Tian and Chen (2009) define financial information disclosure as "a series of behaviour regulations and activity standards for relevant parties in securities market who publicize the information related with securities by certain way in the process of issuing stocks, listing on the market, and trading, according to laws, and rules of securities administrative agencies and stock exchanges."(p.55)

2.1.1 Role of Financial Information Disclosure

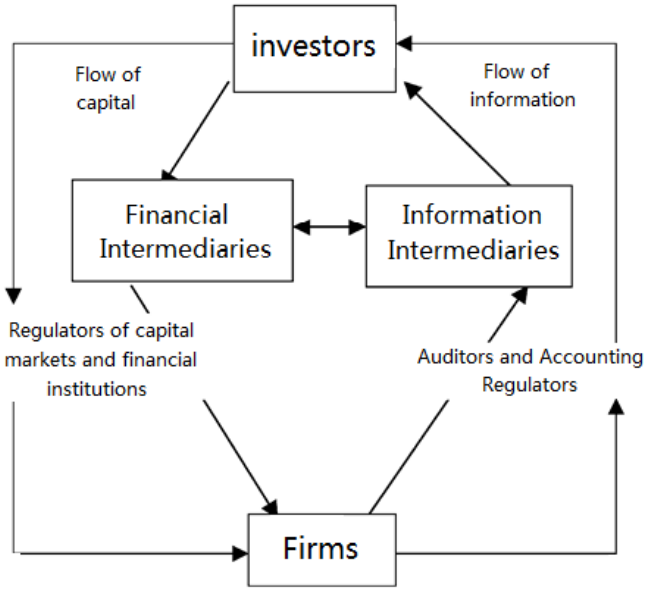
Financial information disclosure is critical for the functioning of an efficient capital market. Akerlof (1970) points out, without it, the lemons problem could arise from information differences and conflicting incentives between firms and outside

investors, which can potentially lead to a breakdown in the functioning of the capital market. For example, consider a situation, where a business idea is good and another is bad, both managers and outsider investors are rational and value these two business ideas conditional on their own information. If the investors can not distinguish between them, firms with bad ideas will try their best to argue that their idea is as good as the good ideas. This will cause investors to value both good and bad ideas at an average level. As a result, the capital market will rationally undervalue the good idea and overvalue the bad idea relative to the information only available to managers.

Healy and Palepu (2001) suggest that the disclosure of financial information is an efficient solution for this lemons problem and several ways can force the private financial information to be released. (1) The optimal contract between investors and firms can trigger the managers to fully disclose their private information, and thus, mitigate the misvaluation problem. (2) The regulated financial information disclosure by government requires managers to fully release their private information. (3) Information intermediaries, such as financial analysts and rating agencies, engage in uncovering managers' superior information as well.

Figure 2.1 shows the schematic of the role of financial information disclosure in the financial markets. The right side of this figure presents the flow of information from firms to investors and intermediaries. Firms can communicate directly with investors through financial reports, press releases and so on. Moreover, they can communicate with financial intermediaries or information intermediaries. The left side of this figure shows the flow of capital from investors to firms. Capital can flow to firms in two ways. First, it can flow directly from investors to firms, such as private

Figure 2.1: Financial and Information Flow in a Capital Market



Adapted from Healy and Palepu (2001)

equity and angel financing. Second, it can be through financial intermediaries, such as banks, venture capital funds, and insurance companies. Therefore, corporate's financial information disclosure plays an important role in financial market which helps to reduce the information asymmetry between firms and outsiders.

2.1.2 Mandatary and Voluntary Financial Information Disclosure

Financial information disclosure includes mandatory disclosure and voluntary disclosure. Their differences have been shown in Table 1. According to Adina and Ion (2008) (p.1407-1408), the mandatory disclosure of financial information " is ruled at national or even regional level through professional organizations or government

authorities, being practiced in most of the countries by all the firms regardless of their size, of their judicial, fiscal or national accounting system, the favorite finance sources and other factors with impact on disclosure policy". The purpose of mandatory disclosure is to satisfy users' informational needs and ensure production quality control through the observance of laws and standards. Voluntary disclosure arises as a need to supply users' unsatisfied needs from mandatory disclosure. Holland (1998) states that managers will publish voluntary disclosure until they observe the reduction of capital agency costs equals to the increment of the information publication costs for the market and other users. Since Chinese mandatory disclosure is the most important means of financial information disclosure, this thesis focuses on the strategic timming of quarterly report disclosure.

2.2 Strategic Timing of Financial Information Disclosure

Managers typically have superior financial information to outside investors on their firms' performance. When managers release financial information, they have to trade off between (1) making accounting decisions and disclosures to communicate their superior knowledge of firm's performance to investors, and (2) managing reported performance for contracting, political or corporate governance reasons. Considering the firm as a interest consortium of economic man [1], managers have incentives to

[1]During the late 19th century, Adam Smith introduced "economic man" which refers to a hypothetical individual who acts rationally to maximize personal utility. The "economic man" is able to satisfy economic models that push for consumer equilibrium. All choices of economic man are based on the maximization his or her interests.

release financial information at an optimal time to maximize their interests.

2.2.1 Firm News and Strategic Timing of Financial Information Disclosure

According to Graham et al. (2005), CFOs believe that earnings, the crucial element of firm news, are the key metric considered by outsiders and a large number of paper suggests that firm news is highly related to the timeliness of financial information disclosure. In accounting, the firm news is commonly measured as the earnings surprise, which is the difference between the reported earnings and the expected earnings of an entity (Pinto et al., 2010). Measures of a firm's expected earnings, in turn, include analysts' forecasts of the firm's profit (Defond and Park, 2001) and mathematical models of expected earnings based on the earnings of previous accounting periods (Bernard and Thomas, 1990; Soffer and Lys, 1999). The following several sections elaborate the association between firm news and strategic timing of financial information disclosure.

Firm News and Discrete Release of Single Financial Information Source

Most prior literature emphasizes on the influence of firm news on discrete release of single financial information source. It covers two research aspects. Firstly, the good news early and bad news late hypothesis has been addressed. Secondly, researchers investigate whether managers tend to release bad news at times of low attention to hide their bad news and consequently reduce associated market penalty.

Good News Early and Bad News Late Numerous paper provides the evidence of the good news early and bad news late hypothesis. For example, Kross (1981) examines whether firms systematically report bad firm news later than good firm news. In his study, the firm news is measured as the earnings forecast error. The positive forecast error is defined as "good" and those with negative forecast error are considered as "bad". The expectations of each firm's earnings announcement date is generated via each of five models. These five models include time series random walk model, cross-sectional random walk model, pure mean reversion model, random walk with drift model, and moving average mean reversion model. The earnings announcement date is defined as early if it falls before the date projected by a given model, whereas the earnings announcement date is defined as late if it falls after the date projected by that given model. In chapter six of this thesis, I employ their first model, time series random walk, to calculate the reporting lag. The study results of Kross (1981) suggest that firms with "bad" news are most likely to be released to the public later than expected, conversely, firms with "good" news are most likely to announce results to the public earlier than expected.

Givoly and Palmon (1982) also test the association between the nature of firm news and timeliness of annual earnings announcements. However, they employ a different way to define good and bad news and the expected date of release of results. They classify firm news to be good, bad, and neutral news (good news if the difference between earnings and average earnings is one of the m [2] largest on record for respective company; bad news if the difference between earnings and average earnings is one of the m smallest on record for respective company, and

[2]The values of m were used: 1, 3 and 5.

neutral news otherwise), and categorize the timeliness of earnings announcement as early, on time, and late, based on the actual lag compared with that of the prior year, or the actual lag compared with those of other firms during the year. Their findings support the predictions of Kross (1981) and show significant statistical support for the good news early and bad news late hypothesis. They further illustrate that the possible reason for their results is that the stock price reactions to early earnings announcements are significantly more pronounced than reactions to later earnings announcement. Thus, if managers release good firm news early, the favorable stock price reaction to good firm news may be stronger, conversely, if managers release bad firm news late, the unfavorable stock price reaction may be less pronounced.

Unlike previous studies, which only examined the announcement of annual earnings, Kross and Schroeder (1984) investigate the association between the timeliness of quarterly earnings announcements and the nature of reported earnings. On the basis of the unexpected reporting lag, they sort the announcements for each firm. They then combine the announcements for each firm so that those with the smallest reporting lag are grouped together, the next smallest are grouped together, and so on. Either for the total sample or the sub-sample of quarterly earnings announcements, the good news early and bad news late hypothesis is supported by a statistically significant relationship between the delay and the unexpected forecast error. In addition, they demonstrate that the timing of the announcement affects stock returns around the earnings announcement date. Abnormal returns of firms that announced early (late) are significantly higher (lower) than the returns of firms that announced late (early) for positive and negative earnings forecast error. These findings also holds both for large and small firms and for small absolute values of

the earnings forecast error.

Instead of using earnings forecast errors, Chambers and Penman (1984) use the abnormal stock returns after fiscal year end to measure the firm news. They divide earnings announcements into one of ten portfolios based upon the unexpected reporting delay. The results show that the early reports obtain positive announcement date abnormal returns and the late reports experience negative announcement date abnormal returns. In addition, they find significantly and negatively abnormal returns prior to announcement for firms that do not announce on or before their expected announcement date.

The phenomenon of good news early and bad news late also has been found in the institutional context of China. Haw et al. (2000) utilize Chinese A-shares data from 1994 to 1997 and test the association between the nature of firm news and the timeliness of annual report disclosure. Their results suggest that firms with good news release their annual reports earlier than firms with bad news, and loss firms release their annual reports the latest. In their study, they define the timeliness of annual report disclosure as the reporting lag and the unexpected reporting lag. The reporting lag is the number of days from the fiscal year-end to the annual report release date, and the unexpected reporting lag is the difference between the actual and expected reporting dates.

Firm News Release and Investor Attention In order to hide bad news and reduce the associated market penalty at times of decreased media and investor attention, managers prefer to release bad firm news during the low attention periods but publish good firm news during the periods of high attention as well. The low

attention periods indicate the periods that individuals pay comparatively limited attention on the released financial information, such as non-trading hours of a day or days before holiday, whereas the high attention periods mean the periods that individuals pay comparatively more attention on the released financial information, such as trading hours of a day or weekdays.

Patell and Wolfson (1982) study managers' intra-day timing of earnings and dividend announcements. Utilizing an exogenous classification scheme, they find increased earnings or dividends are more likely to be released during trading-hours than after the market has been closed. They also find price changes are more likely to be positive when the security markets are open, while there is a significant shift toward negative price changes for after-trading announcements. They suggest this stock price reaction could be due to managers' timing behavior in attempting to reduce the public exposure of bad news.

Theoretically, Trueman (1990) set up models and demonstrate that, under reasonable conditions, market prices reflect better the valuation implications of an earnings announcement when the announcement is made during trading hours than after after-trading hours. This provides further support for the empirical findings of Patell and Wolfson (1982), that is, managers prefer to publish positive earnings news during trading hours and negative earnings news after trading hours.

Prior literature also provides evidence that managers prefer to hide bad firm news to the days before holiday. For instance, Damodaran (1989) classify earnings and dividend announcements by the days of the week to see whether managers report bad news on Fridays. Their results show that earnings and dividend announcements

on Fridays are much more likely to contain reports of declines and to be associated with negative abnormal returns than those on other weekdays for firms in all size classes. Interestingly, the unfavorable firm news released by smaller firms tend to have negative returns on the following trading days suggesting that small firms have more propensity to disclose reports after close of trading and/or their stock prices adjust more slowly to the information in these reports.

DellaVigna and Pollet (2005) test whether limited attention among investors affects stock returns. They compare the response to earnings announcements on Fridays to the response on other weekdays and provide evidence of a less immediate response and more drift for Friday announcements. They find Friday announcements have a 20% lower immediate response; a 70% higher delayed response and 20% lower trading volume than on other weekdays.

Niessner (2014) find that, disproportionately, managers release negative events when investors are more distracted, such as on Fridays, before national holidays, and after the market closes. However, this pattern appears to be absent for non-negative events. Niessner (2014) also demonstrates that there is a significant under-reaction return following negative Friday disclosures which persists for approximately three weeks, but Niessner (2014) finds no return under-reaction for disclosures on other days of the week. In addition, Niessner (2014) suggest that the lower Google searches and trading volume provide corroborating evidence that investors are more distracted on Fridays.

Several papers, however, provide opposite evidence. For example, Penman (1987) claims that more bad news arrives to the market on Mondays and, to a lesser ex-

tent, on Fridays than on other days of the week. Doyle and Magilke (2009) find no evidence that managers opportunistically report worse news after the market closes or on Fridays. Truong (2010) suggests that after trading hours earnings announcements appear to reflect firm policy rather than managers' deliberate strategy to influence market reaction.

On the basis of interests maximization argument, this section summarizes the association between firm news and strategic timing of single financial information disclosure in literature. Two research realms, good news early and bad news late hypothesis and strategic timing of investor sentiment, have been addressed. According to the former one, under the unique Chinese booking system which allows managers to amend their disclosure dates of quarterly reports (discussed detailedly in the second chapter of instructional background), I further study the good news early and bad news late hypothesis by testing whether managers change their disclosure dates of quarterly reports according to their earnings news of quarterly reports in chapter 4.

Firm News and Release Sequence of Multiple Financial Information Sources

Compared to the research on the strategic timing of single financial information sources discussed in previous section, the study on strategic timing of multiple financial information sources is limited.

Gennotte and Trueman (1996) theoretically examine whether managers in possession of two pieces of information, one of which is the firm's earnings, would prefer to announce them simultaneously or separately. It has been demonstrated that man-

agers like to make earnings announcement separately from other disclosures if the earnings are likely to have a more favorable act on firm value. Conversely, Gennotte and Trueman (1996) suggest managers will tend to make earnings announcement simultaneously with other disclosures if the earnings have unfavorable implications for firm value. They attribute these propositions to the reaction of a firm's share price in response to an earnings announcement which is expected to be greater if that announcement is made separately from, rather than at the same time as, another announcements by the firm.

In light of the incentives of managers to avoid the stock price-related consequences of earnings disappointments, Lansford (2006) questions whether managers strategically time disclosure of a proprietary indicator around negative earnings announcement. The results suggest that, for a sample predominately composed of small-capital, high-technology firms, the probability of disclosing a patent strategically before an impending negative earnings surprise announcement increases in the magnitude of the negative earnings surprise. Lansford (2006) also finds that such strategic patent disclosure appears to successfully dampen the market response to the earnings announcement.

In China, the CSRC allows a overlapping legal disclosure period between the annual report of one year and the first quarterly report of following year (discussed detailedly in chapter 2). Under this unique regulation, Xie and Tang (2006) test whether the earnings per share affects the release between the 2003 annual report and the 2004 first quarterly report. They provide evidence that the release date differences between the two reports tends to be large if both reports reveal positive earnings per share, but smaller if any of these two reports reveals negative earnings per share.

However, several limitations existed in this study. Firstly, one overlapping period data is quite limited which only can be used to test cross-sectional variances but not time-series variances. Secondly, their findings of small release difference between bad annual report and subsequent good first quarterly report could be due to late release of bad annual news and early release of good first quarterly news. Thirdly, the earnings per share is too simple to measure firm news.

Under the unique overlapping legal disclosure period between annual report and subsequent first quarterly report, chapter 5 breaks the constraints in the paper Xie and Tang (2006). Utilizing multiple overlapping periods data (2006 to 2012), I test whether earnings surprise (common proxy of firm news in literature) affects simultaneous disclosure of annual report and subsequent first quarterly report (avoid possible reason from good news early and bad news late hypothesis).

2.2.2 Other Determinants on Strategic Timing of Financial Information Disclosure

The previous section discusses the role of firm news on strategic timing of quarterly report disclosure. In addition to firm news, literature also suggest that nature of market news could lead managers to strategically time their disclosures of financial information.

For example, Acharya et al. (2011) studies the role of market news on the strategic timing of financial information disclosure by setting up three models. They demonstrate that, if the market news is released before the firm has been informed the release of market news, market news will have no impact on the firm's disclosure

because the firm has no ability to release its firm news before the market news. If the firm can be either informed at the beginning or not informed at all and market news will be released afterwards, in the no informed case, the news disclosure of firms will be delayed due to it could obtain higher stock price if it keep its own information till market news is released. Once the market news comes out, if it is sufficient negative, it will trigger an immediate disclosure by the firm. In a more realistic framework, firms learn information at random times so that the probability the firm is informed increases over time. In addition to negative market news triggering an immediate disclosure, Acharya et al. (2011) suggest that the positive market news will slow the rate of disclosure at future dates as firms with good firm news are unwilling to release at the same time as good market news and firms with bad firm news dislike their news seems worse under the good market news.

A related paper by Tse and Tucker (2010) employs a duration model to study, empirically, whether managers herd in releasing earnings warnings. They find that firms tend to speed up their warnings (bad firm news) in response to the release of peer firms' warnings, and suggest this is due to the managers seeking to lump their bad news with that of other managers in their industry to minimize the appearance of personal responsibility. Conversely, this herding behaviour is not evident in the disclosure of good peers' news. Furthermore, Floyd (2012) tests the association between industry peer restatements and voluntary disclosure and documents an increased likelihood for firms to announce bad news in the 10 trading days following a peer's restatement announcement, but report no change in the likelihood of releasing good.

In chapter 4, based upon these arguments, in order to explain why managers prefer

to use modification of first booking dates as timing strategy, I further test whether managers tend to withhold their firm news and gamble that subsequent relative market condition could hide their bad news or distinguish their good news.

Apart from the earnings news related determinants, Dyer and McHugh (1975) find firm size negatively affects the reporting lag. In their Australian study, they use three reporting lags to measure the strategic timing of financial information disclosure. First, the preliminary lag is the interval of the number of days from the year-end to the receipt of the preliminary final statement by the Sydney Stock Exchanges. The second measure of auditors' signiture lag used by the interval of the number of days from the year-end to the date recorded as the opinion signature date in the auditors' report. And third, the total lag is the interval of the number of days from the year-end to the receipt of the published annual report by the Sydney Stock Exchanges. Dyer and McHugh (1975) interpret the negative association between firm size and report lag as managers unwilling to let investors suspect their news is bad since late disclosure may be perceived as conveying bad news and the impact may be greater for larger firms due to increased following public acknowledgement. These findings have been further supported by Davies and Whittred (1980) and Courtis (1976). In this thesis, I also control firm size and the results support their findings.

2.2.3 Motivations for Strategic Timing of Financial Information Disclosure

As discussed above, there are various timing strategies of financial information disclosure. This section reviews the literature of strategically timing motivations and

suggests that maximization of firm value is main incentive.

Disclosure Related Stock Price

If wording occurs due to value relevance in the disclosures, managers may have incentives to time the disclosure of financial information strategically. Gennotte and Trueman (1996) provide theoretical evidence on it with their focus on intra-day timing of earnings announcements. Gennotte and Trueman (1996) suggest that, since stock prices reflect better the valuation implications of an earnings announcement when it is made during trading hours rather than after the market has closed, managers tend to release earnings with positive implications for firm value during trading hours but disclose earnings with negative implications for firm value after trading hours. Gennotte and Trueman (1996) also study the release sequence of multiple corporate disclosures. As stock prices better reflect the valuation implications of multiple announcements when they are made at different times, they argue, managers will prefer to make the disclosures separately if the announcements have positive implications for firm value, but simultaneously if the announcements have negative implications for firm value.

As mentioned in previous section, Kross (1981) suggests the reason for managers preferring good news early and bad news late could be that the stock price reaction to early earnings announcement is significantly more pronounced than the reaction to late earnings announcement. If managers release good firm news early, the favorable stock price reaction to good firm news becomes more strong, conversely, if managers release bad firm news late, the unfavorable stock price reaction to bad firm news

reduces. Kothari et al. (2009) further attribute the good news early and bad news late to the magnitude of the negative stock price reaction to bad news disclosures being greater than the magnitude of positive stock price reaction to good news disclosures.

This section concludes that disclosure related stock price motivates managers to time their disclosure of financial information. With a view to this argument, This thesis focuses on unique Chinese disclosure settings to study how managers strategic time their disclosures of quarterly reports.

Managers' Compensation and Career Concern

Healy and Palepu (2001) state that managers can be rewarded directly by a variety of stock-based compensations, such as stock option grants and stock appreciation rights. Thus, these types of compensation schemes further motivate managers to engage in the strategic timing of financial information disclosure due to the potential impact on stock prices and consequently, their remuneration.

Aboody and Kasznik (2000) examine whether CEOs manage the timing of their voluntary disclosures around stock option awards and find that CEOs opportunistically delay good firm news and rushing forward bad firm news around the stock option award dates. Because stock options are typically granted with a fixed exercise price equal to the stock price on the award date, such a disclosure strategy ensures that decreases in the firm's stock price related to the arrival of bad news occur before, rather than after, the award date, while stock price increases related to the arrival of good news occur after, rather than before, the award.

Other paper also supports the proposition that the compensation can urge managers to time their financial information disclosure strategically. For example, Noe (1999) demonstrates that the frequency of management forecasts is positively associated to trading by insiders in the firm's stock; Nagar et al. (2003) find that management earnings forecast incidence and analysts' subjective ratings of disclosure practice, are positively associated to the proportion of CEO compensation affected by the stock price and the value of CEO stockholding; Miller and Piotroski (2000) provide evidence that, in a turnaround situation, if managers have higher stock option compensation at risk, they have more propensity to release earnings forecasts; and Leone et al. (2006) document that CEO cash compensation is twice as sensitive to negative stock returns as it is to positive stock returns. Hence, the financial information disclosure related compensation also motives managers to time their disclosure strategically.

Prior literature also present that the discretion on career can lead managers to behave strategic timing of financial information disclosure as well. For example, Healy and Palepu (2001) find that, given the risk of job loss accompanying poor stock and earnings performance, managers use corporate disclosures to reduce the likelihood of undervaluation and to explain away poor earnings performance. A model developed by Hermalin and Weisbach (2007) links the managers' career concerns to the information disclosures and suggest "owners seek to assess the CEO's ability based on the information available to them, and to replace him if the assessment is too low."(page 2)

Litigation Cost

Threat of shareholder litigation also appears to affect managers' decisions on information disclosure. On one hand, the threat of shareholder litigation can motivate managers to reveal their information quickly. For example, Skinner (1994) and Skinner (1997) find that, in order to avoid litigation cost, firms with bad earnings news are more than twice as likely to release the poor earnings performance early than firms with good news. Graham et al. (2005) survey 401 financial executives, and conduct interviews with an additional 20 financial executives. They provide evidence that 76.8% of the respondents reveal bad news faster to reduce the likelihood of a lawsuit resulting from failure to release timely information. The reasons could be (1) delaying bad news until a required earnings announcement is prima facie evidence that management did not voluntarily disclose information to investors in a timely manner; (2) pre-disclosure of bad news is beneficial because it spreads the stock price decline over multiple dates, and thus, reduce the likelihood of being detected in screens used to identify claims.

On the other hand, litigation can potentially reduce the incentives of managers to release financial information, in particular, the forward-looking information. Francis and Soffer (1997) find that 62% of firms in their litigation sample were sued over earnings forecasts or pre-emptive earnings disclosures. Conversely, 87% of their sample of no-litigation firms with comparable stock price declines around pre-disclose declined earnings. They concluded that pre-disclosure does not appear to be a deterrent to litigation.

Proprietary Cost

Verrecchia (1983); Darrough and Stoughton (1990); Wagenhofer (1990); and amongst others point out that firms' decisions of information disclosure is influenced by the concern whether such disclosure can damage their competitive position in product markets.

Hayes and Lundholm (1996), using a theoretical model, illustrate that propriety costs drive firms to provide disaggregated information only when they have similarly performing business segments. In addition, Graham et al. (2005) conduct a survey and show that nearly three fifths of managers consider the release of firms' secrets as an important barrier to more voluntary disclosure. However, the propriety cost appears to be sensitive to the nature of the competition, particularly, whether firms confront with existing competitors or merely the threat of entry, and whether firms compete primarily on the basis of price or long run capacity decisions.

In conclusion, this section reviews the motivation of strategic timing of financial information disclosure. It centers on the maximization of firm value and presents that disclosure related stock price, managers' compensation and career concern, litigation cost and proprietary cost could motivate managers to strategically timing their disclosures of financial information. Focusing on firm value maximization argument, this thesis test the relationship between firm news and strategic timing of financial information disclosure from different aspects.

2.3 Psychology Theories in Financial Information Disclosure

This thesis employs psychology theories to explain how and why managers strategically time the disclosure of quarterly reports. The psychology theories I employed includes mental accounting, investor sentiment, negativity bias and investor attention which have been reviewed as the followings.

2.3.1 Investor Sentiment

Investor sentiment is a central feature in behavioural finance. According to Baker and Wurgler (2007), investor sentiment is "...a belief about future cash flows and investment risks that is not justified by the facts at hand" (page 129).

Under the assumption of investors are considered unemotional in traditional finance model, evidence to the contrary is illustrated in the stock price changes during financial crisis periods, such as, the Great Clash of 1929, Black Monday in 1987, the Internet bubble from 1995 to 2000, and the financial crisis of 2007-2008. De Long et al. (1990) classify investors into rational investors and irrational investors. They consider the former investors to be sentiment-free whereas the latter investors are subject to investment sentiment. These two types of investors exhibit different trading behaviours and thus jointly set the stock prices and returns.

Mian and Sankaraguruswamy (2012) state the key finding of investor sentiment is that when sentiment is high, investors are optimistic and tend to overvalue stocks,

whereas when sentiment is low, they are pessimistic and likely to undervalue stocks. However, the stock prices will be reversed in the long run. Livnat and Petrovits (2009) bring investor sentiment into the field of quarterly report disclosures. They examine the association between investor sentiment and post earnings announcement drift and show a greater upward stock price drift in response to extreme positive earnings surprises in low sentiment periods than during high sentiment periods and conversely, a greater downward stock price drift is found in response to extreme negative earnings surprises in high sentiment periods rather than in low sentiment periods. Mian and Sankaraguruswamy (2012) further test whether investor sentiment affects the stock price sensitivity to firm news and find that the stock price sensitivity to good news is higher when sentiment is high than when it is low, conversely, the stock price sensitivity to bad news is higher when sentiment is low than when it is high. On the basis of these arguments of Mian and Sankaraguruswamy (2012), the sixth chapter of this thesis tests whether managers advance their disclosures of quarterly reports when sentiment is high whereas delay them when sentiment is low.

Other papers examine the effects of investor sentiment on corporate disclosure. For example, Bergman and Roychowdhury (2008) find that during low sentiment periods, managers issue more long-horizon earnings forecasts in an effect to boost investor optimism, whereas during periods of high sentiment, managers reduce their long horizon forecasting activities in hope of maintaining optimism on investors' earnings valuations. Further, they show that analysts' estimate bias in future earnings forecasts are positively related to sentiment, but importantly, that firms' disclosure policies are not only aimed at correcting analyst bias, but also managers respond to

investor sentiment after controlling for analysts' pessimism. This suggests that managers attempt to communicate with investors in general and not just via analysts. Brown et al. (2012) extend these studies by testing the influence of investor sentiment on managers' earnings announcement disclosure decisions and suggest that managers' propensity to release an adjusted earnings metric, especially one which exceeds the GAAP earnings number, increase with the level of investor sentiment. They also report that managers appear to exclude higher levels of both recurring and nonrecurring expenses in calculating the pro forma earnings number and emphasize the pro forma figure by replacing it more prominently within the earnings press release, as investor sentiment improves.

In China, the stock markets adopt short sell constraint and the retail investors occupy the largest proportion. According to the statements of Baker and Wurgler (2007), short sell constraint and high proportion of retail investor cause investor sentiment more pronounced, the Chinese stock market should to be a nature experiment for investor sentiment study. Therefore, in chapter six, I utilize Chinese data to investigate the relationship between investor sentiment and the strategic timing of earnings announcement.

2.3.2 Mental Accounting

The mental accounting theory proposed by Thaler (1999) suggests that, due to the shapes of gain and loss utility functions, people have a propensity to segregate gains, integrate losses, integrate smaller losses with larger gains and segregate small gains from larger losses.

In Figure 2.2, $V(X+Y)$ indicates integration and $V(X)+V(Y)$ means segregation. In each graph, the first quadrant shows the gain function while the third quadrant represents the loss function. Since the gain function is concave while loss function is convex, individuals have tendency to integrate two losses but segregate two gains. The manifestation presented in Figure 2.2 is that $V(X+Y)$, utility of X and Y integration, is higher (lower) than $V(X)+V(Y)$, utility of X and Y segregation, in graph A, integrate losses, (graph C, utility of X and Y segregation). Moreover, because gain function is steepest at the origin and the utility of a small gain can exceed the utility of slightly reducing a large loss, individuals have a propensity to integrate smaller losses with larger gains to offset loss aversion and segregate smaller gains from larger losses. It has been shown in Figure 2.2 as $V(X+Y)$, utility of X and Y integration, is lower (higher) than $V(X)+V(Y)$, utility of X and Y segregation, in graph B, integrate smaller losses with larger gains (graph D, segregate smaller gains from larger losses).

The relevance of this theory has been demonstrated by Thaler and Johnson (1990) through conducting an experiment at Cornell University. The idea of the experiment is to present subjects with pairs of outcomes either segregated or integrated and to ask them which frame was preferable. The results show that a large majority of the subjects chose in a manner predicted by this theory.

Related to financial information disclosure, the first principle, integrate losses, has potentially provided an explanation for the well-known big bath theory in accounting. Kirschenheiter and Melumad (2002) claim the "big bath" as a behaviour that managers manipulate their income statements to make this poor performance worse, so subsequent period's earnings seems better, if their firms experience low earnings

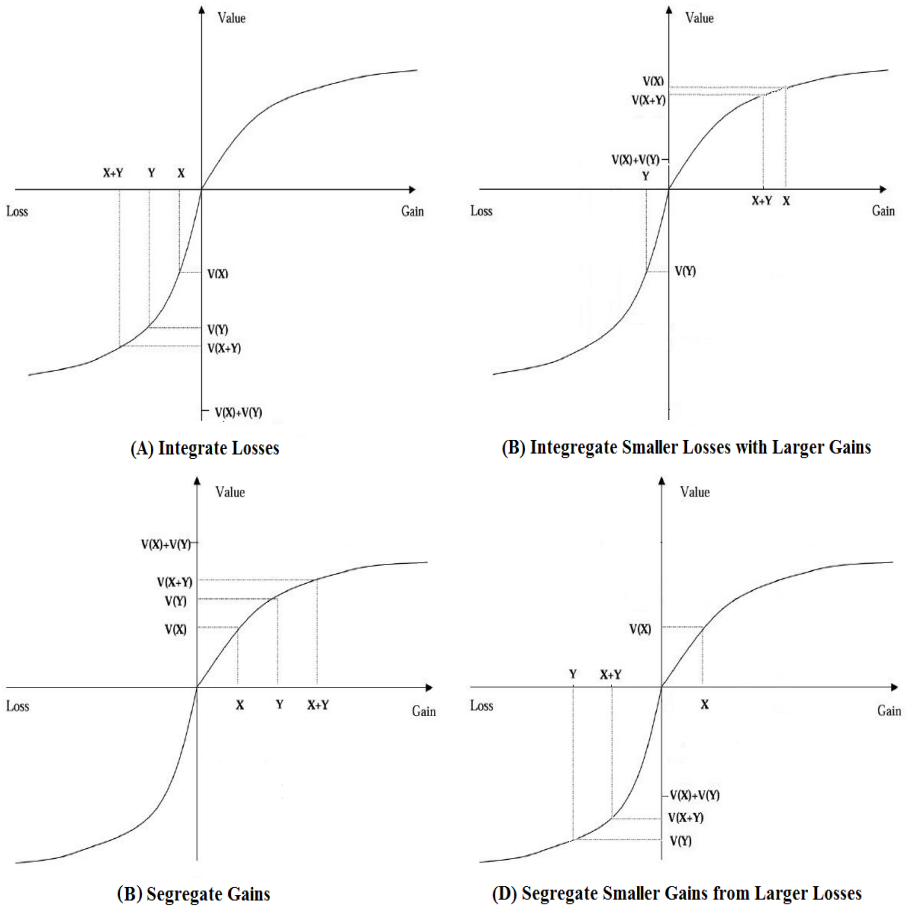


Figure 2.2: Segregation or Integration of Gains and Losses

in a given period. The integrate losses principle has been documented by Lim (2006), for example, who finds that the investors have more propensity to sell multiple stocks when they realize losses than gains. Consistent with the segregate gains principle, Shefrin and Statman (1985) demonstrate that brokers make covered calls more attractive to their clients by segregating the cash flow of a covered call into three mental accounts (call premium, dividend, and capital gain on the stock). According to the principle of integrate smaller losses with larger gains, Loughran and Ritter (2002) provide a possible explanation for why issuers are willing to put a

large amount of money on the table during initial public offerings (IPO). The reason is that the loss from underpricing will be aggregated with a larger gain from the retained shares. Issuers will then not be so upset by the large initial underpricing.

However, in literature, the mental accounting has not been introduced in the field of earnings announcement. The fifth chapter of this thesis initially links it to the decisions of corporate disclosure and suggests managers intend to integrate two bad earnings news but segregate two good earnings news.

2.3.3 Negativity Bias

The existence of the negativity bias is addressed by Baumeister et al. (2001). The bias suggests that, even when of equal intensity, negative experience, or fear of bad events has a far greater impact on individuals than do neutral experiences or even positive experiences. Khoshnood and Khoshnood (2011), Li et al. (2012) amongst others, suggest that the losses are twice as powerful, mentally, as gains.

Negativity bias is a phenomenon related to loss aversion. Both of them give grounds for supposing that loss-framed appeals will be generally more persuasive than gain-framed appeals. However, loss aversion emphasizes on behaviours of individuals' general preference for avoiding losses as opposed to obtaining gains because of negativity bias.

Using internet search volume from Google as a proxy of attention, Hacamo and Reyes (2014) test whether negative stock market performance attracts more attention from retail investors than comparable positive performances. Their findings

indeed show that investors display a negativity bias in attention allocation with respect to extreme stock returns. They find cross all specifications, a change in lagged negative extreme returns leads to a stronger increase in attention than a change in lagged positive extreme returns.

Akhtar et al. (2011) investigate the equity market reaction to the monthly release of Australian consumer sentiment news and document that the existence of negativity bias. If the announcement conveys bad sentiment news, they report that the equity market experiences a significant negative announcement day effect. Conversely, if the announcement conveys good sentiment news, the equity market experiences no announcement day effect.

In this thesis, in light of negativity bias, I assume that firms with bad earnings news react more strongly to investor sentiment than firms with good earnings news and the findings in chapter six indeed support this assumption.

2.3.4 Investor Attention

As discussed in section 2.2.1, a various paper demonstrate that managers tend to release bad news during periods of low attention but publish good news during the periods of high attention. Thus, the good news can be more attractive and the bad news can be hidden.

The decisions of financial information disclosure is also relate to the limited attention. Broadbent (1965); Dukas (1998); Krause and Godin (1996) and amongst others suggest that the attention of human beings is limited as our brain can only

process information at some finite rate. If an individual focuses on understanding a firm's financial report, he/she may be unable to study another firm's financial report carefully at the same time.

Addressing the issue of why practitioners care about the choice between recognition versus disclosure, and between informationally equivalent forms of disclosure, Hirshleifer and Teoh (2003) theoretically study the effects of limited attention on disclosure, financial reporting policy and market trading. They find that, because of limited attention, managers' disclosure decisions can influence the perception of investors and market price. Furthermore, they suggest that, sometimes, investors ignore the relevant aspects of the economic environments they faced, such as strategic incentives of firms to manipulate investor perceptions.

Dyer and McHugh (1975) find large firms release their financial information earlier than small firms. Dyer and McHugh (1975) interpret it as managers unwilling to let investors suspect their news is bad since late disclosures may be considered as conveying bad news and large firms could attract investors more attention than small firms. In this thesis, results in chapter four and chapter five also support these findings.

The psychology theories reviewed in this section are related to corporate disclosures. Focusing on the Chinese settings, this thesis link them to explain how and why managers strategically time their earnings announcements.

Chapter 3

Institutional Background

3.1 Chinese Stock Market

In China, the peculiar characteristics of stock market and unique regulations of financial information disclosure provide opportunities to study the strategic timing of quarterly report disclosure from different aspects.

The Chinese stock markets had been closed for approximately half a century and were re-opened when the Shanghai Stock Exchanges was established on the 19th December, 1990 and the Shenzhen Stock Exchanges was officially opened on the 3rd July, 1991. By 2009, Chinese stock market capitalization had risen over US $ 4.90 Trillion, overtaking Japan as the second largest stock market in the world. At the end of 2014, China had 2635 listed firms, and the number of stock investors was 165 million compared to 4 million in 1991. This rapid growth is mainly due to the improved allocation of financial resources in the economy, accelerated growth in key

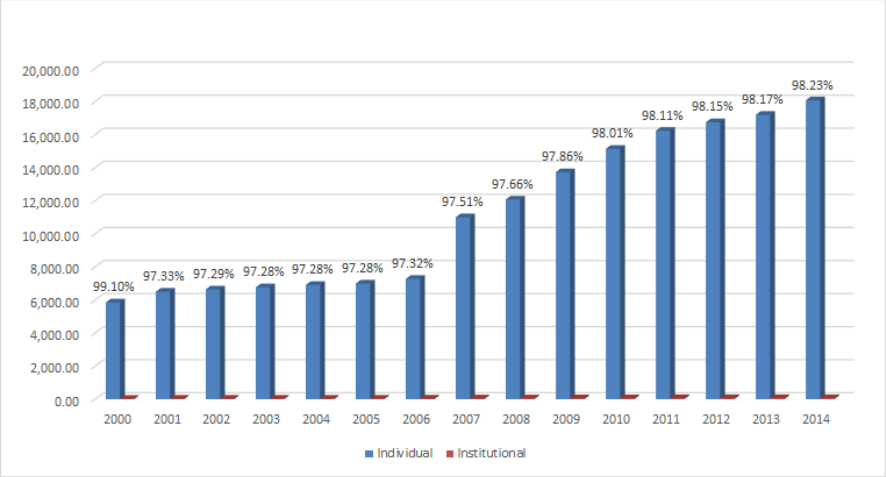
industries, and increased enterprise efficiency.

Both Shanghai and Shenzhen exchanges issue A shares and B shares. A shares only can be traded by domestic investors in the currency of Renminbi, except for those foreigners who are qualified as QFII (Qualified Foreign Institutional Investor). In contrast, B share were initially available exclusively for foreign investors and are traded in foreign currencies. Since 2001, Chinese citizens are allowed to invest in B shares, but they can only trade after opening foreign currency accounts. To some degree, this limits the domestic investor's ability to participate in B share investment. The number of listed shares and trading volume are much smaller in the B share markets than that in A share markets. Between 1991 and 2001, on average, A shares turned over at an annual rate of approximately 500%, which is higher than B shares of nearly 100%, and more than five times the turnover rate of a typical NYSE stock Mei et al. (2009).

From 17th November, 2014, The Stock Exchange of Hong Kong Limited (SEHK), Shanghai Stock Exchange (SSE), China Securities Depository and Clearing Corporation Limited (ChinaClear) and Hong Kong Securities Clearing Company Limited (HKSCC) launched a pilot programme, Shanghai-Hong Kong Stock Connect, for establishing mutual stock market access between Hong Kong and mainland China. Before this programme, individual investors, in Hong Kong or from overseas, can only invest indirectly in the Mainland's securities markets through certain investment products such as the Qualified Foreign Institutional Investor (QFII) funds, Renminbi Qualified Foreign Institutional Investor (RQFII) funds and RQFII A-share Exchange Traded Funds (ETFs). However, after its launch, not only these investment products are made available to Hong Kong and overseas individual investors, they can

now also trade eligible Shanghai-listed A-shares directly. Under this programme, Mainland investors (including individual investors) are able to trade eligible Hong Kong-listed stocks directly as well. BBC news (10 November 2014) considered this tie up as a key milestone in the capital market liberalisation of China. It helps to strengthen the connection between Hong Kong and the Mainland capital markets, enhance the comprehensive strength of Chinese capital market and promote the internationalisation of the Renminbi.

Figure 3.1: Retail Investor Proportion in A Share



In Chinese stock market, the retail investors are the largest investor group. For example, as shown in Figure 3.1, in past 10 years, over 97% of active trading accounts belonged to retail investors in A share. According to *Brief Review of the Development of China's Capital Market*, the retail investor holds the largest proportion of market capitalization as well.

Baker and Wurgler (2007) suggest that retail investors are irrational and are influenced by investor sentiment. If their findings are applicable in the Chinese institutional context, the impact of sentiment is likely to have a greater influence to other

stock markets due to the high proportion of retail investors.

In China, there is a short sale constraint which limits the arbitrage, and as a result, leads the effects of sentiment to be more pronounced as well. Shleifer and Vishny (1997) suggest that it is costly and risky for rational arbitrageurs to act against sentimental investors. Therefore, rational investors are subject to the limits of arbitrage from short time periods, costs/risks of trading and short selling, and thus they may not intensively force the mispriced prices of assets to the fundamentals. The asset prices can be pushed to very high levels during the periods of extraordinary sentiment from irrational investors, and rational investors may be forced to leave the market due to arbitrage limit. Consequently, prices may keep rising until just before the crash which will eventually occur.

In the early 1990s, because of the lack of rigorous regulation, Chinese stock market is dominated by speculative trading. In order to keep the stability of the market and protect the retail investor, CSRC introduced a "T + 1 trading rule", which requires investors to sell only stocks they purchased at least one day prior, and forbids them from selling stocks bought the same day. This regime was launched in the A share market of both the Shanghai Exchanges and Shenzhen Exchanges on the 1st January 1995. In 2001, China's B share stock market also adopted the "T + 1 trading rule".

After longstanding arguments in favor of the "T+1 trading rule", *Renmin Daily* [1] claimed that the "T + 1 trading rule" would effectively guard against excessive speculative trading and thus would be in line with the interests of retail investors. An academic study by Guo et al. (2012) also study the effects of the "T + 1 trading rule".

[1] Renmin Daily is an official newspaper of China.

They developed a dynamic price manipulation model and conducted an empirical test using data on China's B-share stock market to test their model's theoretical predictions. Both their theoretical and empirical results show that, compared with the "T+0 trading rule", the "T + 1 trading rule" reduces the total trading volume and price volatility, and improves the trend chasers' welfare when trend-chasing is strong.

Because of the high proportion of retail investors and the "T+1 trading rule", the effects of sentiment should be relatively high in Chinese stock market compared to many other countries. Therefore, in this thesis, utilizing Chinese data, I investigate how investor sentiment affects the timing disclosure decision of managers.

3.2 Corporate Disclosure in China

Corporate disclosure is critical for the functioning of an efficient capital market, which is potentially the most important means for management to communicate firm performance and governance to outside investors. Firms provide disclosure through regulated financial reports, including the financial statements, footnotes, management discussion and analysis, and other regulatory filings. Some firms also engage in voluntary communication, such as management forecasts, analysts' presentations and conference calls, press releases, internet sites, and other corporate reports. In addition, there are disclosures about firms by information intermediaries, such as financial analysts, industry experts, and the financial press. As this study focuses on corporate disclosure, this section will review how it is implemented in China.

3.2.1 Structure of Corporate Disclosure in China

Figure 3.2: Regulated Financial Information Disclosure in China

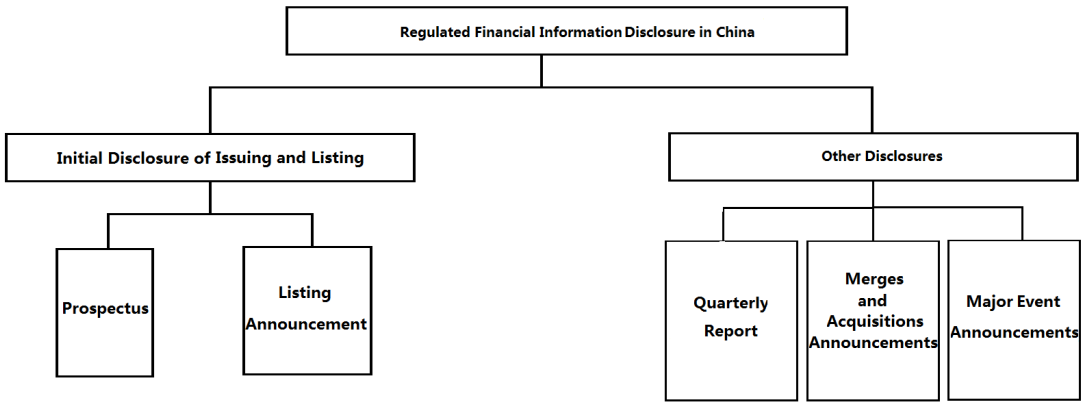


Figure 3.2 shows the structure of regulated financial information disclosure in China. As in many countries, in China, the quarterly report belongs to the regulated financial reports. After a firm has been listed on the stock market, it is required to publish its quarterly reports regularly. In each year, there are four quarterly reports, with the second quarterly report being the semi-annual report and the fourth quarterly report being the annual report. The government also requires listed firms to release its merge and acquisition news and news of other major events which could impact on its stock prices. In addition, in China, before a firm goes public, it is required to publish its both prospectus and listing announcements. Generally, in China, the financial reports are required to be made in simplified Chinese, although they can be in English for B-share companies. Firms can choose to make them in both Chinese and English, but in the event of differences, the Chinese version would

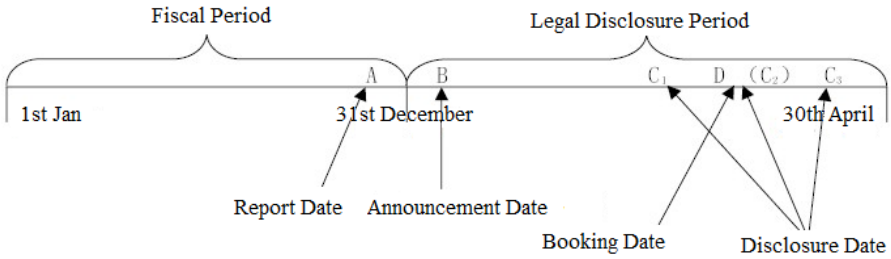
prevail.

3.2.2 The Regulation Development of Corporate Disclosure in China

There was almost no regulations in China which required listed firms to release their financial reports prior to 1993, but on April 22, 1993, the State Council promulgated the first formal financial information disclosure regulations namely *"The Provisional Regulations Governing the Issue and Trading of Shares"* , and also known as the *"Securities Provisional Regulations"*, which requires all listed firms to submit their annual and semi-annual reports to the CSRC within 120 days of the end of the fiscal year. In addition, the regulations require the annual report to be audited. After this regulation, further amendments followed on. In June of 1993, the CSRC added a second important regulation *"The Implementation Measures on Disclosure of Information Pursuant to the Securities Provisional Regulations"*, which requires listed firms to publish their annual reports in at least one approved newspaper within 20 working days before their annual shareholder meetings. In 1995, the CSRC introduced regulations which requires all listed firms to publish their annual reports in at least one CSRC-appointed newspaper within 120 days of the end of the previous fiscal year. Furthermore, China adopted a new accounting standard in 1994, which is very similar to international standards.

From 1997, the CSRC introduced a quarterly report booking system, requiring all listed firms to book disclosure dates with CSRC near to the end of each fiscal quarter. Figure 3.3 shows the procedure of annual report disclosure. The “report

Figure 3.3: The Procedure of Annual Report Disclosure



Report date is the dates that listed firms report their first booking dates to their corresponding stock markets. Announcement Date means the dates that stock exchange markets publish their listed firms' first booking disclosure dates. Booking date is the dates which firms want to release their reports and have been reported to stock exchange markets at the report date. Disclosure date is the actual disclosure dates of the listed firms.

date" in Figure 3.3 is the date that listed firms must report their first booking dates to their stock exchanges before the end date of fiscal quarter. Since 2001, both Shanghai and Shenzhen stock exchange markets must publish their listed firms' booking disclosure dates "announcement date" before the firms' actual disclosure dates as shown in Figure 3.3. The announcement dates are commonly around the beginning of each quarter's legal disclosure period. During each legal disclosure period, the Shanghai stock exchange market allows no more than 40 firms release their reports per day, while Shenzhen stock exchange market permits no more than 25 firms. The "disclosure date" in Figure 3.3 is the actual disclosure dates by firms, but as shown, there are several disclosure dates (C1 C2 and C3), because both stock exchanges allow firms to subsequently change their first booking dates with their corresponding stock exchanges. In principle, firms can only change their first booking date once, but some firms actually change their booking dates more than once. Therefore, the actual disclosure date could be C1 C2 or C3 and the booking dates may well differ from the actual disclosure dates.

The regulations of this booking system provides managers a unique opportunity to change the disclosure date of their quarterly report. Therefore, in this thesis, I

investigate whether managers tend to time their disclosure dates subsequently by amending their first booking dates.

The procedures for other quarters are very similar. The difference between them is the length of the legal disclosure period. In China, if a firm wants to release its quarterly report, it must publish its quarterly report in the corresponding legal disclosure period following each quarter. The legal disclosure period for the first quarter is from 1st April to 30th April; the second quarter is between 1st July and 31th August, the third quarter extends from 1st October though 31st October and the fourth quarter spans a period of time from 1st January to 30th April.

As can been seen, there is an overlapping legal disclosure period (from 1st April to 30th April) between annual report of one year and the first quarterly report of subsequent year. This provides managers with an opportunity to release these two reports simultaneously or well as separately. Since the prior literature pays limited attention to the release sequence of multiple financial information sources, in this thesis, I empirically test whether the nature of firm news influences the decisions of managers on the release sequence of their two financial information sources.

In conclusion, on the basis of unique stock market features and financial information disclosure regulations in China, this thesis studies the managers' strategic timing behaviour of quarterly report disclosure from a different perspectives. Firstly, under Chinese booking system of quarterly report, I investigate whether managers amend the first booking dates of their quarterly reports to achieve the good news early and bad news late. Secondly, based on the overlapping legal disclosure period between annual report and subsequent first quarterly report, I examine whether managers

release two reports simultaneously or separately according to the nature of firm news in two reports. Finally, because of Chinese stock market being a natural experiment for investor sentiment study, I test whether the investor sentiment affects managers' decisions on quarterly report disclosure.

Chapter 4

Good News Early and Bad News Late

4.1 Introduction

Since 1997, the CRSC conducted a booking system of quarterly report disclosure. It requires listed firms in China to book disclosure dates of quarterly reports with the CRSC before legal disclosure periods. After the bookings have been made, however, the listed firms are allowed to change the booked dates. Under this unique booking system, this chapter reviews the good news early and bad news late hypothesis proposed by Kross (1981), Givoly and Palmon (1982) amongst others. I perform a variety of tests and present evidences consistent with managers, advancing their first booking dates of quarterly reports if quarterly reports reveal good firm news, whereas, delaying them if quarterly reports reveal bad firm news. Firm news, in

turns, is measured as earnings surprise. I define it as good, if earnings surprise is positive, and 0, otherwise.

This study differs from the prior literature as the timeliness of financial information disclosure is measured as the modification of the first booking dates of quarterly reports. The disclosure dates of quarterly report are considered as late if actual disclosure dates are later than first booking dates, but early, if actual disclosure dates are earlier than first booking dates. Thus, a revealing question arises from this study. Why might managers amend their original booking dates to advance or delay their disclosure dates of quarterly reports?

In light of the theoretical predictions of Acharya et al. (2011), when managers book their first booking dates of quarterly reports, they are unlikely to know the relative market condition of this period and might choose to withhold their own firm news, wait and gamble that subsequent reveal of market condition to turn in their favor. For an individual firm, its relative market condition is bad, if its earnings surprise is greater than the average aggregate earnings surprises of the whole market, but good, if its earnings surprise is smaller than the average aggregate earnings surprises. After other firms have released their firm news, managers can then infer the relative market condition according to those who have released their own firm news and make decision whether advance or delay the releases of their own firm news. Consistent with the findings of Acharya et al. (2011), my results suggest that managers have a propensity to advance their first booking dates of quarterly reports when relative market conditions are bad, whereas they are likely to postpone them when relative market conditions are good. When relative market conditions are good, firms with good news may be concerned that their good firm news will be overshadowed by the

relative good market conditions and firms with bad firm news may appear worse, hence, firms may choose to delay. Conversely, when relative market conditions are bad, advancing the releases of both good and bad firm news will make firms' own news seem better.

This study is organized as follows. Section 2 reviews the relevant literature, Section 3 shows the instructional background; Section 4 describes the research design and hypotheses; Section 5 presents data, Section 6 shows the methodology; Section 7 reports the primary results; Section 8 presents the additional analysis; Section 9 discusses robustness check; and Section 10 concludes.

4.2 Literature Review

A number of studies in the accounting literature test whether there is a association between the nature of firm news and timeliness of earnings announcements and most evidence supports the good news early and bad news late hypothesis.

For example, Kross (1981) suggests that releases of good firm news are relatively earlier than bad firm news. In the paper of Kross (1981), the timeliness of earnings announcement has been measured as the difference between the actual earnings announcement date and an expected earnings announcement date. Earnings announcement dates is defined as early if it falls before expected earnings announcement date, whereas the earnings announcement date is defined as late if falling after expected earnings announcement date. The firm's expected earnings announcement date is estimated using (1) time series random walk model, (2) cross-sectional ran-

dom walk model, (3) pure mean reversion model, (4) random walk with drift model, and (5) moving average mean reversion model respectively.

The paper of Givoly and Palmon (1982) supports the predictions of Kross (1981). Moreover, Givoly and Palmon (1982) suggest the phenomena of good news early and bad news late could be due to that the stock price reactions to early earnings announcement are shaper than the reactions to late earnings announcements. If good firm news is released early, the favorable stock price reaction to good firm news may be stronger, conversely, if managers release bad firm news late, the unfavorable stock price reaction to bad firm news may be less pronounced.

The evidence presented in these two studies are based upon data from the 1970s. During these periods, for some managers, the benefit of delaying the formal release of earnings exceeded the cost. However, a change has arisen in the cost/benefit trade-off is based upon the premise that litigation risks faced by management and auditors intensified during the 1980s. This premise is supported by the fact that auditors', directors' and officers' insurance premiums increased substantially during the 1980s.

The evidence presented in these two studies are based upon data from the 1970s. However, a change has arisen in the cost/benefit trade-off is based upon the premise that litigation risks faced by management and auditors intensified during the 1980s. The change in the litigation environment, in turn, raises the possibility to reverse the good news early, bad news late phenomenon for two reasons. The first reason is based on assertion of Skinner (1994), the litigation concerns induce firms to preempt formal bad news earnings disclosures with voluntary disclosures. The second reason

is based on the observation that lawsuits follow a stock price run up and subsequent decline Francis et al. (1994). Coupled with an increase in litigation risks, this would likely induce auditors and managers to spend more time verifying any good news that precedes a stock price run up. Consequently, Begley and Fischer (1998) reassess the good news early, bad news late hypothesis using data from the 1980s and early 1990s and find consistent and robust evidence of the good news early, bad news late hypothesis.

The evidences from China also support the good news early and bad news late hypothesis. For example, Haw et al. (2000) suggest that, in the instructional context of China, firms with good news release their annual reports earlier than firms with bad news, and loss firms release their annual reports the latest. In their study, they define the timeliness of annual report disclosure as the reporting lag (the number of days from the fiscal year-end to the annual report release date) and the unexpected reporting lag (the difference of release dates in two successive years).

Different from the study of Haw et al. (2000), based on the regulations of the Chinese booking system, this chapter utilizes the difference between first booking dates and actual disclosure dates to measure the timeliness of quarterly report disclosure. Compared to previous measurements, it offers a more direct opportunity to assess managers' behaviour in advancing or delaying disclosure dates of quarterly reports.

Acharya et al. (2011) investigate the role of relative market condition on timeliness of financial information disclosure. They assume a firm can learn its information at a random time so that the probability it is informed increases over time. Before the release of relative market condition, most firm will withhold their firm news and

in hope that following releases of relative market condition turn in their favor. If relative market condition is bas, firms will accelerate their disclosures whereas, if it is good, firms will delay them. A potential reason is their bad relative market condition could make both good and bad firm news seem better, whereas good relative market condition could make them seem worse.

In this study, when managers initially book the first booking dates of their quarterly reports, they are unlikely to know the relative market conditions. According to the theoretical predictions of Acharya et al. (2011), managers might be probably to withhold their firm news and hope the subsequent reveal of relative market conditions to bring them extra benefits. Therefore, in this chapter, I further test whether the relative market conditions motivate managers to amend the first booking dates of their quarterly reports.

In addition, a related paper by Tse and Tucker (2010) employs a duration model to empirically study whether managers herd in releasing earnings warnings and they find that firms speed up their warnings in response to peer firms' warnings, which they explain it as due to managers seeking to lump their bad news in with that of other managers in their industry to minimize the appearance of personal responsibility. But they do find evidence of this herding behaviour is in the disclosure of good news. Furthermore, Floyd (2012) tests the relation between industry peer restatements and voluntary disclosure and Floyd (2012) documents an increased likelihood of firms to announce bad news in the 10 trading days following a restatement announcement by their peer, however, Floyd (2012) finds no change in the likelihood of releasing good news during those 10 days.

4.3 Institutional Background

As discussed in Chapter 2, the CSRC introduced a booking system of quarterly report disclosure in 1997 which requires all listed firms to book disclosure dates of quarterly reports with the CSRC near to the end of each fiscal quarter and allows listed firms to change the dates after the bookings have been made.

Table 4.1: The Fiscal Period and Legal Disclosure Period for Quarterly Report

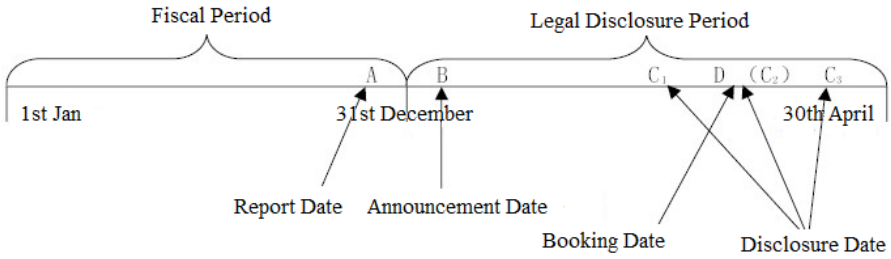
	Fiscal Period	Legal Disclosure Period
first quarterly report	1st January to 31th March	1st April to 30th April
second quarterly report	1st April to 30th June	1st July to 31th August
third quarterly report	1st July to 30th September	1st October to 31st October
fourth quarterly report (annual report)	1st January to 30th December	1st January to 30th April

In China, the fourth quarterly report is annual report.

As shown in Table 4.1, in China, there are four quarterly reports for each year and the fourth quarterly report is commonly considered as annual report. Figure 4.1 shows the disclosure procedure of annual reports and there are two periods: fiscal period and legal disclosure period. Table I presents, for annual reports, the fiscal period means the whole fiscal year and the legal disclosure period (1st January to 30th December) is closely followed by the fiscal year (1st January to 30th April) which is the period that CRSC allows listed firms to release their annual reports. However, both fiscal period and legal disclosure period for other quarterly reports are different from those of annual report. The fiscal period of other three quarterly reports means each quarter. The legal disclosure period for the first quarter is from 1st April to 30th April; the second quarter is between 1st July and 31th August,

and the third quarter extends from 1st October though 31st October.

Figure 4.1: The Procedure of Annual Report Disclosure



Report date is the dates that listed firms report their first booking dates to their corresponding stock markets. Announcement Date means the dates that stock exchange markets publish their listed firms' first booking disclosure dates. Booking date is the dates which firms want to release their reports and have been reported to stock exchange markets at the report date. Disclosure date is the actual disclosure dates of the listed firms.

In Figure 4.1, "Report Date" (A) is the date that listed firms must report their first booking dates to the CSRC which is around the end of the fiscal period. "Booking Date" (D) is this first booking dates reported by listed firms. However, since the CSRC allows listed firms to change their first booking dates after the bookings have been made, the first booking dates are not necessarily the actual disclosure dates ("Disclosure Date", C_1, C_2 or C_3). Thus, the actual disclosure dates of annual reports could be C_1, C_2 or C_3. That is, firms can keep the first booking dates no change (C_2) or accelerate the disclosure (C_1) and delay it (C_3). According to the requirement proposed by the CSRC in 2001, both the Shanghai and Shenzhen stock exchanges have to publish their listed firms' first booking disclosure dates ("Booking Date" (D)) before the firms' actual disclosure dates ("Disclosure Date" (C_1, C_2 or C_3)). This is shown as "Announcement Date" (B) in Figure 4.1, which is commonly around the beginning of the legal disclosure period. The disclosure procedures for other quarters are similar with the disclosure procedure of the annual reports. The only difference between them is the length of fiscal quarter and legal disclosure period.

According to these regulations, if managers believe changing the disclosure dates can impact on investors reactions, they have an incentive to manipulate their disclosure dates of quarterly reports by amending the original booking disclosure dates of their reports. Therefore, this unique system allows for an alternative scenario to test the good news early and bad news late hypothesis.

4.4 Research Design and Hypotheses

As discussed above, The aim of this chapter is to first test whether managers amend their first booking dates of quarterly reports dependent on the nature of firm news accelerating good firm news and delaying bad firm news. Therefore, I hypothesize that in their alternative form

H_{1a}: Managers advance their first booking dates of quarterly reports if quarterly reports reveal good firm news.

H_{1b}: Managers delay their first booking dates of quarterly reports if quarterly reports reveal bad firm news.

If the results support the good news early and bad news late theory, in light of theoretical paper of Acharya et al. (2011), I conjecture that managers prefer the timing strategy of altering first booking dates is in part due to an incentive to gamble that subsequent relative market condition moves in a direction which impacts on how the market receives their own firm news.

When managers book their first booking dates of quarterly reports, they are un-

likely to know the nature of relative market condition. Based upon the theoretical predictions of Acharya et al. (2011), except for firms with extreme good firm news, most firms will withhold their own firm news until the relative market condition comes out.

After prior firms released their own firm news, managers can start to infer the nature of the relative market condition, and then, amend their first booking dates of quarterly reports. Acharya et al. (2011) argue that if market news appears to be good may encourage managers to delay their own firm news as good firm news is less likely to have such a positive effect and bad news may appear worse. Conversely, if market news appears to be negative, managers have an incentive to accelerate both good and bad firm news. Therefore, I further hypothesize that

H_{2a}: Managers advance their first booking dates of quarterly reports if relative market condition is bad.

H_{2b}: Managers delay their first booking dates of quarterly reports if relative market condition is good.

Table 4.2: Hypotheses

	strategic timing of quarterly reports
good firm news	advance
bad firm news	delay
good relative market condition	delay
bad relative market condition	advance

In order to reveal hypotheses better, all expectations of this chapter have been shown in Table 4.2.

4.5 Data

The data of this study extends from 2006 to 2012. It includes both A share and B share from Shanghai and Shenzhen stock exchanges [1]. The disclosure dates of quarterly reports are downloaded from the official websites of Shanghai and Shenzhen stock exchanges and other data is collected from Bloomberg and Thomson one banker.

In order to test the above hypotheses, a unique definition of timing strategy, namely, booking lag, is proposed which is defined as a dummy variable of $CBLAG_{i,q,t}$,

$$CBLAG_{i,q,t} = Actual\ \ Disclosure\ \ Date_{i,q,t} - First\ \ Booking\ \ Date_{i,q,t}$$

$$Equation\ (1)$$

where $Actual\ \ Disclosure\ \ Date_{i,q,t}$ is the actual disclosure date of quarterly report for firm i in quarter q of year t; $First\ \ Booking\ \ Date_{i,q,t}$ is first booking date of quarterly report for firm i in quarter q of year t; and $CBLAG_{i,q,t}$ is their difference. Table 4.3 shows that mean of $CBLAG_{i,q,t}$ is 0.156 suggesting managers tend to defer

[1] A shares only can be traded by domestic investors in the currency of Renminbi, except those foreigners who are Qualified Foreign Institutional Investor. In contrast, B share were initially available exclusively for foreign investors and traded in foreign currencies. Since 2001, Chinese citizens are allowed to invest B share, but they can only trade it after opening foreign currency accounts.

Table 4.3: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max	Obs
Dependent Variable					
CBLAG	0.156	6.513	-87	85	18273
BLAG	0.580	0.494	0	1	2381
Independent Variable					
CNEWS	0.014	0.162	-2.828	2.86	18273
NEWS	0.583	0.493	0	1	18273
MNEWS	0.498	0.500	0	1	18273
Control Variable					
SIZE	7.626	0.943	5.724	10.228	18273
ME/BE	4.304	3.123	0.099	97.485	18273
FEV	62.256	59.165	0	319.517	18273
MAR	0.247	0.432	0	1	18273
AGE	12.500	5.177	2	22	18273

CBLAG is the difference between actual disclosure date and first booking date. I define *BLAG*, booking lag, as a dummy variable. If the actual disclosure date is later than first booking date, it is 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0. *CNEWS* is a firm's earnings surprise. *NEWS*, firm news, is a 0, 1 dummy variable of a firm's *CNEWS*. *NEWS*=1, if a firm's earnings surprise is bigger than 0, and 0, otherwise. *MNEWS*, relative market condition, is 0, 1 dummy variable of the difference between firm's earnings surprise and the market's average earnings surprise. If a firms earnings surprise is greater than market's average earnings surprise, *MNEWS* is defined as 1 and 0, otherwise. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1).

the first booking dates of their quarterly reports on average.

The booking lag equals to 1, if $CBLAG_{i,q,t}$ is positive. Conversely, the booking lag equals to 0, if $CBLAG_{i,q,t}$ is negative. As can be seen from Table 4.3, the majority of firms keep their first booking dates of quarterly report unchange and only 13% (2381 observations) of firms amend them [2]. The mean value of the booking lag is 0.580. It suggests that 58% of firms defer while 42% of firms advance their first booking disclosure dates of quarterly reports if the first booking dates have been changed.

Table 4.4: Booking Lag Breakdown by Year and Quarter

	Year						Quarter			
BLAG	2007	2008	2009	2010	2011	2012	1	2	3	4
Advance	160	169	218	176	197	81	111	246	102	542
Delay	349	267	239	192	213	120	262	221	174	723
Difference	-189	-98	-21	-16	-16	-39	-151	25	-72	-181
Total	509	436	457	368	410	201	373	467	276	1,265

BLAG, booking lag, is defined as a dummy variable. If the actual disclosure date is later than first booking date, it is measured as 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0.

In table 4.4, the booking lag is shown broken down by year and quarter, separately. As can be seen from column 2 to column 7, the number of delays is greater than the number of advances. Approximately, the firms of changing their first booking dates are reducing year by year. In addition, the results, from column 8 to column 11, suggest that most firms change their first booking dates in quarter four and least firms amend their first booking dates in quarter three. Especially, in quarter two, the number of advancing their first booking dates are more than firms of delaying first booking dates.

[2] In this study, the total observations is 18273 and the number of observations which change their first booking dates of quarterly reports is 2381. Therefore, 13% (2381/18273) observations amend their first booking dates of quarterly reports.

An operational definition of firm news is also required to implement the tests of H_{1a} and H_{1b}. The firm news is measured as a dummy variable of earnings surprise calculated in equation (2)

$$CNEWS_{i,q,t} = Earnings\ \ Per\ \ Share_{i,q,t} - Earnings\ \ Per\ \ Share_{i,q,t-1}$$

Equation (2)

where $Earnings\ \ Per\ \ \ Share_{i,q,t}$ is the earnings per share for firm i in quarter q of year t; $Earnings\ \ Per\ \ Share_{i,q,t-1}$ is the earnings per share for firm i in same quarter q of last year $t-1$; and $CNEWS_{i,q,t}$ is their difference which indicates the earnings surprise for firm i in quarter q of year t. The mean of $CNEWS_{i,q,t}$ is 0.014 suggesting firms bear positive earnings surprise on average. NEW is a dummy variable of $CNEWS$. If $CNEWS_{i,q,t}$ is greater than 0, it is considered as good firm news, otherwise, bad firm news. Table 4.3 shows 58.3% of firms have good firm news and 41.7% of firms have bad firm news.

Table 4.5 reports the results of the analysis of booking lag using portfolios formed based on continuous firm news. Portfolio 1 contains the most negative continuous firm news and portfolio 10 contains the most positive continuous firm news. From whole see, the booking lag is declining from portfolio 1 to portfolio 10. In line with H_1a and H_1b, these initial results suggest that the firms with worse news have a higher probability of delaying the first booking dates of their quarterly reports and firms with better news have higher probability of advancing them. A t-test is performed to assess whether the extreme bad continuous firm news portfolio is associated with delaying of first booking dates of quarterly report relative to the

extreme continuous good news portfolio. The test result is shown in the last column of Table 4.5 and it is significant in the directions predicted by H_1a and H_1b.

In the additional analysis, the relative market condition has been introduced as a dependent variable in order to test H_2a and H_2b. It is measured as a dummy variable of the following equation.

$$Earnings\ \ Suprise\ \ Difference_{i,q,t} = Earnings\ \ Surprise_{i,q,t} - Average\ \ Earnings\ \ Surprise_{i^*,q,t} \qquad Equation\ (3)$$

where $Earnings\ Surprise_{i,q,t}$ is the earnings surprise for firm i in quarter q of year t, $Average\ Earnings\ \ Surprise_{i^*,q,t}$ is the market's average earnings surprises in quarter q of year t, and $Earnings\ Suprise\ \ Difference_{i,q,t}$ is the difference between them. If the firm i's earnings surprise is greater than market's average earnings surprise, the relative market condition is bad. If it is less, the relative market condition is good. Table 4.3 shows 49.8% firms bear bad relative market condition and 50.2% firms have good relative market condition.

In this study, I also include accounting control variables: firm size, market to book ratio, financial leverage, market category, years of being a listed firm, industry, year and quarter dummies. In addition, the correlations of all variables have been reported in Table 2 of Appendix.

Both Dyer and McHugh (1975) and Atiase et al. (1989) provide evidence that large firms release their financial information early, whereas small firms disclose them late. The reason, they argue, is that large firms are unwilling to let outsiders think they have bad news, since large firm may attract more attention and the late release

Table 4.5: Booking Lag Breakdown by Continuous Firm News

	Bad News							Good News			
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	t-test
Average *BLAG*	0.643	0.545	0.632	0.575	0.655	0.586	0.535	0.556	0.539	0.548	0.094**
	(0.480)	(0.499)	(0.484)	(0.496)	(0.477)	(0.494)	(0.500)	(0.498)	(0.499)	(0.498)	(0.039)

In this table, continuous firm news is the difference between earnings per share this quarter and earnings per share of same quarter in last year. In this table, I decile it. P1 is lowest firm news and P2 is the highest firm news. *BLAG*, booking lag, is defined as a dummy variable. If the actual disclosure date is later than first booking date, it is measured as 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0. T-test tests the null hypothesis that portfolio 10 announcements are not significantly earlier or later than portfolio 10 announcements.

usually conveys bad news (as already hypothesised). Following them, in this study, I include firm size as a control variable and define firm size (*SIZE*) as the log of total assets. The mean of firm size is 7.626 with a standard deviation of 0.943. In addition, the largest firm size is 10.228 and the smallest one is 5.724.

According to Loughran and Ritter (2000), a high market to book ratio might indicate overvalued. Intuitively, when firm news is announced, the stock price of undervalued firm are likely to increase back to fundamental value, whereas the stock price of overvalued firms are likely to decrease back to fundamental values. Therefore, managers of undervalued firms could release their firm news early as they are eager for their stock price to increase to fundamental values, conversely, managers of overvalued firms might withhold their firm news to delay their stock prices decrease. Table 4.3 shows that mean of market to book ratio in this sample is 4,304 which suggests that firms are overvalued on average.

Financial leverage is a measurement of how a firm's assets are financed. A relatively high financial leverage ratio means that firms have a high proportion of debt and other liabilities to finance their assets which suggests these firms may be (1) more risky and (2) more likely to experience financial distress than firms with lower leverage. Debtholders are more likely to impose covenants in their debt contracts when leverage is high and these may be based on covenants. A firm violating a convent is deemed to be in technical default and can be forced into bankruptcy. If a firm is in danger of violating one of these covenants, it will want to delay the publication of financial accounting data. The mean of financial leverage is 62.256 suggesting that, on average, firms are in the position of bearing high debts.

There are two stock markets in China: the Shanghai and Shenzhen stock exchanges. The Shenzhen exchange will only allow a maximum of 25 firms to disclose reports per day but the Shanghai exchange allows up to 40 to disclose. The ability of firms to delay or accelerate disclosure may be more limited due to these small numbers and particularly for the Shenzhen exchange. Hence, the exchange market is included as a dummy variable. It equals 1, when the firm is listed on the Shanghai exchange and otherwise, 0. As shown in Table 4.3, 24.7% firms are listed on the Shanghai stock exchange and 75.3% firms are listed on the Shenzhen stock exchange.

Following Mahajan and Chander (2008), who include the listed year of firms (AGE) as a control variable in their timeliness of corporate disclosure study, I also control for this by including the length of time a firm has been listed. Considering initial public offerings (hereafter, IPO) could affect firms' quarterly report disclosure, I exclude those firms which have been listed firms for only one year. In the sample, the firms' average listed age is 12.500 years with a standard deviation 5.206. The youngest firms are only 2 years old and the oldest firms have been listed for 22 years.

Finally, I include industry ($INDU\_DUM$), year and quarter dummies (YQ_DUM). Year and quarter dummies are dummy variables of corresponding year and quarter. If an observation belongs to quarter i of year t, YQ_DUM=1, and 0, otherwise. The industry category is based on the industry classification in Thomson One Banker, which includes 10 industries: finance, health, consumer service, industrial, consumer goods, technology, utilities, basic materials, oil and telecommunication. If a firm belongs to an industry, this industry dummy equals to 1, and 0, otherwise.

In Table 4.6, variables have been breakdown by advance, no change and delay of

Table 4.6: Variables Breakdown by Modification of First Booking Date of Quarterly Report

Variable	Advance	No Change	Delay
CNEWS	0.029	0.013	0.017
NEWS	0.612	0.582	0.579
MNEWS	0.517	0.501	0.476
SIZE	7.806	7.610	7.688
ME/BE	4.242	4.300	4.405
FEV	65.000	61.507	68.893
MAR	0.227	0.241	0.341
AGE	13.207	12.338	13.842

CNEWS is a firm's earnings surprise. *NEWS*, firm news, is a 0, 1 dummy variable of *CNEWS*. *NEWS*=1, if firm's earnings surprise is bigger than 0, and 0, otherwise. *MNEWS*, relative market condition, is 0, 1 dummy variable of the difference between firm's earnings surprise and the market's average earnings surprise. If a firms earnings surprise is greater than market's average earnings surprise, *MNEWS* is defined as 1 and 0, otherwise. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1).

first booking dates. "Advance" means that firms advance the first booking dates of their quarterly report disclosures; "No Change" indicates that firms did not change the first booking dates of their quarterly report disclosures; and "Delay" is that firms delay the first booking dates of their quarterly report disclosures. As can be seem from Table 4.6, the mean values of *CNEWS* and *NEWS* in "Advance" (0.029 for *CNEWS* and 0.612 for *NEWS*) are greater those in "Delay"(0.017 for *CNEWS* and 0.579 for *NEWS*). Consistent with hypotheses, these initial findings suggest that firms with good firm news tend to advance the first booking dates of quarterly report disclosures but firm with bad firm news are likely to delay them. It is contrary for relative market condition. Bad relative market condition triggers firms to amend their first booking dates early but good relative market condition make them change their first booking dates late.

4.6 Methodology

Since the dependent variable, booking lag, is a 0, 1 dummy variable, both probit regression and panel probit regression are employed to test its association with firm news. The former one is used for the baseline analysis and the latter one is undertaken for robustness checks. Additionally, in the robustness check section, OLS regression and panel regression are further utilized, as continuous booking lag is applied as an alternative dependent variable measurement.

Ordinary Least Squares

Ordinary Least Squares (hereafter, OLS) is a standard method to estimate the unknown parameters in a linear regression model by minimizing the sum of the squared estimated errors. The standard specification of OLS regression is

$$y_i = \alpha + \beta_1 x_1 + \beta_2 x_2 + ... + \beta_i x_i$$

The OLS estimator is consistent when the regressors are exogenous and there is no perfect multicollinearity, and optimal in the class of linear unbiased estimators when the errors are homoscedastic and serially uncorrelated. Under these conditions, the method of OLS provides minimum-variance mean-unbiased estimation when the errors have finite variances. Under the additional assumption that the errors be normally distributed, OLS is the maximum likelihood estimator. OLS is commonly used in econometrics, and under the assumptions of normally distributed residuals, the estimators of OLS are Best Linear Unbiased Estimators (BLUE). In Table 4.12

of robustness check section, OLS has been employed to test the association between continuous booking lag and continuous firm news, as the dependent variable, continuous booking lag, is a continuous variable. In order to examine the robustness of this association, I also utilize panel regression which has been shown as the followings.

Panel Regression

Panel regression is used to the analyse panel data which includes multi-dimensions, most commonly, dimensions of both cross-sectional and time series. It has three main advantages in comparison with "pure" time-series or cross-sectional regression such as OLS regression. Firstly, it may solve the bias problem in terms of unobserved heterogeneity. Secondly, it may show dynamics which are not possible to detect using cross-sectional regression. Thirdly, its multi dimension nature increases the sample sizes. Focused on its first advantage, this study introduces panel regression so as to detect potential bias caused by potentially unobserved individual firm effect.

Panel regression includes both panel linear regression and panel probit regression. Panel linear regression is used for analysing continuous dependent variables while panel probit regression is developed as the increasing needs of using panel regression to analyse dichotomous dependent variables.

In panel regression, two most widely used panel estimators are fixed effects and random effects. With fixed effects, no distributional assumptions concerning the individual effects are required. However, it is not possible to include in the model covariates that are fixed over the observations for each individual. With random effects, a specific distributional assumption (typically, normality) is required for the

individual effects. But it is possible to include covariates that are fixed over the observations for each individual. The consistency of random effects requires no covariance between the covariates and the individual effects. This is a strong assumption, which often fails in practice. Fixed effects does not require this assumption. In this study, however, random effects is used because several of the covariates of interest (market category, age of being a listed firm and industry category) are fixed over the observations for each individual.

The standard specification of the panel regression is:

$$Y_{it} = \beta_1 + \sum_{j=2}^{k} \beta_j X_{jit} + \alpha_i + u_{it}$$

Where,

$$\alpha_i = \sum_{p=1}^{s} \gamma_p Z_{pi}$$

α_i represent the unobserved effect, which reflect the joint influence of Z_{pi} (responsible for unobserved heterogeneity) on Y_i. If α_i affects any X_j,or Y_j, OLS estimators will be biased because of the unobserved effect.

Probit Regression

OLS regression has its limitation when coming to the case of limited dependent variables. It is inefficient, and the estimated underlying linear probability model (LPM) represents a poor a priori choice of model specification. However, the probit model

is a popular specification for an ordinal or a binary response model which employs normal distribution as the link function. This model is commonly estimated by the standard maximum likelihood procedure. I employ it in the section of empirical results, since the dependent variable, booking lag, is a 0,1 dummy variable.

A probit model can constrain the estimated probabilities to be between 0 and 1, and relaxes the constraint that the effect of independent variables is constant across different predicted values of the dependent variable. Probit model assumes an S-shaped response curve such that in each tail of the curve the dependent variable, $Pr(Y = 1)$, responds slowly to changes in the independent variables, while towards the middle of the curve, that is, towards the point where $Pr(Y = 1)$ is closest to 0.5, the dependent variable responds more swiftly to changes in the independent variables. Its general specification is:

$$Pr(Y = 1|x_i) = \Phi(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + ... + \beta_i x_i + u_i)$$

where Φ represents the cumulative normal distribution function (hereafter, CDF). The positive (negative) β means an increase in X is likely to increase (decrease) the probability of $Y = 1$. β reports how the index changes with a change in X, but the index is only an input to the CDF. The size of β is hard to interpret because the change in probability for a change in X is non-linear as it depends on all x_1, x_2 ... x_i. The easiest approach to interpretation is computing the predicted probability $\hat{Y}$ for alternative values of X. Therefore, I report the marginal effects in this study as well.

Panel Probit Regression

Panel probit regression has been developed to meet the increasing needs of using panel regression to analyse dichotomous dependent variables. It includes multi-dimensions, most commonly, dimensions of both cross-sectional and time series. The regression of panel probit has been expressed as the following

$$Pr(Y = 1|x_{i,t}) = \Phi(\beta_0 + \beta_1 x_{i,t} + \beta_2 x_{i,t} + ... + \beta_i x_{i,t} + \epsilon_{i,t})$$

where Φ represents the cumulative normal distribution function (hereafter, CDF), in a fixed effects model, $\epsilon_{i,t}$ is assumed to vary non-stochastically over i or t making the fixed effects model analogous to a dummy variable model in one dimension, while in a random effects model, $\epsilon_{i,t}$ is assumed to vary stochastically over i or t requiring special treatment of the error variance matrix Hsiao et al. (1999). As the same as panel regression, panel probit regression is more complex in comparison with "pure" cross-sectional probit regression. In order to check the robustness, the panel probit regression has also been applied to test the relationship between booking lag and firm news in next section.

4.7 Empirical Results

Table 4.7 shows the probit regression and Table 4.8 reports the panel probit regression results of booking lag on firm news and other control variables. In both tables, four model specifications (model 1 to model 4) are provided. For each model, both

coefficients and marginal effects are shown. The first model only includes the firm news as the independent variable. The second model includes the control variables: firm size, market to book ratio, financial leverage, market category and listed year as additional explanatory variables, in order to examine the effect of controlling for these variables on the relationship between firm news and booking lag. As different industries may have distinct disclosure traits, the industry dummies are added in model 3. The only difference between m3 and m4 is that the latter one includes the dummy variables for the year and quarter.

Table 4.7: Probit Regressions of Booking Lag on Firm News

	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
NEWS	-0.085*	-0.033*	-0.114**	-0.044**	-0.120**	-0.047**	-0.131**	-0.051**
	(0.053)	(0.021)	(0.054)	(0.021)	(0.054)	(0.021)	(0.056)	(0.022)
SIZE			-1.461***	-0.571***	-1.480***	-0.578***	-1.256***	-0.490***
			(0.299)	(0.117)	(0.306)	(0.119)	(0.318)	(0.124)
ME/BE			-0.266	-0.104	-0.002	-0.001	0.508	0.198
			(0.716)	(0.280)	(0.730)	(0.285)	(0.830)	(0.324)
FEV			0.011**	0.004**	0.011**	0.004**	0.010**	0.004**
			(0.005)	(0.002)	(0.005)	(0.002)	(0.005)	(0.002)
MAR			3.727***	1.456***	3.626***	1.416***	4.241***	1.653***
			(0.596)	(0.232)	(0.600)	(0.234)	(0.667)	(0.260)
AGE			0.189***	0.074***	0.206***	0.080***	0.120	0.047
			(0.056)	(0.022)	(0.059)	(0.023)	(0.062)	(0.024)
INDU_DUM					yes	yes	yes	yes
YQ_DUM							yes	yes
Constant	0.252***		0.978***		0.981		1.136	
	(0.041)		(0.236)		(0.820)		(0.828)	
Log likelihood	-1594.902		-1560.652		-1553.917		-1511.967	
N	2346	2346	2346	2346	2346	2346	2346	2346

I define *BLAG*, booking lag, as a dummy variable. If the actual disclosure date is later than first booking date, we define it as 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0. *NEWS*, firm news, is a 0, 1 dummy variable of a firm's earnings surprise. *NEWS*=1, if a firm's earnings surprise is bigger than 0, and 0, otherwise. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is the category of industry. If a firm belongs to an industry, we define it to be 1, and 0, otherwise. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is year and quarter dummy. If a firm belongs to this year or this quarter, we define it to be 1, and 0, otherwise. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to get nice coefficients, the size, leverage, market and age are divided by 10 and ME/BE is divided by 100. Significance levels : *: 10%, **: 5%, ***: 1%.

In Table 4.7, the firm news is negatively related to booking lag at a 5% to 10% significance levels in all model specifications. It supports H_{1a} and H_{1b} and suggests the null hypotheses should be rejected. Managers appear to be willing to advance their first booking dates of quarterly reports if quarterly reports reveal good firm news, but delay them if quarterly reports reveal bad firm news. In particular, the marginal effects of firm news suggest that, bearing bad firm news is associated with an increase of 0.033 to 0.051 in the probability of postponing first booking dates of quarterly reports.

Consistent with Dyer and McHugh (1975) and Atiase et al. (1989), in Table 4.7, the association between firm size and booking lag is significantly negative. One unit increase in firm size causes a 0.490 to 0.578 decrease in probability of booking lag. The results suggest that large firms have a propensity to advance their first booking dates of quarterly reports, whereas small firms are likely to postpone them. Dyer and McHugh (1975) suggests that managers of large firms have more propensity to release their financial information early than the managers of small firms. And they attribute this to concern by large firm managers that they could attract investors more attention than small firms and investors may consider their firm news as bad if it is delay since the late release may be expected to convey bad news (the good news early and bad news late hypothesis).

As can be seen from Table 4.7, financial leverage is significantly and positively related to booking lag. The marginal effects of financial leverage shows that an increase of 0.004 in booking lag, is expected to occur if financial leverage increases by one unit. A high financial leverage ratio indicates the firms are using a high proportion of debt and other liabilities to finance their assets, and consequently, every thing else

Table 4.8: Panel Probit Regressions of Booking Lag on Firm News

	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
NEWS	-0.104*	-0.040*	-0.129**	-0.049**	-0.133**	-0.050**	-0.147**	-0.053**
	(0.061)	(0.024)	(0.061)	(0.023)	(0.061)	(0.023)	(0.063)	(0.023)
SIZE			-1.492***	-0.566***	-1.495***	-0.563***	-1.175***	-0.427***
			(0.382)	(0.142)	(0.388)	(0.144)	(0.407)	(0.147)
ME/BE			-0.182	-0.069	0.076	0.029	0.625	0.227
			(0.825)	(0.313)	(0.833)	(0.314)	(0.952)	(0.346)
FEV			0.012**	0.005**	0.012**	0.004**	0.011*	0.004*
			(0.006)	(0.002)	(0.006)	(0.002)	(0.006)	(0.002)
MAR			4.154***	1.575***	4.053***	1.527***	4.799***	1.744***
			(0.761)	(0.281)	(0.762)	(0.280)	(0.837)	(0.295)
AGE			0.194***	0.074***	0.217***	0.082***	0.119	0.043
			(0.072)	(0.027)	(0.075)	(0.028)	(0.079)	(0.029)
INDU_DUM					yes	yes	yes	yes
YQ_DUM							yes	yes
Constant	0.293***		0.993***		0.947		1.077	
	(0.051)		(0.297)		(0.973)		(0.989)	
Log likelihood			-1537.154		-1531.839		-1490.378	
N	2346	2346	2346	2346	2346	2346	2346	2346

I define *BLAG*, booking lag, as a dummy variable. If the actual disclosure date is later than first booking date, we define it as 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0. *NEWS*, firm news, is a 0, 1 dummy variable of a firm's earnings surprise. *NEWS*=1, if a firm's earnings surprise is bigger than 0, and 0, otherwise. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is the category of industry. If a firm belongs to an industry , we define it to be 1, and 0, otherwise. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is year and quarter dummy. If a firm belongs to this year or this quarter, we define it to be 1, and 0, otherwise. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to get nice coefficients, the size, leverage, market and age are divided by 10 and ME/BE is divided by 100. Significance levels : *: 10%, **: 5%, ***: 1%.

being equal, they are more riskier and more likely to experience financial distress than firms with lower financial leverage. Debtholders tend to impose covenants in their debt contracts when financial leverage is high. If the firms are in danger of violating one of these covenants, they will prefer to delay the publication of their accounts. This could be the reason that firms with higher financial leverage tend to delay their first booking dates of quarterly reports.

Additionally, I find evidence that market category is positively associated to booking lag at a 1% significance level. For example, in Table 4.7, being a Shanghai stock exchange listed firm is associated with a increase of 1.416 to 1.653 in the probability of delaying the first booking date of quarterly report. It suggests that firms listed in the Shanghai stock exchange have more propensity to delay their first booking dates of quarterly reports than firms listed in Shenzhen stock exchange. This could be attributed to the different regulations in two stock exchanges. During each legal disclosure period, the Shanghai stock exchange market allows no more than 40 firms release their reports per day, whereas Shenzhen stock exchange market permits no more than 25 firms. According to these regulations, there could be no space for managers to book a desired disclosure dates of quarterly reports, when they firstly booked with CRSC. However, they can achieve it by amending the first booking dates of their quarterly reports.

There is a significantly and positive association between listed year and booking lag in model 2 and model 3 of Table 4.7 as well. However, in model 4, after controlling for the year and quarter dummies, this relationship becomes insignificantly. A possible explanation for this relationship could be that, the longer the listed year, the more business lines and consequently, the more time needed to prepare the quarterly

reports.

The findings of Table 4.8 support the good news early and bad news late theory. As the same as Table 4.7, the firm size, financial leverage, market category and listed year are significant determinants on booking lag. Especially, the marginal effects of firm news, financial leverage and market category are improved after controlling for unobservable individual effects.

4.8 Additional Analysis

The section on empirical results concludes that managers have a propensity to amend their first booking dates early if their quarterly reports reveal good firm news but change them late if their quarterly reports reveal bad firm news. However, the question why managers change their first booking dates to manipulate their disclosure dates of quarterly report rather than book desired disclosure dates directly? Based on the theoretical predictions of Acharya et al. (2011), I conjecture it could be due to that managers tend to decide whether to advance or delay the releases of their firm news until the relative market condition is available. At the time of booking their disclosure dates with the CRSC, managers will not be in a position to decide whether book a early or late disclosure dates since they are unlikely to know the relative market condition. However, after prior firms have released their firm news, managers can infer the relative market condition based on these released firm news compared to the prior released firm news in the same legal disclosure period of last year, and amend their original booking dates to advance or delay their first booking dates of quarterly reports. In this thesis, I define the relative market con-

dition as bad, if a firm's earnings surprise is greater than market's average earnings surprise, but good, if it is less.

Table 4.9 and Table 4.10 show the regression results of the booking lag on relative market condition and other control variables by employing probit and panel probit analysis. The structure of Table 4.9 and 4.10 is the same as those of Table 4.7 and Table 4.8. The first model only include relative market condition as the independent variable. The remaining three models add the control variables as the independent variables gradually.

In all model specifications of Table 4.9, the relative market condition is significantly and negatively related to booking lag. The marginal effects of relative market condition show that, bearing bad relative market condition is associated with an decrease of 0.040 to 0.045 in the probability of postponing first booking dates of quarterly reports. Consistent with the theoretical findings of Acharya et al. (2011), managers have a propensity to advance their first booking dates of quarterly reports, if the market news is bad, conversely, they are likely to delay their first booking dates of quarterly reports, if the relative market condition is good. The results of Table 4.10 also support these findings.

According to the explanations of Acharya et al. (2011), managers do not want to make their bad firm news seem worse compared to good relative market condition and they hope the delay of quarterly report can avoid this detrimental comparison. Conversely, if the relative market condition is bad, the early release of good firm news could make the good firm news seem better compared to the bad relative market condition.

Table 4.9: Probit Regressions of Booking Lag on Relative Market Condition

	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
MNEWS	-0.099**	-0.040**	-0.111**	-0.044**	-0.107**	-0.043**	-0.114**	-0.045**
	(0.052)	(0.020)	(0.052)	(0.020)	(0.053)	(0.021)	(0.053)	(0.021)
SIZE			-1.435***	-0.551***	-1.437***	-0.551***	-1.230***	-0.470***
			(0.296)	(0.116)	(0.303)	(0.119)	(0.316)	(0.124)
ME/BE			-0.141	-0.050	0.131	0.059	0.628	0.243
			(0.719)	(0.281)	(0.733)	(0.286)	(0.834)	(0.325)
FEV			0.011**	0.004**	0.011**	0.004**	0.011**	0.004**
			(0.005)	(0.002)	(0.005)	(0.002)	(0.005)	(0.002)
MAR			3.795***	1.470***	3.681***	1.421***	4.358***	1.677***
			(0.591)	(0.231)	(0.595)	(0.233)	(0.663)	(0.259)
AGE			0.179***	0.069***	0.199***	0.076***	0.110	0.041
			(0.056)	(0.022)	(0.059)	(0.023)	(0.062)	(0.024)
INDU_DUM					yes	yes	yes	yes
YQ_DUM							yes	yes
Constant	0.250***		0.947***		0.902		1.031	
	(0.036)		(0.231)		(0.809)		(0.817)	
Log likelihood	-1618.248		-1583.199		-1576.467		-1535.777	
N	2381	2381	2381	2381	2381	2381	2381	2381

I define *BLAG*, booking lag, as a dummy variable. If the actual disclosure date is later than first booking date, we define it as 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0. *MNEWS*, relative market condition, is 0, 1 dummy variable of the difference between firm's earnings surprise and the market's average earnings surprise. If the firms earnings surprise is greater than market's average earnings surprise, *MNEWS* is defined as 1 and 0, otherwise. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is the category of industry. If a firm belongs to an industry , we define it to be 1, and 0, otherwise. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is year and quarter dummy. If a firm belongs to this year or this quarter, we define it to be 1, and 0, otherwise. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to get nice coefficients, the size, leverage, market and age are divided by 10 and ME/BE is divided by 100. Significance levels : *: 10%, **: 5%, ***: 1%.

Table 4.10: Panel Probit Regressions of Booking Lag on Relative Market Condition

	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
NEWS_DIF	-0.113*	-0.044*	-0.122**	-0.049**	-0.117**	-0.050**	-0.124**	-0.053**
	(0.060)	(0.023)	(0.060)	(0.023)	(0.060)	(0.023)	(0.060)	(0.023)
SIZE			-1.451***	-0.566***	-1.442***	-0.563***	-1.135***	-0.427***
			(0.381)	(0.142)	(0.387)	(0.144)	(0.406)	(0.147)
ME/BE			-0.024	-0.069	0.233	0.029	0.747	0.227
			(0.831)	(0.313)	(0.839)	(0.314)	(0.958)	(0.346)
FEV			0.012**	0.005**	0.012**	0.004**	0.011*	0.004*
			(0.006)	(0.002)	(0.006)	(0.002)	(0.006)	(0.002)
MAR			4.191***	1.575***	4.089***	1.527***	4.880***	1.744***
			(0.761)	(0.281)	(0.762)	(0.280)	(0.835)	(0.295)
AGE			0.190***	0.074***	0.215***	0.082***	0.113	0.043
			(0.072)	(0.027)	(0.075)	(0.028)	(0.079)	(0.029)
INDU_DUM					yes	yes	yes	yes
YQ_DUM							yes	yes
Constant	0.289***		0.942***		0.846		0.944	
	(0.047)		(0.294)		(0.967)		(0.980)	
Log likelihood	-1576.528		-1551.854		-1546.564		-1506.772	
N	2381	2381	2381	2381	2381	2381	2381	2381

I define *BLAG*, booking lag, as a dummy variable. If the actual disclosure date is later than first booking date, we define it as 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0. *MNEWS*, relative market condition, is 0, 1 dummy variable of the difference between firm's earnings surprise and the market's average earnings surprise. If the firms earnings surprise is greater than market's average earnings surprise, *MNEWS* is defined as 1 and 0, otherwise. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, market=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is the category of industry. If a firm belongs to an industry , we define it to be 1, and 0, otherwise. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is year and quarter dummy. If a firm belongs to this year or this quarter, we define it to be 1, and 0, otherwise. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to get nice coefficients, the size, leverage, market and age are divided by 10 and ME/BE is divided by 100. Significance levels : *: 10%, **: 5%, ***: 1%.

These findings are also related to the paper of Trueman (1990) and Kothari et al. (2009) which illustrate that managers have strong incentives to withhold bad firm news and gamble that subsequent events can hide their bad firm news to some extent.

In addition, as the same as the findings in Table 4.9 and 4.10, the firm size, financial leverage, market category and listed years are significant determinants on booking lag.

4.9 Robustness Check

4.9.1 Annual Data

Since annual report is required to be audited, it is commonly considered more standard than quarterly report. Hence, in Table 4.11, the relationship between firm news and booking lag has been retested using only annual data.

Model 1 and model 2 show the regression results by applying probit regression and model 3 and model 4 report the regression results by employing panel probit regression. Model 1 and model 3 only include firm news as the explanatory variable. Model 2 and model 4 additionally include control variables. Supporting the main finding in the section of empirical results, the association between firm news and booking lag is consistently and negatively at 1% to 5% significance levels.

I also find the directions of market category and firm size in this table are consistent with the findings in previous tables. However, the coefficient of firm size is

Table 4.11: Regressions of Booking Lag on Firm News in Annual Data

	Probit Regression				Panel Probit Regression			
	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
NEWS	-0.155**	-0.061**	-0.232***	-0.090***	-0.220**	-0.085**	-0.294***	-0.106***
	(0.073)	(0.029)	(0.078)	(0.030)	(0.090)	(0.034)	(0.094)	(0.033)
SIZE			-0.838*	-0.328*			-0.902	-0.327
			(0.441)	(0.173)			(0.557)	(0.201)
ME/BE			0.776	0.304			1.106	0.401
			(1.008)	(0.395)			(1.197)	(0.433)
FEV			0.007	0.003			0.010	0.004
			(0.007)	(0.003)			(0.008)	(0.003)
MAR			4.348***	1.703***			5.074***	1.838***
			(0.760)	(0.298)			(1.003)	(0.342)
AGE			0.022	0.009			0.038	0.014
			(0.084)	(0.033)			(0.106)	(0.038)
INDU_DUM			yes	yes			yes	yes
Y_DUM			yes	yes			yes	yes
Constant	0.275***		0.954		-0.655**		-0.832**	
	(0.057)		(0.902)		0.316)		(0.356)	
Log likelihood	-850.067		-810.528		-838.202		-802.153	
N	1248	1248	1248	1248	1248	1248	1248	1248

I define *BLAG*, booking lag, as a dummy variable. If the actual disclosure date is later than first booking date, we define it as 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0. *NEWS*, firm news, is a 0, 1 dummy variable of a firm's earnings surprise. Firm news=1, if firm's earnings surprise is bigger than 0, and 0, otherwise. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, market=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is the category of industry. If a firm belongs to an industry , we define it to be 1, and 0, otherwise. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *Y_DUM* is year dummy. If a firm belongs to this year, we define it to be 1, and 0, otherwise. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to get nice coefficients, the size, leverage, market and age are divided by 10 and ME/BE is divided by 100. Significance levels : *: 10%, **: 5%, ***: 1%.

insignificant when controlling unobservable individual effects in model 4.

4.9.2 Continuous firm news and Continuous booking lag

In Table 4.12, an alternative measurement of firm news and booking lag have been employed. Both of them are defined as continuous variables in this table. The continuous booking lag is measured as the booking difference shown in Equation (1) and the continuous firm news is defined as earnings surprise expressed in Equation (2). As a further check, I apply OLS regression and panel regression to test the relationship between continuous firm news and continuous booking delay. In all model specifications of Table 4.12, the directions of the continuous firm news coefficients are negative. Although the coefficients of continuous firm news are insignificant in model 1 and model 5, they are consistent and significant in the other six models. This finding further supports that good firm news triggers managers to advance their first booking dates of quarterly reports whereas bad firm news encourage managers to delay them.

As the same as the findings in previous tables, the firm size, market category and listed year are significant determinants on booking lag as well. In particular, there is a significant and positive relationship between market to book ratio and booking lag. It suggest that firms with high market to book ratio are willing to advance their first booking dates of quarterly reports, but firms with low market to book ratio prefer to delay them. Loughran and Ritter (2000) suggest, high market to book ratio could be an indicator of securities being overvalued. After the firm news has been released, the overvalued stock price will drop back to fundamental. Therefore,

Table 4.12: Regressions of Continuous Firm News on Continuous Booking Lag

	OLS Regression					Panel Regression		
	m1	m2	m3	m4	m5	m6	m7	m8
CNEWS	-0.308	-0.522*	-0.518*	-0.550*	-0.451	-0.605**	-0.598**	-0.564*
	(0.298)	(0.299)	(0.299)	(0.302)	(0.294)	(0.297)	(0.297)	(0.299)
SIZE		-1.693***	-1.440**	-0.767		-1.995**	-1.765*	0.293
		(0.594)	(0.601)	(0.618)		(0.913)	(0.920)	(0.997)
ME/BE		2.821*	3.117*	5.465***		2.630	2.768	6.367***
		(1.600)	(1.610)	(1.734)		(1.848)	(1.852)	(2.074)
FEV		0.012	0.012	0.008		0.016	0.016	0.005
		(0.009)	(0.009)	(0.009)		(0.013)	(0.013)	(0.013)
MAR		8.811***	8.743***	9.706***		10.454***	10.359***	12.151***
		(1.158)	(1.160)	(1.287)		(1.990)	(1.982)	(2.123)
AGE		0.138	0.186*	0.020		0.105	0.162	-0.100
		(0.100)	(0.104)	(0.109)		(0.178)	(0.185)	(0.191)
INDU_DUM				yes				yes
Y_DUM				yes				yes
Constant	0.161***	0.867*	-0.220	-0.606	0.302***	1.113	0.327	-1.256
	(0.048)	(0.449)	(1.219)	(1.233)	(0.091)	(0.688)	(2.057)	(2.088)
R-squared	0.001	0.004	0.004	0.007	0.001	0.004	0.005	0.008
N	18273	18273	18273	18273	18273	18273	18273	18273

I define *CBLAG*, continuous booking lag, is the difference between actual disclosure date of quarterly report and the first booking date of quarterly report. *CNEWS*, is firm's earnings surprise. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, market=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is the category of industry. If a firm belongs to an industry , we define it to be 1, and 0, otherwise. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *Y_DUM* is year dummy. If a firm belongs to this year, we define it to be 1, and 0, otherwise. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to get nice coefficients, the size, leverage, market and age are divided by 10 and ME/BE is divided by 100. Significance levels : *: 10%, **: 5%, ***: 1%.

the firms with high market to book ratio may choose delay the disclosure of their quarterly reports.

The results in this section suggest the findings in support of the good news early and bad news late hypotheses to employ different measurement of firm news and booking lags, and resting analyse the annual data. In addition, firm size, market book ratio, market category and listed year have been found to be the determinants of booking lag.

4.10 Conclusion

In this chapter, using the context of the Chinese booking system of quarterly report disclosure, I investigate whether managers strategically time their disclosure dates of quarterly reports by amending their first booking disclosure dates of quarterly reports. Consistent with the good news early and bad news late hypothesis, I find managers advance their first booking dates if firm news is good, but they delay them if firm news is bad. I further demonstrate that waiting for relative market condition could be the motivation of managers who use the timing strategy to amend the first booking dates. At the end of each fiscal quarter, managers could book initial disclosure dates with the CRSC but when relative market condition becomes public, they then change their disclosure dates by advancing or delaying their first booking dates. In line with the findings of Acharya et al. (2011), the results also show that managers advance their first booking dates when relative market condition is bad whereas they delay them when relative market condition is good. In addition, I find that firm size, market to book ratio, financial leverage, market category and listed

year are determinant of timeliness of quarterly report disclosure.

Chapter 5

Good News, Bad News and Simultaneous Disclosure

5.1 Introduction

Prior literature on the timeliness of financial information disclosure focuses on the discrete release of single financial information sources and pays limited attention to the release sequence of two financial information sources. In this chapter, I empirically examine whether the nature of firm news affects the decisions of managers on the release sequence of the two financial information sources.

The unique financial report disclosure regulation in China provides a natural experiment for my study. The CSRC requires listed firms to release annual reports of one year within the first four months of the following year and to publish the subsequent first quarterly reports in April of the same year. Accordingly, there is a overlapping

legal disclosure period between those two reports which allows firms to release them simultaneously or separately. My results, based on a sample of 3029 observations from 2006 to 2012, shows that 84.9% of firms release these two reports separately while only 15.1% of firms publish them together.

I find that managers prefer to make simultaneous disclosure, if the two reports reveal bad news, but separately, if they both reveal good news. These findings are in line with the implications of mental accounting theory proposed by Thaler (1999), which states that individuals have a propensity to integrate two losses but segregate two gains. Thaler (1999) also suggest this may reflect the utility of integrated losses being higher than the utility of segregated losses, whereas the utility of segregated gains appears to be higher than the utility of integrated gains. In particular, the simultaneous disclosure of two reports revealing bad news is in line with the big bath theory, which implies that if this period's earnings are low, managers have a propensity to make this period's earnings worse so that the next period's earnings seem better (Kirschenheiter and Melumad, 2002).

Additionally, I find managers prefer to release annual reports and subsequent first quarterly reports simultaneously, if the annual report reveals bad news and the subsequent first quarterly report conveys good news, conversely, managers are likely to publish them separately, if the annual report reveals good news and the subsequent first quarterly report contains bad news. A possible explanation is that the difference between the two released news reflects the direction of a firm's growth. Generally, the annual bad and subsequent quarter good news implies a favorable growth of the firm, whereas the annual good and subsequent quarter bad news signifies worsening of the firm's prospects. Therefore, if the annual report reveals bad

news and the subsequent first quarterly report conveys good news, managers tend to use simultaneous disclosure to make the investor to observe the favorable firm growth more directly. In contrast, if the annual report reveals good news and the subsequent first quarterly report contains bad news, the managers are likely to separate the disclosure in hope of lowering the probability of investors to detect the firm's worsening position. However, the relationship between annual bad and quarter good news and simultaneous disclosure is not significant. A possible explanation for the lack of significance is the negativity bias, which suggests, even when events are of equal intensity, negative events tend to have a greater impacts on individuals than positive events. In this study, the annual good and quarter bad news indicates a negative event and the annual bad and quarter good news implies a positive event. The results comply with the negativity bias as managers appear to react stronger to the annual good and quarter bad news, but react less to the annual bad and quarter good news.

Further, listed firms are required by the CSRC to book disclosure dates of quarterly reports with the CSRC by the end of each fiscal quarter. At the time of booking the annual report release date, managers will not know the results of the subsequent first quarter and thus will not be in a position to decide whether to release the two reports simultaneously or separately. Managers, however, can subsequently advance or delay the annual report booking date when the results of the first quarter become available since CSRC permits firms to change their first booking dates at least 5 working days beforehand. This unique Chinese disclosure booking system allows us to study how managers combine or separate the disclosures of the two reports by altering their first booking dates. I find that, a significant proportion (25.49%) of

managers do amend their annual and first quarterly report booking dates to achieve simultaneous or separate disclosure. That is, managers have a propensity to delay the first booking dates of annual reports and advance those of first quarterly reports in order to achieve simultaneous disclosure, conversely, they are likely to advance the first booking dates of annual report and delay those of first quarterly report in order to make the separate disclosure.

The rest of the chapter is organized as follows. Section 2 and 3 review the relevant literature and institutional background; Section 4 develops the research design and describes the data; Section 5 reports the empirical tests and results; Section 6 presents the additional analysis; and Section 7 summarizes and concludes.

5.2 Literature Review

As stated by Healy and Palepu (2001), in order to maximize profits, managers have a tendency to time their disclosures of financial information. Previous research on the timeliness of financial information disclosure has focused on the discrete release of single financial information sources, whereas there has been limited emphasis on the release sequence of two financial information sources.

Gennotte and Trueman (1996) theoretically document that managers prefer to make earnings announcements separately from other disclosures if earnings are likely to have a favorable impact on firm value. Conversely, managers are likely to make the earnings announcement simultaneously with other disclosures if the earnings have a unfavorable impact on firm value. They explain investors are likely to more

strongly react to price in response to an earnings announcement which is greater than expected if that announcement is made separately from, rather than simultaneously with another announcement by the firm.

In light of the incentives of managers to avoid the stock price-related consequences of earnings disappointments, Lansford (2006) further questions whether managers strategically time the disclosure of a proprietary indicator such as information concerning patents around the negative earnings announcements. Lansford (2006) suggests that, for a sample predominately composed of small-capital, high-technology firms, the probability of disclosing a patent strategically before an impending negative earnings surprise announcement increases in the magnitude of the negative earnings surprise. Lansford (2006) also finds evidence that such strategic patent disclosure appears to successfully dampen the market's response to the negative earnings announcement.

The most relative paper to my study is Xie and Tang (2006) which tests whether the natures of earnings per shares revealed by 2003 annual report and 2004 first quarterly report affect the release time difference of these two reports. Xie and Tang (2006) suggest that the time between the two reports releases tends to be larger if both reports reveal positive earnings per share, but smaller if either of the two reports reveals a negative earnings per share.

In this chapter, (1) I use simultaneous disclosure instead of release time difference as dependent variable, since simultaneous disclosure can better reflect the timing manipulation between two reports than release time difference of two reports. According to the good news early and bad news late hypothesis proposed by Kross

(1981), Givoly and Palmon (1982), Haw et al. (2000) amongst others, Xie and Tang (2006)'s findings of smaller release time difference between 2003 annual report and 2004 first quarterly report could be due to the bad 2003 annual news late and good 2004 first quarterly news early. However, the simultaneous disclosure can avoid this problem of Xie and Tang (2006) since it measures the release manipulation between two reports more appropriately and precisely than release time difference. (2) Different from Xie and Tang (2006), only uses one specific period data, the data in this chapter extends from 2006 to 2012 and thus includes both time-series and cross-sectional variations. (3) Rather than using earnings per share of Xie and Tang (2006), I utilize the earnings surprise conveyed in the reports as the independent variable and mental accounting theory to further explain the results. (4) In addition, I test whether managers amend the disclosure dates of two reports to achieve simultaneous or separate disclosure through changing the disclosure dates function regulated by the CRSC.

According to the mental accounting theory proposed by Thaler (1999), individuals have a propensity to segregate gains and integrate losses. In both Graph A and B of Figure 5.1, $V(X+Y)$ indicates the value of integration and $V(X)+V(Y)$ indicates the value of segregation. In each graph, the first quadrant shows the gain function while the third quadrant represents the loss function. As the gain function is concave while the loss function is convex, Graph A shows $V(X+Y)$ is higher than $V(X)+V(Y)$, conversely, Graph B exhibits $V(X+Y)$ is lower than $V(X)+V(Y)$. This implies that the utility of integrated losses is higher than the utility of segregated losses whereas the utility of segregated gains is higher than the utility of integrated gains. Therefore, managers could use these two implications to influence investors

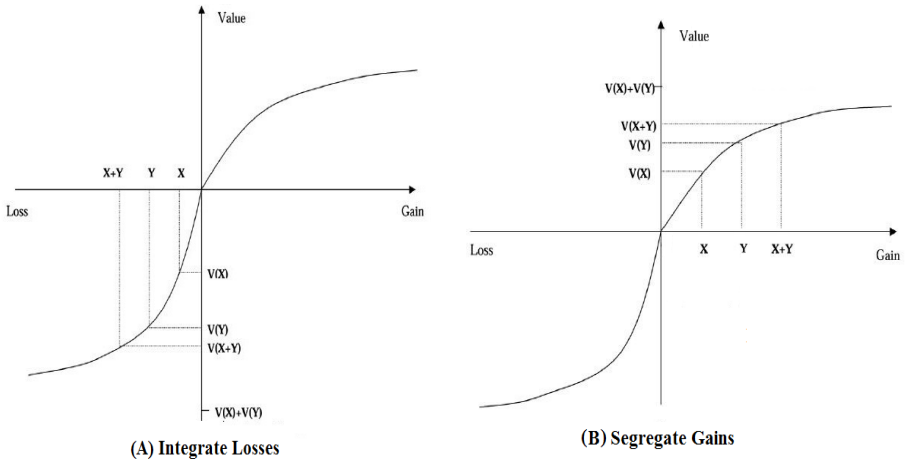


Figure 5.1: Integrate Losses and Segregate Gains

and the stock price-related consequences of the financial information disclosures.

Mental accounting theory was demonstrated in an experiment which was conducted at Cornell University byThaler and Johnson (1990). Subjects were shown pairs of outcomes which were either segregated or integrated and asked them which frame was their favorite. The manners of most subjects were in line with the implications predicted by mental accounting theory.

The segregated gains implication of mental accounting theory has been found in the financial market. For example, Lim (2006) demonstrates that investors tend to sell multiple stocks more when they realize losses than gains. Shefrin and Statman (1985) also suggests that brokers divide the cash flow of a covered call into three mental accounts, which includes the call premium, the dividend, and the capital gain on the stock, in order to make covered calls more attractive to their clients.

For financial information disclosure, in accounting, the big bath theory is related to the integrated losses implication of mental accounting theory. Kirschenheiter and

Melumad (2002) state that, if a firm experiences low earnings in a given period, managers tend to manipulate its income statements to make this poor performance worse, which they refer to as a "big bath". The subsequent period's earnings will be appear better in comparison. Walsh et al. (1991) also point out that "when circumstances are bad, making things just a little bit worse by cleaning out the rubbish does little harm to either reputation or prospects" (p.174) and Newsweek (p40) argue that "business is taking something of a even if unwanted bath anyway", so why not make the bath "really bad and clean up all my accounts" (p.40)? However, the big bath theory mostly focus on the earnings manipulations. For instance, Watts and Zimmerman (1986) have proposed that a manager "has incentives to use methods, such as big bathing to reduce reported earnings further so that future earnings and bonuses are increased" (p.209). Bleakley (1995) states managers "may distort a company's earnings picture, packing losses into one quarter in a way that makes past and future earnings look better than they really are"(p.34).

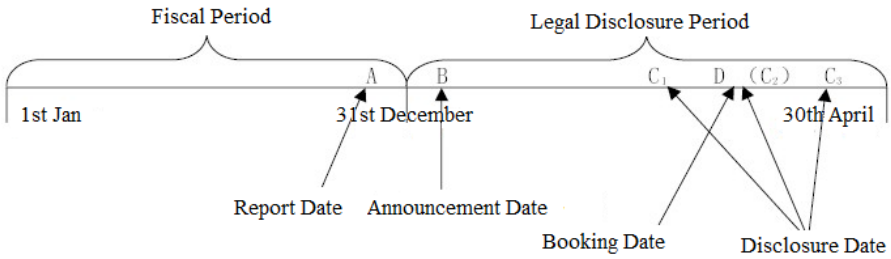
As discussed above, prior literature has not introduced the mental accounting theory into the field of financial information disclosure. However, under the unique Chinese overlapping legal disclosure period between annual report and subsequent first quarterly report, this chapter initially links it to the release sequence of two financial information disclosures.

5.3 Institutional Background

As discussed in chapter 3, from 1997, CSRC implemented a booking system of quarterly report, requiring all listed firms to book disclosure dates with CRSC near

to the end of each fiscal quarter. Figure 5.2 shows the disclosure procedure of annual report [1] in China. The "report date" (A) is the date that listed firms report their first booking dates to their stock exchanges. Since 2001, both Shanghai and Shenzhen stock exchange markets publish their listed firms' booking disclosure dates before the firms' actual disclosure dates, which is shown as the "announcement date" (B), which commonly occurs around the beginning of each quarter/year's legal disclosure period. The Shanghai stock exchange market requires no more than 40 firms to release their reports each day, while Shenzhen stock exchange market permits no more than 25 firms to release their reports. The "disclosure date" (C1 C2 and C3) is the actual disclosure dates by the firms. Since two stock exchanges allow firms to change their first booking dates, there are several actual disclosure dates. The actual disclosure date could be the same (C2) as, earlier (C1) or later (C3) than first booking date.

Figure 5.2: The Procedure of Annual Report Disclosure



Report date is the dates that listed firms report their first booking dates to their corresponding stock markets. Announcement Date means the dates that stock exchange markets publish their listed firms' first booking disclosure dates. Booking date is the dates which firms want to release their reports and have been reported to stock exchange markets at the report date. Disclosure date is the actual disclosure dates of the listed firms.

The procedures for other quarters are very similar. The difference between them is the length of the legal disclosure period, which is followed by each quarter. The legal disclosure period for the first quarter is from 1st April to 30th April; the second

[1] In China, annul report is fourth quarterly report.

quarter is between 1st July and 31th August, the third quarter extends from 1st October though 31st October and the fourth quarter spans a period of time from 1st January to 30th April. This regulation specifies a unique feature for the disclosure of quarterly report in China. That is, there is an overlapping release period between annual report and the subsequent first quarterly report, extends from 1st to 30th April, which offers a unique opportunity to study the release sequence of two financial information in this chapter. In addition, based upon the modification regulation of first booking dates, I further test whether managers amend the first booking dates of two reports to achieve simultaneous or separate disclosure.

5.4 Research Design and Data

As discussed early in this chapter and more detail in chapter 3, the overlapping legal disclosure period between the previous year's annual report and current year's first quarterly report, enables me to investigate how managers sequence the disclosure of these two reports.

My data crosses 10 industries and extends from 2006 through 2012. Both A shares and B shares from the Shanghai and Shenzhen stock exchanges have been included. The annual/quarter report disclosure dates are downloaded from the official websites of the Shanghai and Shenzhen stock exchanges, while other data are collected from Bloomberg and Thomson one banker.

The dependent variable in my empirical finding section is simultaneous disclosure which is denoted as *SimDis*. It is a dummy variable which is equal to 1, if the annual

Table 5.1: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max	Obs
dependent and independent variables					
SimDis	0.151	0.358	0	1	3029
ADelay	0.518	0.500	0	1	633
QDelay	0.693	0.462	0	1	257
AGQBNews	0.209	0.407	0	1	3029
ABQGNews	0.161	0.367	0	1	3029
AGQGNews	0.392	0.488	0	1	3029
ABQBNews	0.238	0.426	0	1	3029
control variables					
SIZE	7.704	0.946	5.380	10.463	3029
ME/BE	4.332	3.029	0.099	29.810	3029
FEV	61.054	59.323	0	358.431	3029
MAR	0.109	0.312	0	1	3029
AGE	12.221	5.206	3	22	3029

SimDis indicates simultaneous disclosure. *SimDis*=1, if a firm releases its annual report and subsequent first quarterly report on the same day, otherwise, 0. If actual disclosure date of annual report is later than its first booking date, *ADelay*=1, and 0 otherwise. It is the same for *QDelay*, quarter book delay. If the actual disclosure date of first quarterly report is later than its first booking date, *QDelay*=1, and 0, otherwise. *ABQBNews*=1, if firm news is bad in both annual report and subsequent first quarterly report, and 0, otherwise. *AGQGNews*=1, if firm's news is good in both annual report and subsequent first quarterly report, and 0, otherwise. *ABQGNews*=1 if annual report reveals bad news and subsequent first quarterly report reveals good news, and 0, otherwise. *AGQBNews*=1, if annual report reveals good news and subsequent first quarterly report reveals bad news, and 0, otherwise. Firm size is briefly expressed as *SIZE*, which is the log of total asset. *ME/BE* is the abbreviation of market to book ratio, which is calculated as market capitalization divided by total common equity. *LEV* means financial leverage, which is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. All variables in this table are omitted the outliers (I delete the data which is higher than 99% and lower than 1%). I also delete all illegal disclosure data (the firms whose disclosure time exceed the legal period) and the data who is a new listed firm (that is *AGE* equals to 1).

report disclosure date is the same as the subsequent first quarterly report disclosure date, and 0 otherwise. As shown in Table 5.1, on the basis of 3029 observations, only 15.1% of firms release their annual report and first quarterly report together.

The explanatory variable of my particular interest is the nature of firm news, which I examine using the earnings surprise. If current first quarter's earnings per share is greater than earnings per share for the same period last year, I define this as good news, conversely, if it is not, I define the first quarterly report as revealing bad news. Likewise, I define the annual report as good, if current year's earnings per share is greater than earnings per share of last year, and bad, otherwise. I then compare earnings surprises of annual report and subsequent first quarterly report and there are four possible outcomes: both good news; both bad news; a good annual report followed by a bad first quarterly report; and a bad annual report followed by a good first quarterly report. I use four dummy variables to illustrate these outcomes and the dummy variable equals 1 when it complies with the outcome and is 0, otherwise. $ABQBNews$=1, if firm news is bad in both annual report and subsequent first quarterly report, and 0, otherwise. $AGQGNews$=1, if firm's news is good in both annual report and subsequent first quarterly report, and 0, otherwise. $ABQGNews$=1 if annual report reveals bad news and subsequent first quarterly report reveals good news, and 0, otherwise. $AGQBNews$=1, if annual report reveals good news and subsequent first quarterly report reveals bad news, and 0, otherwise.

According to mental accounting, the utility will be higher if losses are integrated than segregated. Therefore, I hypothesize that

H_1: managers release annual reports with bad news and subsequent first quarterly

reports with bad news simultaneously.

Mental accounting also proposes that the utility will be higher if gains are segregated than integrated. Hence, I further hypothesize

H_2: managers release annual reports with good news and subsequent first quarterly reports with good news, separately.

Annual reports with bad news and subsequent first quarterly reports with good news may convey that the firm is improving and the simultaneous disclosure could emphasize this improvement, thus, I hypothesize that

H_3: managers release annual reports with bad news and subsequent first quarterly reports with good news simultaneously.

In contrast, annual reports with good news and first quarterly reports with bad news may convey that the firm's performance is worsening and the separate disclosure might lower the probability of investors to observe the deterioration, therefore, I hypothesize that

H_4: managers release annual reports with good news and subsequent first quarterly reports with bad news separately.

The Chinese disclosure booking system of quarterly report enables managers to change their disclosure dates, which creates a unique opportunity to investigate whether managers utilize this regulation to achieve simultaneous and separate disclosures.

In this chapter, I employ annual booking delay, *ADelay* and quarter booking delay,

QDelay, to measure how firms change their first booking dates. If a firm's actual annual report disclosure date is later than its first booking date, I define annual booking delay as 1, conversely, if a firm's actual annual report disclosure date is earlier than its first booking date, I define annual booking delay as 0. It is similar for the definition of quarter booking delay. Quarter booking delay is defined as 1, if a firm's actual first quarter report disclosure date is later than its first booking date, and 0, if a firm's actual first quarter report disclosure date is earlier than its first booking date.

If managers amend the first booking dates of their annual report, 51.8% firms defer their first booking dates and 48.2% firms advance their first booking dates. For first quarterly report of subsequent year, the proportion of delaying firms is 69% and the percent of advancing firms is 30.7%.

In this chapter, I also hypothesize that

H_5: in order to achieve simultaneous disclosure, managers delay the first booking dates of annual reports, but advance the first booking dates of subsequent first quarterly reports.

Conversely,

H_6: in order to achieve separate disclosure, managers advance the first booking dates of annual reports, but delay the first booking dates of subsequent first quarterly reports.

In order to reveal hypotheses better, all expectations of this chapter have been shown in Table 5.2. In this chapter, I also control for some accounting information variables

Table 5.2: Hypotheses

		annual report	
		good news	bad news
first quarterly report	good news	separate disclosure	simultaneous disclosure
	bad news	separate disclosure	simultaneous disclosure

	annual report	first quarterly report
simultaneous disclosure	delay	advance
separate disclosure	advance	delay

which include firm size, market to book ratio, financial leverage, market, year of being a listed firm and year dummies, in order to examine the effects of controlling for these variables on the association between firm news and simultaneous disclosure. The definitions of these control variables have been shown in Chapter 4. In addition, the correlations of variables have been shown in Table 3 of Appendix.

5.5 Empirical Results

This section outlines the empirical test results of the first four research hypotheses by utilizing panel probit regression [2]. I first examine whether managers disclose two reports simultaneously if both reports reveal good news, but separately if both reports reveal bad news. I then examine whether managers disclose two reports simultaneously if annual report contains bad news and subsequent first quarterly report reveals good news, but separately if annual report conveys good news and subsequent first quarterly report reveals bad news.

[2]the details of panel probit regression presented in Chapter 4.

For each relationship, I report four regression models with coefficients and marginal effects. The first model excludes the control variables whereas the second model includes firm size, market to book ratio, financial leverage, market, and year of being a listed firm as the control variable. The third model further adds industry dummies and the fourth model also includes year dummies as control variables.

5.5.1 Both Bad News and Simultaneous Disclosure

Table 5.3 shows the regression results of simultaneous disclosure, *SimDis*, on both bad news, *ABQBNews*, and other potential explanatory variables. Regression model 4 is shown as the following:

$$Pr(SimDis = 1|x) = \Phi(\alpha + \beta_1 ABQBNews + \beta_2 size + \beta_3 ME/BE + \beta_4 leverage + \beta_5 market + \beta_6 age + \beta_8 IDum + \beta_8 YDum + \varepsilon) \quad Equation\ (1)$$

In Table 5.3, the coefficients for *ABQBNews* in all models are significantly positive providing support for H_1, that simultaneous disclosure is more likely when both the annual and subsequent first quarterly reports convey bad news. Especially, the probability of releasing annual report and subsequent first quarterly report simultaneously increased by 0.055 to 0.061, if both reports reveal bad news.

This finding is in line with the integrate loss principle in the mental accounting theory proposed by Thaler and Johnson (1990). The integrate loss means that individuals prefer to integrate two losses rather than segregate them. The reason is the utility of integrate losses is higher than that of segregate losses, since the loss function is convex. The principle of integrated loss not only has been demonstrated

Table 5.3: Panel Probit Regressions of Simultaneous Disclosure on Both Bad News

	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
ABQBNews	0.505***	0.061***	0.452***	0.056***	0.451***	0.057***	0.449***	0.055***
	(0.085)	(0.012)	(0.087)	(0.012)	(0.087)	(0.012)	(0.091)	(0.012)
SIZE			-0.199***	-0.024***	-0.193***	-0.025***	-0.269***	-0.033***
			(0.067)	(0.009)	(0.067)	(0.009)	(0.073)	(0.009)
ME/BE			-0.036**	-0.004**	-0.035**	-0.004**	-0.015	-0.002
			(0.015)	(0.002)	(0.015)	(0.002)	(0.018)	(0.002)
LEV			1.134	0.140	0.937	0.119	1.241	0.151
			(0.916)	(0.113)	(0.917)	(0.116)	(0.943)	(0.115)
MAR			-0.035	-0.004	-0.034	-0.004	0.016	0.002
			(0.195)	(0.024)	(0.193)	(0.024)	(0.199)	(0.024)
AGE			0.029***	0.004**	0.025**	0.003**	0.039***	0.005***
			(0.011)	(0.001)	(0.012)	(0.002)	(0.012)	(0.002)
INDU_DUM					yes	yes	yes	yes
Y_DUM							yes	yes
Constant	-1.688***		-0.414		0.008		0.500	
	(0.085)		(0.503)		(1.194)		(1.247)	
Log likelihood	-1144.009		-1135.931		-1129.293		-1113.526	
N	3029	3029	3029	3029	3029	3029	3029	3029

SimDis indicates simultaneous disclosure. *SimDis*=1, if a firm releases its annual report and subsequent first quarterly report on the same day, otherwise, 0. If the actual disclosure date of annual report is later than its first booking date, *ABQBNews*=1, if firm news is bad in both annual report and subsequent first quarterly report, and 0, otherwise. Firm size is briefly expressed as *SIZE*, which is the log of total asset. *ME/BE* is the abbreviation of market to book ratio, which is calculated as market capitalization divided by total common equity. *LEV* means financial leverage, which is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is a dummy variables. If a firm belongs to an industry , I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *Y_Dum*, year dummies, is dummy variable as well. If a firm belongs to this year, I define it to be 1, otherwise, 0. All variables in this table are omitted the outliers (I delete the data which is higher than 99% and lower than 1%). I also delete all illegal disclosure data (the firms whose disclosure time exceed the legal period) and the data who is a new listed firm (that is *AGE* equals to 1). Significance levels : *: 10%, **: 5%, ***: 1%.

in an experiment of Thaler and Johnson (1990), but also has been applied in financial market, for example, Lim (2006) documents that investors are likely to sell multiple stocks when they realize losses than gains.

Releasing two bad news simultaneously is also related to the big bath theory in accounting. The big bath theory suggests that if this period's earnings are low, managers tend to make it worse and let the next period's earnings seem better. However, big bath theory mostly focuses on earnings manipulations. For instance, Watts and Zimmerman (1986) propose that managers tend to use big bath to reduce reported earnings further in a way that future earnings and bonuses can be improved and Bleakley (1995) suggest managers could pack losses into one quarter so that the past and future earnings look better than they really are.

5.5.2 Both Good News and Separate Disclosure

Table 5.4 reports the regression results of the relationship between simultaneous disclosure, *SimDis*, and both good news, *AGQGNews*, and other control variables. As the same as Table 5.3, I report four regression models in this table with model 4 includes all the control variables. The model is as followings:

$$Pr(SimDis = 1|x) = \Phi(\alpha + \beta_1 AGQGNews + \beta_2 size + \beta_3 ME/BE + \beta_4 leverage + \beta_5 market + \beta_6 age + \beta_8 IDum + \beta_8 YDum + \varepsilon) \quad Equation\ (2)$$

Consistent with H_2, in all model specifications, the coefficients for *AGQGNews* are significantly negative at 1% significance levels suggesting managers are likely to release annual report and subsequent first quarterly report separately, if the annual

Table 5.4: Panel Probit Regressions of Simultaneous Disclosure on Both Good News

	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
AGQGNews	-0.365***	-0.045***	-0.299***	-0.038***	-0.298***	-0.039***	-0.285***	-0.035***
	(0.081)	(0.011)	(0.084)	(0.011)	(0.084)	(0.011)	(0.087)	(0.011)
SIZE			-0.195***	-0.025***	-0.190***	-0.025***	-0.259***	-0.032***
			(0.066)	(0.009)	(0.066)	(0.009)	(0.072)	(0.009)
ME/BE			-0.038**	-0.005**	-0.037**	-0.005**	-0.013	-0.002
			(0.015)	(0.002)	(0.015)	(0.002)	(0.018)	(0.002)
LEV			1.256	0.159	1.067	0.139	1.339	0.167
			(0.906)	(0.115)	(0.906)	(0.119)	(0.933)	(0.116)
MAR			-0.058	-0.007	-0.056	-0.007	-0.007	-0.001
			(0.192)	(0.024)	(0.190)	(0.025)	(0.196)	(0.024)
AGE			0.028**	0.004**	0.024**	0.003**	0.038***	0.005***
			(0.011)	(0.001)	(0.011)	(0.002)	(0.012)	(0.002)
INDU_DUM					yes	yes	yes	yes
Y_DUM							yes	yes
Constant	-1.399***		-0.171		0.157		0.582	
	(0.079)		(0.492)		(1.158)		(1.208)	
Log likelihood	-1151.210		-1142.930		-1136.361		-1120.385	
N	3029	3029	3029	3029	3029	3029	3029	3029

SimDis indicates simultaneous disclosure. *SimDis*=1, if a firm releases its annual report and subsequent first quarterly report on the same day, otherwise, 0. *AGQGNews*=1, if firm's news is good in both annual report and subsequent first quarterly report, and 0, otherwise. Firm size is briefly expressed as *SIZE*, which is the log of total asset. *ME/BE* is the abbreviation of market to book ratio, which is calculated as market capitalization divided by total common equity. *LEV* means financial leverage, which is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is a dummy variables. If a firm belongs to an industry, I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *Y_DUM*, year dummies, is dummy variable as well. If a firm belongs to this year, I define it to be 1, otherwise, 0. All variables in this table are omitted the outliers (I delete the data which is higher than 99% and lower than 1%). I also delete all illegal disclosure data (the firms whose disclosure time exceed the legal period) and the data who is a new listed firm (that is *AGE* equals to 1). Significance levels : *: 10%, **: 5%, ***: 1%.

report and the subsequent first quarterly report both reveal good news. As can been seem in the marginal effect columns of Table 5.4, if both annual report and subsequent first quarter report reveal good news, the likelihood of simultaneous disclosure decreased by 0.035 to 0.045.

This finding is in line with the segregate gains principle in mental accounting theory. It suggests that individuals are more likely to segregate gains rather than integrate gains. The reason is the utility of segregate gains is higher than the utility of integrate gains, since the gain function of individuals tends to be concave. The integrated gains principle has also been found in financial market. For instance, Shefrin and Statman (1985) find evidence that brokers tend to make covered calls more attractive to their clients by segregating gains. In this study, managers utilize the principle of segregating gains to cater the preference of investors in order to make the stock price related consequences after financial report disclosures seem better.

5.5.3 Annual Good News and Quarter Bad News and Separate Disclosure

Table 5.5 shows the results of the regression analysis of simultaneous disclosure, *SimDis*, on good annual and bad quarter news, *AGQBNews* and other control variables. The regression of model 4 in Table 5.5 has been shown as the following:

$$Pr(SimDis = 1|x) = \Phi(\alpha + \beta_1 AGQBNews + \beta_2 size + \beta_3 ME/BE + \beta_4 leverage + \beta_5 market + \beta_6 age + \beta_8 IDum + \beta_8 YDum + \varepsilon) \quad Equation\ (3)$$

Table 5.5: Panel Probit Regression of Simultaneous Disclosure on Annual Good News and Quarter Bad News

	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
AGQBNews	-0.163*	-0.020**	-0.164*	-0.021**	-0.164*	-0.021**	-0.204**	-0.025**
	(0.093)	(0.012)	(0.093)	(0.012)	(0.093)	(0.012)	(0.096)	(0.012)
SIZE			-0.219***	-0.028***	-0.216***	-0.028***	-0.276***	-0.034***
			(0.066)	(0.009)	(0.066)	(0.009)	(0.072)	(0.009)
ME/BE			-0.053***	-0.007***	-0.052***	-0.007***	-0.022	-0.003
			(0.015)	(0.002)	(0.015)	(0.002)	(0.018)	(0.002)
LEV			1.320	0.166	1.099	0.142	1.294	0.161
			(0.910)	(0.115)	(0.910)	(0.118)	(0.936)	(0.116)
MAR			-0.050	-0.006	-0.046	-0.006	0.007	0.001
			(0.192)	(0.024)	(0.190)	(0.025)	(0.196)	(0.024)
AGE			0.030***	0.004***	0.026**	0.003**	0.040***	0.005***
			(0.011)	(0.001)	(0.011)	(0.002)	(0.012)	(0.002)
INDU_DUM					yes	yes	yes	yes
Y_DUM							yes	yes
Constant	-1.498***		-0.033		0.420		0.784	
	(0.077)		(0.492)		(1.159)		(1.211)	
Log likelihood								
N	3029	3029	3029	3029	3029	3029	3029	3029

SimDis indicates simultaneous disclosure. *SimDis*=1, if a firm releases its annual report and subsequent first quarterly report on the same day, otherwise, 0. *AGQBNews*=1, if annual report reveals good news and subsequent first quarterly report reveals bad news, and 0, otherwise. Firm size is briefly expressed as *SIZE*, which is the log of total asset. *ME/BE* is the abbreviation of market to book ratio, which is calculated as market capitalization divided by total common equity. *LEV* means financial leverage, which is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is a dummy variables. If a firm belongs to an industry , I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *Y_Dum*, year dummies, is dummy variable as well. If a firm belongs to this year, I define it to be 1, otherwise, 0. All variables in this table are omitted the outliers (I delete the data which is higher than 99% and lower than 1%). I also delete all illegal disclosure data (the firms whose disclosure time exceed the legal period) and the data who is a new listed firm (that is *AGE* equals to 1). Significance levels : *: 10%, **: 5%, ***: 1%.

In line with H_3, the coefficients of good annual and bad quarter news, are significantly negative in four model specifications. The results suggest that, if annual report reveals good news and the following first quarterly report conveys bad news, the probability of managers to release two reports separately increases by 0.020 to 0.025. This suggests that managers tend to release two reports separately when the annual report reveals good news and following first quarterly report reveals bad news. A possible explanation is that the good annual and bad quarter news indicates the worsening of the firms for investors. Managers might think the separate disclosure of two reports could lower the probability of investors observing this deterioration.

5.5.4 Annual Bad News and Quarter Good News and Simultaneous Disclosure

Table 5.6 reports the regressions of simultaneous disclosure, *SimDis*, on bad annual news and subsequent good quarter news, *ABQGNews*, controlling the common accounting information variables. The regression of model 4 in Table 5.6 has been shown as the following:

$$Pr(SimDis = 1|x) = \Phi(\alpha + \beta_1 ABQGNews + \beta_2 size + \beta_3 ME/BE + \beta_4 leverage + \beta_5 market + \beta_6 age + \beta_8 IDum + \beta_8 YDum + \varepsilon) \quad Equation\ (4)$$

As shown in Table 5.6, simultaneous disclosure is positively related to bad annual and good quarter news in all model specifications as indicated by positive coefficients for *ABQGNews*, although these coefficients are not significantly different from zero. This suggests that managers tend to release annual reports and subsequent first

quarterly reports together, if the firm news is good in the annual report and bad in the subsequent first quarterly report. The marginal effects in Table 5.6 show, if the annual report reveals bad news and the following first quarterly report conveys good news, the likelihood of simultaneous disclosure increases by 0.004 to 0.009. It is likely that a bad news annual report and good news first quarter news signifies favorable firm growth. Moreover, the simultaneous disclosure of two reports could make investors observe the direction of the firm growth more distinctly, as they can compare the two firm news directly. As a consequence, managers may be more likely to release them simultaneously, if the annual report reveals bad news and the subsequent first quarterly report contains good news.

The *AGQBNews* coefficients were significantly negative whereas the *ABQGNews* coefficients were not significantly different from zero which could be due to the negativity bias. The negativity bias suggests, even when of equal intensity, negative events tend to have a far greater impact on individuals than positive events. This study supports this with a potential negative event, the annual good quarter bad news, than a potential positive event, the annual bad and quarter good news. In Table 5.3 and Table 5.4, the absolute value of both bad news marginal effect is greater than the absolute value of both good news marginal effects also suggesting a stronger reaction to a negative events.

In Table 5.3, 5.4, 5.5, and 5.6, I also find that firm size is negatively associated to simultaneous disclosure at 5% significance levels in all model specifications. This finding is close to the prediction of Atiase et al. (1989). Atiase et al. (1989) suggest that the larger the firm, the greater the outside interest and consequently, the greater pressure on firms to release report late. Since simultaneous disclosure could attract

Table 5.6: Panel Probit Regressions of Simultaneous Disclosure on Annual Bad News and First Quarterly Good News

	m1		m2		m3		m4	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
ABQGNews	0.075	0.009	0.034	0.004	0.030	0.004	0.071	0.009
	(0.098)	(0.012)	(0.099)	(0.013)	(0.099)	(0.013)	(0.101)	(0.013)
SIZE			-0.219***	-0.028***	-0.216***	-0.028***	-0.272***	-0.034***
			(0.066)	(0.009)	(0.066)	(0.009)	(0.072)	(0.009)
ME/BE			-0.053***	-0.007***	-0.052***	-0.007***	-0.021	-0.003
			(0.015)	(0.002)	(0.015)	(0.002)	(0.018)	(0.002)
LEV			1.378	0.175	1.161	0.151	1.356	0.169
			(0.906)	(0.116)	(0.907)	(0.118)	(0.932)	(0.117)
MAR			-0.055	-0.007	-0.051	-0.007	-0.003	-0.003
			(0.191)	(0.024)	(0.189)	(0.025)	(0.195)	(0.024)
AGE			0.030***	0.004**	0.026**	0.003***	0.039***	0.005***
			(0.011)	(0.001)	(0.011)	(0.002)	(0.012)	(0.002)
INDU_DUM					yes	yes	yes	yes
Y_Dum							yes	yes
Constant	-1.537***		-0.065		0.379		0.684	
	(0.077)		(0.494)		(1.156)		(1.204)	
Log likelihood	-1161.506		-1149.378		-1142.730		-1125.631	
N	3029		3029		3029		3029	

SimDis indicates simultaneous disclosure. *SimDis*=1, if a firm releases its annual report and subsequent first quarterly report on the same day, otherwise, 0. *ABQGNews*=1 if annual report reveals bad news and subsequent first quarterly report reveals good news, and 0, otherwise. Firm size is briefly expressed as *SIZE*, which is the log of total asset. *ME/BE* is the abbreviation of market to book ratio, which is calculated as market capitalization divided by total common equity. *LEV* means financial leverage, which is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is a dummy variables. If a firm belongs to an industry , I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *Y_Dum*, year dummies, is dummy variable as well. If a firm belongs to this year, I define it to be 1, otherwise, 0. All variables in this table are omitted the outliers (I delete the data which is higher than 99% and lower than 1%). I also delete all illegal disclosure data (the firms whose disclosure time exceed the legal period) and the data who is a new listed firm (that is *AGE* equals to 1). Significance levels : *: 10%, **: 5%, ***: 1%.

investors more attention than separate disclosure, managers of large firms may be likely to release two reports separately rather than simultaneously.

In all model specifications of these four tables, the listed year is positively related to simultaneous disclosure at 1% or 5% significance levels. It suggests that longer listed firms have more propensity to release annual report and subsequent first quarterly report simultaneously than shorter listed firms. Additionally, in first three model specifications, market to book ratio, *ME/BE* is negatively related to *SimDis*, simultaneous disclosure. However, their relationship becomes insignificant after controlling for year dummies.

5.6 Additional Analyses

In this section, I conduct further tests to examine whether managers amend their first booking disclosure dates of annual reports and first quarterly reports to achieve simultaneous or separate disclosure.

In this section, in order to test H_5 and H_6, I first examine the relationship between the annual report delay, *ADelay*, and simultaneous disclosure, *SimDis*. Then, I test the association between *QDelay*, first quarterly report delay and *SimDis*, simultaneous disclosure. The results have been shown in Table 5.6. The former four columns report the first relation and the later four columns show the second relation. The regressions of model 2 and model 4 are expressed as the followings

$$Pr(ADelay = 1|x) = \Phi(\alpha + \beta_1 SimDis + \beta_2 size + \beta_3 ME/BE + \beta_4 leverage + \beta_5 market + \beta_6 age + \beta_8 IDum + \beta_8 YDum + \varepsilon) \quad Equation\ (5)$$

$$Pr(FDelay = 1|x) = \Phi(\alpha + \beta_1 SimDis + \beta_2 size + \beta_3 ME/BE + \beta_4 leverage + \beta_5 market + \beta_6 age + \beta_8 IDum + \beta_8 YDum + \varepsilon) \quad Equation\ (6)$$

I find that the *ADelay* is positively related to but the *QDelay* is negatively associated to the *SimDis* at 1% significance levels. Consistent with my hypotheses, in order to achieve the simultaneous disclosure, managers are inclined to delay the first booking dates of annual report but advance the first booking dates of subsequent first quarterly report, conversely, in order to achieve the separate disclosure, managers are likely to advance the first booking dates of annual report but defer the first booking dates of subsequent first quarterly report.

In Table 5.7, I also find that, in all the model specifications, the coefficients of *SIZE* are negative on both *ADelay* and *QDelay* at 1% to 5% significance levels. It supports the prediction proposed by Atiase et al. (1989), which demonstrates that large firms have lower probability to make their announcement late.

Moreover, the coefficients of *MAR* are positive on both *ADelay* and *QDelay* on 1% significance levels which suggests that the Shanghai stock exchange listed firms are more likely to postpone their first booking dates than the Shenzhen stock exchange listed firms. Since more firms have been listed in Shanghai stock exchange, the disclosure of quarterly report should be more crowded on the Shanghai stock exchange than Shenzhen stock exchange. According to the finding of Wang et al. (2008), in China, most firms like to cluster to release their quarterly reports around the second half of the legal disclosure period. If managers can not book late disclosure dates when they book the first booking dates of quarterly reports, they can later delay their disclosure dates of quarterly reports by amending the first booking dates of

Table 5.7: Panel Probit Regressions of Booking Delay on Simultaneous Disclosure

	Annual Booking Delay				Quarter Booking Delay			
	m1		m2		m3		m4	
SimDis	0.979***	0.047***	1.288***	0.424***	-1.138***	-0.318***	-1.213***	-0.298***
	(0.143)	0.021	(0.222)	(0.061)	(0.380)	(0.064)	(0.387)	(0.062)
NEWS			-0.250*	-0.082*			-0.369	-0.091
			(0.142)	(0.046)			(0.256)	(0.060)
SIZE			-0.216**	-0.071**			-0.364**	-0.089***
			(0.091)	(0.029)			(0.168)	(0.035)
ME/BE			-0.018	-0.006			0.104	0.025
			(0.027)	(0.009)			(0.057)	(0.014)
LEV			2.043	0.672			8.753***	2.150***
			(1.345)	(0.435)			(3.131)	(0.608)
MAR			0.938***	0.308***			2.509***	0.616***
			(0.279)	(0.086)			(0.879)	(0.172)
AGE			-0.009	-0.003			0.009	0.002
			(0.016)	(0.005)			(0.029)	(0.007)
INDU_DUM			yes	yes			yes	yes
Y_DUM			yes	yes			yes	yes
Constant	-0.120**		1.498*		1.073***		-1.003	
	(0.055)		(0.895)		(0.287)		(1.573)	
Log likelihood	-412.842		-382.285		-146.814		-122.871	
N	633	633	633	633	257	257	257	257

SimDis indicates simultaneous disclosure. SimDis=1, if a firm releases its annual report and subsequent first quarterly report on the same day, otherwise, 0. If actual disclosure date of annual report is later than its first booking date, *ADelay*=1, and 0 otherwise. It is the same for *QDelay*, quarter book delay. If the actual disclosure date of first quarterly report is later than its first booking date, *QDelay*=1, and 0, otherwise. Firm size is briefly expressed as *size*, which is the log of total asset. *ME/BE* is the abbreviation of market to book ratio, which is calculated as market capitalization divided by total common equity. *LEV* means financial leverage, which is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. Age means the year of a firm has been a listed firm. *INDU_DUM*, industry dummies, is a dummy variables. If a firm belongs to an industry , I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *Y_Dum*, year dummies, is dummy variable as well. If a firm belongs to this year, I define it to be 1, otherwise, 0. All variables in this table are omitted the outliers (I delete the data which is higher than 99% and lower than 1%). I also delete all illegal disclosure data (the firms whose disclosure time exceed the legal period) and the data who is a new listed firm (that is *AGE* equals to 1). Significance levels : *: 10%, **: 5%, ***: 1%.

their quarterly reports if space for late disclosure subsequently become available.

The regression results of model 2 show that *NEWS* is negative related to *ADelay*, annual report delay at 10% significance levels. This is in line with a well-known finding of previous literature: the good news early and bad news late which has been demonstrated by a great many researchers such as Lurie and Pastena (1975); Kross (1981); and Givoly and Palmon (1982). (1) Givoly and Palmon (1982) interpret it as the stock price reactions tend to be more pronounced for early announcements than late announcements. Several studies further provide some possible reasons for the late disclosure. For example, (2) Graham et al. (2005) suggest that managers need more time to check and study the information. (3) Trueman (1990) find delay of disclosure could enable managers to find ways to undo the news through accruals management; prepare responses to criticism; and plan to reverse the poor performance. (4) Begley and Fischer (1998) Patell and Wolfson (1982), and Chen and Mohan (1994) state that managers could delay disclosures in order to complete contract negotiations at more favorable term prior to this announcement or give less-informed investors more time to anticipate and digest complex information.

The relation between *LEV*, financial leverage, and *QDelay*, quarter booking delay, is significantly positive in model 4. It shows that, the higher the financial leverage for the firms, the higher the probability of firms delaying their first booking dates of the first quarterly report. The financial leverage ratio is a measurement of how much assets firms hold relative to their equity. High financial leverage ratio suggests firms are using a high proportion debt and other liabilities to finance their assets may indicate that these firms are riskier and more likely to experience technical default than firms with lower financial leverage. The probability of technical default

is higher if a firm has has a high percentage of debt and is more likely to have covenants in its debt contracts which may relate to balance sheet items. If a firm is in danger of violating one of these covenants, it could provide an incentive to delay the publication of their accounts.

5.7 Conclusion

In this chapter, using a setting which is unique to China, I empirically examine whether the nature of firm news influences the decisions of managers on the release sequence of their annual report and subsequent first quarterly report disclosures. I find that managers tend to publish two reports simultaneously if both of them reveal bad news but separately if both reveal good news.

When two reports reveal conflicting information, the results suggest that managers tend to make separate disclosure if the annual report reveals good news and the subsequent first quarterly report reveals bad news, whereas managers are likely to make simultaneous disclosure if the annual report reveals bad news and the subsequent first quarterly report reveals good news. However, because of the negativity bias, the latter relationship is not significant from zero.

Additionally, in hoping of making the simultaneous disclosure, managers tend to delay the first booking dates of annual reports and advance those of first quarterly reports. Conversely, in order to make separate disclosure, managers are likely to advance the first booking dates of annual reports and delay those of first quarterly reports.

Chapter 6

Investor Sentiment and Strategic Timing of Quarterly Report Disclosure

6.1 Introduction

Previous research investigates the effects of investor sentiment on corporate decisions, such as capital investments, dividend payments, stock splits and corporate name changes (Brown et al., 2012). However, as Baker and Wurgler (2007) states, there is very few evidence on the relation between investor sentiment and disclosure decision. Since the timeliness of financial information disclosure is an important aspect of disclosure decision (Dyer and McHugh, 1975), I address this issue by testing the association between investor sentiment and strategic timing of quarterly report

disclosure.

Baker and Wurgler (2007) define investor sentiment as "...a belief about future cash flows and investment risks that is not justified by the facts at hand". A key finding is that when sentiment is high, investors are optimistic and tend to overvalue stocks, whereas when sentiment is low, they are pessimistic and likely to undervalue stocks. Mian and Sankaraguruswamy (2012) extend this misvaluation argument to the field of quarterly report disclosure and find that either for good firm news or bad firm news, the stock prices react more favorable during the periods of high sentiment periods than the periods of low sentiment. In light of this argument, I hypothesize that, in order to obtain higher stock prices, when sentiment is high, managers are likely to announce their earnings early as a decline in optimism might occur if they delay, conversely, they prefer to delay quarterly report disclosures during low sentiment periods in the hope that investor sentiment may improve.

According to the paper of Baker and Wurgler (2007), because of the high proportion of retail investor [1] and "T+1 trading rule" [2], the Chinese stock market is a natural experimental for the study of investor sentiment. Therefore, in this chapter, I utilize Chinese data to investigate the relationship between investor sentiment and the strategic timing of quarterly report disclosure.

Depart from prior researchers who use a single composite measurement of investor sentiment [3], instead, I use the postulate components directly to reveal the differences

[1] Retail investors tend to be irrational and are more likely to be subject to investor sentiment.

[2] "T+1 trading rule" is a specific short sell constrain in China which prevents investors from selling stocks bought on the same day.

[3] Utilizing the first principal component, Baker and Wurgler (2006) construct one single index of sentiment by combining six sentiment proxies (NYSE turnover, premia on dividend-paying stocks, the close-end fund discount, the numbers of IPOs, the first-day returns on IPOs, and equity share

in the effect of investor sentiment, depending on how sentiment is measured, and to avoid the problem of replication over time that tends to occur when the first principal components are used to estimate a single index. In the primary findings section, I utilize consumer confidence index to proxy investor sentiment. In order to check the robustness of investor sentiment effects, following Xu and Green (2013), I apply additional three investor sentiment proxies, turnover, advance/decline ratio and dividend premium, and test their relationships with the strategic timing of quarterly report disclosure in my robustness check section.

Following Chambers and Penman (1984), two measurements are employed to define the timeliness of quarterly report disclosure. Firstly, the reporting lag is the difference between the actual disclosure date and the first date of the legal disclosure period divided by the length of legal disclosure period since the length of legal disclosure period differs across four quarters in China[4]. Secondly, the unexpected reporting lag is the difference between quarterly report disclosure dates of the same quarter in two successive years.

Controlling the common accounting variables[5], my findings indeed provide some support for the hypotheses that early quarterly report disclosure tends to occur in the presence of high sentiment whereas late quarterly report disclosure appears to occur if sentiment is low [6]. Additionally, since the stock price sensitivity to

in new issues).

[4]The legal disclosure period for first quarter is from 1st April to 30th April; second quarter is from 1st July to 31th August, third quarter is from 1st October to 31st October and the fourth quarter is from 1st January to 30th April. In addition, in China, the fourth quarterly report is the annual report.

[5]The common accounting variables include firm's earnings news, size, market to book ratio, financial leverage, listed year, industry dummies, year and quarter dummies.

[6]Utilizing the propensity score matching, I also document that, as in U.S., in a context of China, despite the nature of earnings news, the cumulative abnormal return around the quarterly report

quarterly report disclosure is significantly stronger for bad earnings news than for good earnings news (Mian and Sankaraguruswamy, 2012), my results further suggest that, the effect of investor sentiment on timeliness of quarterly report disclosure is stronger for firms with bad earnings news than firms with good earnings news, who appears to be that firms with bad earnings news (1) release earnings earlier than firms with good earnings news when sentiment is high and (2) delay more than firms with good earnings news when market sentiment is low. This finding is also consistent with the notion of negativity bias proposed by Baumeister et al. (2001). The negativity bias suggests that the negative events have stronger impact on individuals than the positive events of the same type. In this study, for managers, the bad earnings news is negative event whereas the good earnings news is positive earnings news, Thereby the managers react more strongly to the bad earnings news than the good earnings news.

This chapter is the first to the author knowledge to examine the association between investor sentiment and the timeliness of quarterly report disclosure. It enriches the literature and provides practical implications for quarterly report disclosure standard setters and regulators. The chapter is organized as follows. Section 2 reviews the relevant literature, Section 3 shows the institutional background; Section 4 describes the research design and data; Section 5 discusses the empirical results; Section 6 presents the robustness check; and Section 7 concludes.

disclosure is higher during the high sentiment period than the period of low sentiment.

6.2 Literature Review

A central feature of the behavioural finance literature is the existence of investor sentiment (Bergman and Roychowdhury, 2008). According to De Long et al. (1990), Morck et al. (1990) amongst others, investor sentiment is the investors' beliefs about future firm's value which deviates from fundamental information. More broadly, it is a collective mix of cognitive and emotional biases which affects investors' expectations on firm's future performance and/or their propensity to speculate Schiller (2000); Nofsinger (2005); Livnat and Petrovits (2009).

Although investor sentiment is not straightforward to measure, prior literature has identified various proxies for it. As discussed by Baker and Wurgler (2006), the common proxies of investor sentiment covers investor surveys, investor mood, retail investor trades, mutual fund flows, trading volume, dividend premium, closed-end fund discount, open implied volatility, IPO first-day returns, IPO volume, equity issues over total new issues, and insider trading. Utilizing the first principal component analysis, Baker and Wurgler (2006) introduce an investor sentiment composite index by employing six proxies (NYSE turnover, premia on dividend-paying stocks, the close-end fund discount, the numbers of IPOs, the first-day returns on IPOs, and equity share in new issues). In order to remove the macroeconomic effects of proxies and retain the common component of investor sentiment, Baker and Wurgler (2006) regress each proxy on a set of macroeconomic indicators and use the residuals from these regressions to construct investor sentiment by average them together into an index. However, firstly, this sentiment index have replication problem over time that tends to occur when the first principal components are utilized to estimate a single

index. Secondly, it is likely to understate the predictive power of investor sentiment as the first principal component of six sentiment proxies may have a common noise component. After Baker and Wurgler (2006), Huang et al. (2013) propose a new sentiment index which is aligned for explaining stock expected returns by eliminating the noise component and they argue it has much greater power in predicting aggregate stock market than the Baker and Wurgler (2006) index.

Previous literature also suggests that investor sentiment has discernible and regular effects on the stock market (Brown and Cliff, 2005; Baker and Wurgler, 2006; Lemmon and Portniaguina, 2006; Kaplanski and Levy, 2010). Kuhnen and Knutson (2011) shows that positive sentiment induces investors to be more confident about their abilities of evaluating situations, and an increased willingness to take risks and overvalue stocks, whereas negative sentiment usually has the opposite effects. However, this contemporaneous misvaluation due to sentiment will reverse in time, thereby creating a negative association between investor sentiment and future risk-adjusted returns, especially for more speculative stocks. Mian and Sankaraguruswamy (2012) extend this misvaluation argument and test whether market-wide investor sentiment affects the stock price sensitivity to firm-specific firm news and find that the stock price sensitivity to good news is higher when sentiment is high than when it is low, conversely, the stock price sensitivity to bad news is higher when sentiment is low than when it is high. Livnat and Petrovits (2009) bring investor sentiment into the field of quarterly report disclosures as well. They examine the association between investor sentiment and post earnings announcement drift and show a greater upward stock price drift in response to extreme positive earnings surprises in low sentiment periods than during high sentiment periods and conversely, a

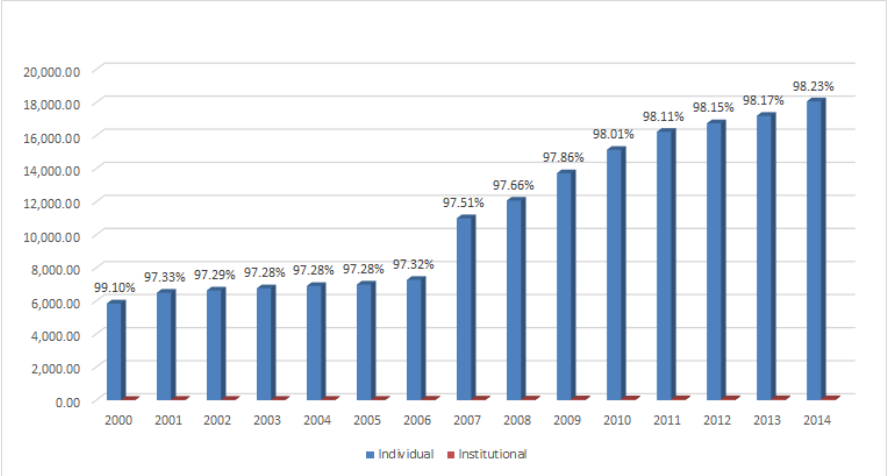
greater downward stock price drift is found in response to extreme negative earnings surprises in high sentiment periods rather than in low sentiment periods.

As the statement of Baker and Wurgler (2007), the empirical evidence on the influence of investor sentiment on corporate disclosure is quite limited, only three related studies provide early evidence of this relation. Rajgopal et al. (2007) find the evidence that managers cater for investor earnings sentiment by managing accruals upward (downward) during high (low) earnings sentiment periods. Bergman and Roychowdhury (2008) further suggest that during low sentiment periods, managers issue more long-horizon earnings forecasts in an effect to boost investor optimism, whereas during periods of high sentiment, managers reduce their long horizon forecasting activities in the hope of maintaining optimism on investors' earnings valuations. Brown et al. (2012) extend their studies by testing the influence of investor sentiment on managers' earnings announcement disclosure decisions and show that managers maximise the impact of the higher figure which they expect to be greater when investor sentiment is high. That is, managers have propensity to release an adjusted earnings metric, especially the one which exceeds GAAP earnings number; exclude higher levels of both recurring and nonrecurring expenses in calculating the pro forma earnings number; and emphasize the pro forma figure by replacing it more prominently within the earnings press release, as the level of investor sentiment increases. However, there is no evidence on the association between investor sentiment and timeliness of quarterly report disclosure, which is an indispensable corporate decision Dyer and McHugh (1975); Givoly and Palmon (1982); Zeghal (1984); Soltani (2002). Therefore, my study is to question this relation.

6.3 Institutional Background

According to the argument of Baker and Wurgler (2007), the retail investors are irrational and are influenced by investor sentiment. In Chinese stock markets, the retail investors are the largest investor group. As shown in Figure 1, in past 15 years, individual investors owned over 97% proportion of total number of accounts and it increases approximately positive year on year.

Figure 6.1: Retail Investor Proportion in A Share



Baker and Wurgler (2007) also states that investor sentiment is amplified by short sale constrain since it is costly and risky for rational arbitrageurs act against sentimental investors. The rational investors are subject to the limits of arbitrage from short time periods and thus they can not force the mispriced prices of assets to the fundamentals. The irrational investors will push the asset prices to be very high level in the periods of extraordinary sentiments and rational investors are forced to leave the market due to arbitrage limits, and consequently, the prices keep rising just before the crash which will eventually occur.

Chinese stock market conduct "T+1 trading rule" which requires investors to sell only stocks they purchased at least one day prior, and prohibits them from selling stocks bought the same day. This regime was launched in A share of both Shanghai Exchanges and Shenzhen Exchanges on 1st January 1995. In 2000, China's B share stock market abandoned the "T + 0 trading rule", and adopted the "T + 1 trading rule" as well.

Because of the high proportion of retail investor and "T+1 trading rule", the effects of sentiment should be great in Chinese stock market. Therefore, in this chapter, I utilize Chinese data to firstly question the relationship between investor sentiment and the strategic timing of quarterly report disclosure.

There was little regulation on firms' financial information disclosure in China prior to 1993, but on April 22, 1993, the State Council introduced formal financial report disclosure regulations namely *"The Provisional Regulations Governing the Issue and Trading of Shares"*, which require all listed firms to submit their audited annual reports to the China Securities Regulatory Commission (hereafter, CSRC) and the corresponding stock exchanges within 120 days of the end of the fiscal year. Further amendments followed on and China adopted a new accounting standard in 1994, which is very similar to international standards.

Following this regulation, Wang et al. (2008) state that most firms choose to release their financial reports around the end of legal disclosure period. In order to reduce this clustering, from 1997, CSRC implemented a quarterly report booking system, requiring all listed firms to book disclosure dates with CRSC near to the end of each fiscal quarter. Since 2001, both Shanghai and Shenzhen stock exchange markets

publish their listed firms' booking disclosure dates before the firms' actual disclosure dates (commonly around the beginning of each quarter/year's legal disclosure period). During each legal disclosure period, the Shanghai stock exchange market requires no more than 40 firms release their reports per day, while Shenzhen stock exchange market permits no more than 25 firms. The disclosures for each quarter are very similar. The difference between them is the length of the legal disclosure period, which is followed by each quarter. The legal disclosure period for the first quarter is from 1st April to 30th April; the second quarter is between 1st July and 31th August, the third quarter extends from 1st October though 31st October and the fourth quarter spans a period of time from 1st January to 30th April [7]. Since the legal disclosure period is various for each quarter, I scale the reporting lag by dividing the length of corresponding legal disclosure period in this chapter.

6.4 Research Design and Data

My sample covers 10 industries and extends from 2006 to 2012. Half firms are listed on the Shanghai stock exchanges and the remainders belong to the Shenzhen stock exchanges. Both A and B shares in the two stock markets are included.[8] In this study, the quarterly report disclosure dates are downloaded from the official websites of the Shanghai and Shenzhen stock exchanges and the rest of data in this study are collected from Bloomberg and Thomson One Banker.

[7] In China, the fourth quarterly report is the annual report.

[8] A shares can only be traded by domestic investors in the currency of Renminbi, except those foreigners who are Qualified Foreign Institutional Investor, whereas B share were initially available exclusively for foreign investors and traded in foreign currencies. Since 2001, Chinese citizens are allowed to invest B share, but they can only trade it after opening foreign currency accounts.

Since the stock prices around earnings announcement dates are higher on both good and bad firm news during the periods of high sentiment than the periods of low sentiment (Mian and Sankaraguruswamy, 2012), I hypothesize that, in the hope of boosting stock prices around quarterly report disclosure dates, no matter what the firm news is,

H_1: managers tend to announce firm news early when sentiment is high, whereas managers are likely to publish firm news late when sentiment is low.

Rather than using analyst forecast, I use seasonally differenced earnings changes as a proxy for firm news associated with each quarterly report disclosure. If the earnings per share in one quarter is greater than the earnings per share in the same quarter of last year, it is good firm news, otherwise, I define it as bad firm news.

My main proxy for investor sentiment is based on the monthly consumer confidence index constructed by the National Bureau of Statistics of China. It reflects the degree of optimism on the state of the economy that consumers are expressing through their activities of savings and spending. National Bureau of Statistics of China began to report China consumer confidence index since December 1997. It comprises consumer expectation and consumer satisfaction index. Hence, it shows both consumers' degree of satisfaction about the current economic situation and their expectations on the future economic trend. This index measures consumer confidence on a scale of 0 to 200, where 200 is extreme optimism, 0 indicates extreme pessimism and 100 means neutrality. As can be seen in Table 6.1, in my sample, the mean of consumer confidence index, 104, which is approximately neutral. Additionally, the difference between its minimum (99.3) and maximum values

(113.7) is 14.4.

Table 6.1: Summary Statistics

Variable	mean	std. dev.	min	max	obs
dependent variables					
RLAG	0.752	0.164	0.116	1	18273
UNRLAG	365.726	16.296	210	465	15725
independent variable					
CCI	104.838	4.559	99.3	113.7	18273
TURN	-0.079	0.373	-0.612	0.773	18273
ADRATIO	0.317	0.310	0.011	1.059	18273
DIPRE	-1.089	0.954	-2.990	-0.123	18273
control variables					
NEWS	0.583	0.493	0	1	17924
SIZE	7.626	0.943	5.724	10.228	18273
ME/BE	4.304	3.123	0.098	97.485	18273
LEV	62.256	59.165	0	319.517	18273
MAR	0.247	0.432	0	1	18273
AGE	12.500	5.177	2	22	18273

RLAG, reporting lag, is the difference between actual disclosure date of quarter report and the first date of legal quarter report disclosure period divided by the length of legal disclosure period. *UNRLAG*, unexpected reporting lag, means the difference of a firm's actual disclosure dates in same quarter of two successive years. *CCI* is monthly consumer confidence index. *TURN*, turnover, is the turnover ratio detrended by the past two-period moving average. *ADRATIO* means the ratio of number of advancing issues to declining issues. *DIPRE*, dividend premium, is the difference between the return on dividend-paying shares and that on on-paying shares. *NEWS*, firm news, is the index of a firm's earnings surprise. It is a dummy variable as well, *NEWS*=1, if firm's earnings surprise is bigger than 0, otherwise, 0. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is the abbreviation of market to book ratio. It is calculated as market capitalization divided by total common equity. *LEV* is measured as total debt divided by total equity. *MAR*, market category, is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE*, listed year, means the year of a firm has been a listed firm. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1).

In hope of checking the robustness of investor sentiment effects on timeliness of quarterly report disclosure, I also employ another three investor sentiment proxies: turnover, advance/decline ratio and dividend premium. The reason why I use them to check the robustness of investor sentiment effect is that Xu and Green (2013) use them to proxy investor sentiment and test their relations with the asset pricing respectively in the context of China.

Baker and Wurgler (2004) suggests that, turnover, or more generally liquidity, under a short sales constraint, it can be considered as a barometer of investor sentiment.

Low sentiment drives investors to quit the market as they can not short sell. On the other hand, high sentiment can be reflected in buy transactions. Hence, high liquidity is a symptom of high sentiment while low liquidity is a sign of low sentiment. Xu and Green (2013) define investor sentiment as positive (negative) if turnover increases (decrease) in comparison with some reference point. Thus, in this study, I measure turnover as turnover ratio detrended by the past two-period moving average.

The advance/decline ratio means the ratio of number of advancing issues to declining issues. It is a common technical indicator of investor sentiment, which captures the relative strength of the market in terms of buying-selling imbalance Brown and Cliff (2004); Xu and Green (2013). Following its definition in the paper of Xu and Green (2013), I measure the number of advancing issues as the total number of stocks whose closing prices at end-month above their beginning-month opening prices, whereas declines correspond to the number of stocks whose closing prices at end-month below their beginning-month opening prices. During the periods of high sentiment, more stocks close at higher prices as investors enter the market and are more willing to buy stocks at higher prices. Conversely, during low sentiment periods, more stocks close at lower prices as investors leave the market and are more willing to sell stocks. Therefore, if the advance/decline ratio values more than one, the market is bullish, on the contrary, if it is less than one, the market is bearish.

Rather than following the definition of dividend premium by Baker and Wurgler (2004), in this chapter, I choose measurement of dividend premium by Xu and Green (2013). According to their definition, dividend premium is the difference between the return on dividend-paying shares and that on on-paying shares. Baker and Wurgler (2004) suggests the dividend-paying stocks are on average those of larger,

more profitable firms with lower growth opportunities. When sentiment is negative, investors become more anxious about future. This increases time preference so that immediate income from dividend-payers is preferred over deferred income from capital gains from non-payers. This increases the price and reduces the return premium on dividend-payers. Thus, the dividend premium captures investor sentiment in the sense of time-dependent emotions: a decrease in the premium indicates increased caution and therefore a decrease in investor sentiment. Therefore, the investor sentiment is defined to be positive when the current dividend premium is larger than the past two-month moving average, and vice versa.

Following the study of Chambers and Penman (1984), I measure the timeliness of quarterly report disclosure as reporting lag and unexpected reporting lag. The former one is the difference between actual disclosure date of quarter report and the first date of legal quarter report disclosure period divided by the length of legal disclosure period. The reason why I use the normalized reporting lag is that the legal disclosure period for each quarter is different in China [9]. The latter one is defined as the difference of disclosure dates in same quarter of two successive years. As shown in Table 6.1, the mean of reporting lag is 0.752 and the standard deviation is 0.164. This is consistent with the findings of Wang et al. (2008), in China, firms cluster to release quarterly reports around the second half of the legal disclosure period. The maximum value of the reporting lag is 1 which means that the latest firm releases its quarterly reports on the last day of the legal disclosure period. The minimum value of the reporting lag is 0.116 which suggests the earliest firm releases its third

[9]The legal disclosure period for first quarter is from 1st April to 30th April; second quarter is from 1st July to 31th August, third quarter is from 1st October to 31st October and the fourth quarter is from 1st January to 30th April. In addition, in China, the fourth quarterly report will be the annual report.

quarter reports as early as 14 days[10] from the start of the legal disclosure period. The mean of the unexpected reporting lag is 366 days with a standard deviation of 16.296, suggesting that, on average, quarterly report disclosure dates appear to be similar year on year. However, I observe large differences ranging from a minimum of 210 days to a maximum of 465.

In this chapter, I use the panel regression to test H_1. The panel regression is developed with the analyses of panel data which includes multi-dimensions, most commonly, dimensions of both cross-sectional and time series. The reason I use it to analysis my data is that it is more complex and has three main advantages in comparison with "pure" time-series or cross-sectional regression such as Ordinary Least Squares regression. Firstly, it may solve the bias problem in terms of un-observed heterogeneity. Secondly, it shows the dynamics hardly detected by using cross-sectional regression. Thirdly, it reasonably increases the sample sizes. The details of panel regression presented in Chapter 4.

As I examine H_1, I control some common accounting information variables which includes firm's firm news, size, market to book ratio, financial leverage, market category, listed year, industry, year and quarter dummies. The definitions of these control variables have been shown in Chapter 4 and the correlations of all variables have been reported in Table 3 of Appendix. Controlling for these variables, the regression model for H_1 has been shown as the following

$$TEA_{i,t} = \alpha + \beta_1 SENT_{i,t^*} + \beta_2 NEWS_{i,t} + \beta_3 SIZE_{i,t-1} + \beta_4 ME/BE_{i,t-1} + \beta_5 LEV_{i,t-1} + \beta_6 MAR_{i,t} + \beta_8 AGE_{i,t} + \beta_8 IDum_{i,t} + \beta_9 YDum_{i,t} + \varepsilon_{i,t} \quad Equation\ (1)$$

[10]The minimum reporting lag belongs to quarter four data. As the legal disclosure period for quarter four is 120, the earliest firm releases its quarterly report as early as 14 days.

In equation (1), TEA means the timeliness of quarterly report disclosure. I use reporting lag and unexpected reporting to measure it. $SENT$ is the measurements of investor sentiment, which covers consumer confidence index, turnover, advance/decline ratio and dividend premium. The symbol of i in the regressions means the firm i, t means quarter t, and t^* is the last month of quarter t. For example, $NEWS_{i,t}$ is the firm news of firm i in quarter t. $SENT_{i,t^*}$ is the sentiment proxy in the last month of quarter t. The reason why I use the sentiment proxy in the last month of quarter t is that the CSRC requires firms to book a disclosure date with corresponding stock exchanges around the end of each fiscal quarter, therefore, the managers have to make decision during the last month of quarter i and their decision could be influenced by the investor sentiment in the last month of each quarter.

As the evidence of Mian and Sankaraguruswamy (2012) provided, the stock price sensitivity is significantly stronger for bad firm news than for good firm news, I further hypothesize that,

H_2: firms with bad firm news delay firm announcement more than the firms with good firm news when sentiment is low and make quarterly report disclosure earlier than the firms with good firm news when sentiment is high.

In order to test H_2, I divided my data into good firm news and bad firm news subsamples, to see whether the absolute value of investor sentiment coefficients is larger in bad news sub-sample than good firm news sub-sample.

As the same as H_1, I use panel regression to test H_2. Controlling for control variables, the regression model specification for H_2 has been expressed as the following

$$TEA_{i,t} = \alpha + \beta_1 SENT_{i,t^*} + \beta_2 SIZE_{i,t-1} + \beta_3 ME/BE_{i,t-1} + \beta_4 LEV_{i,t-1} + \beta_5 MAR_{i,t} + \beta_6 AGE_{i,t} + \beta_7 IDum_{i,t} + \beta_8 YDum_{i,t} + \varepsilon_{i,t} \quad \textit{Equation (2)}$$

The difference of the regression models between H_1 and H_2 is that independent variable of H_2 regression model specifications do not include firm news since I divide my data into good firm news and bad firm news sub-samples and test the effect of investor sentiment on timeliness of quarterly report disclosure in two samples respectively.

6.5 Empirical Results

In this section, I examine whether managers' decisions to release their firm news is affected by investor sentiment as hypothesized above. Primarily, the association between the consumer confidence index and the timeliness measurements, reporting lag and unexpected reporting lag, are examined. The data is then divided into two sub-samples based on their own firm news and test whether the firms with bad firm news respond more strongly to the consumer confidence index than firms with good firm news.

Table 6.2 presents the results of the panel regressions where reporting lag is the dependent variable and the consumer confidence index and other control variables are explanatory variables. Four model specifications (model 1 to model 4) are provided in the table. The first model only includes the consumer confidence index as the independent variable. The second model includes firm's firm news, size, market to book ratio, financial leverage, market and listed year as additional explanatory

variables, in order to examine the effect of controlling for these variables on the relationship between reporting lag and the consumer confidence index. As different industries may have distinct disclosure traits, the industry dummies are added in model 3. The only difference between m3 and m4 is that the latter one includes the dummy variables for the year and the quarter.

Table 6.2: Regressions of Reporting Lag on Consumer Confidence Index

	m1	m2	m3	m4
CCI	-1.530***	-1.432***	-1.419***	-2.661***
	(0.039)	(0.039)	(0.039)	(0.422)
NEWS		-0.036	-0.063	0.008
		(0.086)	(0.086)	(0.048)
SIZE		-0.114**	-0.085	0.084***
		(0.052)	(0.053)	(0.030)
ME/BE		-0.040***	-0.042***	-0.021
		(0.015)	(0.015)	(0.009)
LEV		0.004	0.060	-0.005
		(0.077)	(0.078)	(0.043)
MAR		2.539***	2.533***	-0.142**
		(0.108)	(0.109)	(0.062)
AGE		0.015	0.011	0.009
		(0.009)	(0.010)	(0.005)
INDU_DUM			yes	yes
YQ_DUM				yes
Constant	220.769***	210.649***	210.236***	326.625***
	(4.232)	(4.221)	(4.308)	(43.892)
R-squared	0.085	0.115	0.116	0.728
N	18273	17924	17924	17924

RLAG, reporting lag, is the difference between actual disclosure date of quarter report and the first date of legal quarter report disclosure period divided by the length of legal disclosure period. *CCI* is monthly consumer confidence index. *NEWS*, firm news, is the index of a firm's earnings surprise. Firm news=1, if firm's earnings surprise is bigger than 0, otherwise, 0. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is the abbreviation of market to book ratio. It is calculated as market capitalization divided by total common equity. *LEV*, financial leverage, is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM* is the category of industry. It is a dummy variable: if a firm belongs to a industry, I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is a dummy variable as well. If a firm belongs to a specific quarter in one year, I define it to be 1, otherwise, 0. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to make the coefficients seem nice, I multiply reporting lag by 100 and divided financial leverage by 100 in this table. Significance levels : *: 10%, **: 5%, ***: 1%.

As can be seen, in all model specifications, consumer confidence index, is significantly negatively related to the reporting lag. The coefficients on consumer confidence index implies that one-standard-deviation increase (decrease) in consumer confidence index is associated with 1.419 to 2.661 decrease (increase) of reporting lag ratio. It suggests that managers advance their quarterly report disclosure during periods of high sentiment, conversely, they delay their quarterly report disclosure during periods of low sentiment.

Continuing with the analysis of investor sentiment and timeliness of quarterly report disclosure, the association between consumer confidence index and the unexpected reporting lag are examined and results are shown in Table 6.3. The structure of Table 6.3 is similar to that of Table 6.2.

In all model specifications of Table 6.3, the consumer confidence index is significantly negatively related to unexpected reporting lag. The coefficients of consumer confidence index implies that a one-standard-deviation decreases in consumer confidence index is associated with a 1.405 to 2.840 days advance of quarterly report disclosure compared to the quarterly report disclosure dates for the same firm in the same quarter of last year.

The results from both Table 6.2 and Table 6.3 support the hypothesis that managers prefer to make quarterly report disclosure early when investor sentiment is high, whereas they are likely to release firm news late when sentiment is low. Intuitively, when investor sentiment is high, investors are optimistic and may be more willing to buy or less quick to sell stocks, in contrast, when investor sentiment is low, investors become pessimistic and more willing to sell them. According to this, managers might

Table 6.3: Regressions of Unexpected Reporting Lag on Consumer Confidence Index

	m1	m2	m3	m4
CCI	-1.405***	-1.290***	-1.263***	-2.840**
	(0.094)	(0.095)	(0.094)	(1.213)
NEWS		-1.314***	-1.274***	-1.163***
		(0.235)	(0.237)	(0.229)
SIZE		0.437***	0.340**	0.409***
		(0.146)	(0.148)	(0.144)
ME/BE		0.216***	0.205***	0.145***
		(0.040)	(0.040)	(0.039)
LEV		-0.004	-0.004**	-0.447**
		(0.002)	(0.002)	(0.211)
MAR		1.417***	1.484***	-0.187
		(0.308)	(0.309)	(0.307)
AGE		-0.102***	-0.109***	-0.115***
		(0.025)	(0.026)	(0.025)
INDU_DUM			yes	yes
YQ_DUM				yes
Constant	503.926***	489.636***	488.411***	629.459***
	(9.805)	(9.875)	(10.094)	(122.567)
R-squared	0.021	0.026	0.028	0.088
N	15725	15426	15426	15426

UNRLAG, unexpected reporting lag, means the difference of a firm's actual disclosure dates in two successive years. *CCI* is monthly consumer confidence index. *CCI* is monthly consumer confidence index. *NEWS*, firm news, is the index of a firm's earnings surprise. Firm news=1, if firm's earnings surprise is bigger than 0, otherwise, 0. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is the abbreviation of market to book ratio. It is calculated as market capitalization divided by total common equity. *FLEVE*, financial leverage, is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM* is the category of industry. It is a dummy variable: if a firm belongs to a industry, I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is a dummy variable as well. If a firm belongs to a specific quarter in one year, I define it to be 1, otherwise, 0. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to make the coefficients seem nice, I divided financial leverage by 100 in this table. Significance levels : *: 10%, **: 5%, ***: 1%.

think, whatever the firm news is, the stock market will react more favorable during high sentiment periods than during low sentiment periods and may announce firm news early to capture the potentially higher stock prices if their firm news is good and minimize a pessimistic market reaction if their firm news is bad. Conversely, when sentiment is relatively low, managers may choose to delay the release of firm news in hoping that sentiment may improve. In particular, as shown in Appendix, the results of event study suggest that as the same as the finding of Mian and Sankaraguruswamy (2012), in the context of China, despite the nature of firm news, the cumulative abnormal return is higher during high sentiment period than period of low sentiment.

In addition, Table 6.3 shows firm news and listed year, are constantly and negatively related to the unexpected reporting lag, while market to book ratio and firm size are constantly and positively associated to the unexpected reporting lag at 5% to 10% significance levels. The relation between firm news and unexpected reporting lag is consistent with the prediction of prior literature, good news early and bad news late hypothesis, (Lurie and Pastena, 1975; Kross, 1981; Chambers and Penman, 1984; Kross and Schroeder, 1984; Leventis and Weetman, 2004). (1) Givoly and Palmon (1982) interpret it as the stock price reactions are more pronounced for the early announcements than the late announcements. (2) Begley and Fischer (1998) and Chai and Tung (2002) explain the late release of bad news as the managers may be able to complete contract negotiations at more favorable terms prior to the disclosure of bad news. (3) Trueman (1990) provide other two managerial motives for delaying bad news. First, the late disclosures may enable managers benefit by having more time to find ways to undo the news through accruals management.

Second, managers might deliberately delay bad news until other industry-wide bad news discourses, in order to justify the potential deputational and litigation costs.

The result of market to book ratio supports that firms with high market to book ratio have more propensity to delay their quarterly report disclosures than the firms with low market to book ratio. According to the research of Loughran and Ritter (2000), market to book ratio is the identification whether a security is overvalued. Intuitively, as the firm news has been announced, the stock price of undervalued firm will increase back to fundamental, whereas the stock price of overvalued firm will decrease back to fundamental. Thus, the managers of undervalued firm release their quarterly reports early as they eager to make their stock price increase. It is true for the reverse. The managers of overvalued firm withhold their firm news since they do not want their stock price decreases.

The positive association between firm size and unexpected reporting lag is contrary to the findings of Dyer and McHugh (1975) and Atiase et al. (1989). The results of this chapter suggest that large firms tend to release late whereas small firms are likely to disclose early. Inconsistent with the prior findings of Chapter 4, the negative relationship between listed year and unexpected reporting lag suggesting that young listed firms have a propensity to announce firm news late, whereas old listed firms are likely to release them early.

Table 6.4 presents the regression results of the association between investor sentiment and timeliness of quarterly report disclosure in good firm news sub-sample and bad firm news sub-sample respectively. Controlling for common accounting information variables, column 1 and column 2 show the results of relation between

Table 6.4: Regressions of Reporting Lag and Unexpected Reporting Lag on Consumer Confidence Index in Different Sub-Samples

	Reporting Lag		Unexpected Reporting Lag	
	bad firm news	good firm news	bad firm news	good firm news
CCI	-2.702***	-2.662***	-4.666***	-1.006**
	(0.465)	(0.448)	(1.382)	(0.440)
SIZE	0.074	0.107***	0.437**	0.317
	(0.047)	(0.040)	(0.214)	(0.194)
ME/BE	-0.012	-0.029**	0.139**	0.114**
	(0.014)	(0.011)	(0.063)	(0.051)
LEV	-0.021	-0.001	0.060	-0.710**
	(0.069)	(0.058)	(0.318)	(0.281)
MAR	-0.228**	-0.074	-0.132	-0.132
	(0.100)	(0.083)	(0.462)	(0.410)
AGE	0.006	0.011	-0.118***	-0.102***
	(0.008)	(0.007)	(0.037)	(0.034)
INDU_DUM	yes	yes	yes	yes
YQ_DUM	yes	yes	yes	yes
Constant	338.940***	329.164***	814.588***	450.975***
	(48.412)	(46.582)	(139.540)	(45.978)
R-squared	0.734	0.729	0.118	0.070
N	7471	10453	6731	8695

RLAG, reporting lag, is the difference between actual disclosure date of quarter report and the first date of legal quarter report disclosure period divided by the length of legal disclosure period. *UNRLAG*, unexpected reporting lag, means the difference of a firm's actual disclosure dates in two successive years. *CCI* is monthly consumer confidence index. *CCI* is monthly consumer confidence index. *NEWS*, firm news, is the index of a firm's earnings surprise. Firm news=1, if firm's earnings surprise is bigger than 0, otherwise, 0. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is the abbreviation of market to book ratio. It is calculated as market capitalization divided by total common equity. *FLEVE*, financial leverage, is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM* is the category of industry. It is a dummy variable: if a firm belongs to a industry, I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is a dummy variable as well. If a firm belongs to a specific quarter in one year, I define it to be 1, otherwise, 0. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to make the coefficients seem nice, I multiply reporting lag index by 100 and divided financial leverage by 100 in this table. Significance levels : *: 10%, **: 5%, ***: 1%.

consumer confidence index and reporting lag, while column 3 and column 4 report the association between consumer confidence index and unexpected reporting lag. Furthermore, column 1 and column 3 show the regression results in bad firm news sub-sample while column 2 and column 4 report the regression results in good firm news sub-sample.

In two sub-samples, the consumer confidence index is significantly and negatively related to both reporting lag and unexpected reporting lag. This result further support the findings in the previous two tables. In the presence of either good firm news or bad firm news, managers have propensity to make quarterly reports early during the periods of high sentiment, whereas make them late during the low sentiment periods.

In addition, as can be seen in Table 6.4, the absolute values of consumer confidence index coefficients in the bad firm news sub-sample regressions are larger than they are in the good firm news sub-sample regressions. In particular, the absolute values of consumer confidence index coefficient in bad firm news sub-sample (4.666) is more than four times than the the absolute values of consumer confidence index coefficient in good firm news sub-sample (1.006), if the dependent variable is unexpected reporting lag. It suggests that the timeliness of quarterly report disclosure is especially more pronounced for the firms releasing bad firm news than good firm news. It appears that firms with bad firm news make quarterly report disclosure earlier than firms with good firm news when investor sentiment is high, whereas firms with bad firm news announce firm news later than firms with good firm news when investor sentiment is low. Since the effect of investor sentiment on stock price sensitivity is significantly stronger for the bad firm news than the good firm news

(Mian and Sankaraguruswamy, 2012), in order to make a better stock price related consequence of quarterly report disclosure, managers react more strongly to the bad firm news than the good firm news. Another possible interpretation for the finding could be the negativity bias. It is a concept proposed by Baumeister et al. (2001). They argue that, even when of equal intensity, negative experience, or fear of bad events has a far greater impact on individuals than do neutral experiences or even positive experiences. Individuals are thus biased toward behaving in a manner that will avoid negative experiences. As the bad firm news is a negative event and good firm news is a positive event, the bad firm news could influence managers' strategic timing behaviour more strongly than the good firm news. The negativity bias has been detected in the financial market in prior literature. For example, Akhtar et al. (2011) illustrates that, upon the announcement of bad sentiment news, the equity market experiences a significant negative announcement day effect, whereas upon the announcement of good sentiment news, the equity market experiences a no announcement day effect.

6.6 Robustness Check

In order to check the robustness of investor sentiment effects on the timeliness of quarterly report disclosure, I employ another three variables, turnover, advance/decline ratio and dividend premium, to proxy the investor sentiment in this section. All of them are widely used sentiment measurements in the prior literature, especially, they are the investor sentiment proxies which are applied to examine the effect of investor sentiment in a context of China by Xu and Green (2013).

Table 6.5: Regressions of Reporting Lag on Other Investor Sentiment Proxies

	turnover		A/D ratio		dividend premium	
	bad news	good news	bad news	good news	bad news	good news
SENT	-95.136***	-89.363***	-105.608***	-99.199***	-189.728***	-164.417***
	(18.252)	(18.256)	(20.261)	20.265)	(33.167)	(33.483)
SIZE	0.075	0.107***	0.075	0.107***	0.075	0.107***
	(0.047)	(0.040)	(0.047)	(0.040)	(0.047)	(0.040)
ME/BE	-0.011	-0.028**	-0.011	-0.028**	-0.011	-0.028**
	(0.014)	(0.011)	(0.014)	(0.011)	(0.014)	(0.011)
LEV	-0.021	-0.002	-0.021	-0.002	-0.021	-0.002
	(0.069)	(0.058)	(0.069)	(0.058)	(0.069)	(0.058)
MAR	-0.227**	-0.075	-0.227**	-0.075	-0.227**	-0.075
	(0.100)	(0.083)	(0.100)	(0.083)	(0.100)	(0.083)
AGE	0.006	0.011	0.006	0.011	0.006	0.011
	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)
INDU_DUM	yes	yes	yes	yes	yes	yes
YQ_DUM	yes	yes	yes	yes	yes	yes
Constant	79.936***	74.740***	95.943***	89.776***	-117.780***	-99.865***
	(6.295)	(6.116)	(9.023)	(8.832)	(31.016)	(31.466)
R-squared	0.734	0.729	0.734	0.729	0.734	0.729
N	7471	10453	7471	10453	7471	10453

RLAG, reporting lag, is the difference between actual disclosure date of quarter report and the first date of legal quarter report disclosure period divided by the length of legal disclosure period. *UNRLAG*, unexpected reporting lag, means the difference of a firm's actual disclosure dates in two successive years. *CCI* is monthly consumer confidence index. *CCI* is monthly consumer confidence index. *TURN*, turnover, is the turnover ratio detrended by the past two-period moving average. *ADRATIO* means the ratio of number of advancing issues to declining issues. *DIPRE*, dividend premium, is the difference between the return on dividend-paying shares and that on on-paying shares. *NEWS*, firm news, is the index of a firm's earnings surprise. Firm news=1, if firm's earnings surprise is bigger than 0, otherwise, 0. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is the abbreviation of market to book ratio. It is calculated as market capitalization divided by total common equity. *FLEVE*, financial leverage, is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM* is the category of industry. It is a dummy variable: if a firm belongs to a industry, I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is a dummy variable as well. If a firm belongs to a specific quarter in one year, I define it to be 1, otherwise, 0. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to make the coefficients seem nice, I multiply reporting lag by 100 and divided financial leverage by 100 in this table. Significance levels : *: 10%, **: 5%, ***: 1%.

Table 6.6: Regressions of Unexpected Reporting Lag on Other Investor Sentiment Proxies

	turnover		A/D ratio		dividend premium	
	bad news	good news	bad news	good news	bad news	good news
SENT	-42.364***	-31.102***	-64.850***	-47.610***	-213.372***	-123.360***
	(6.029)	(6.432)	(9.229)	(9.846)	(29.021)	(30.548)
SIZE	0.444**	0.318	0.444**	0.318	0.444**	0.318
	(0.214)	(0.194)	(0.214)	(0.194)	(0.214)	(0.194)
ME/BE	0.145**	0.114**	0.145**	0.114**	0.145**	0.114**
	(0.062)	(0.051)	(0.062)	(0.051)	(0.062)	(0.051)
LEV	0.037	-0.711**	0.037	-0.711**	0.037	-0.711**
	(0.317)	(0.282)	(0.317)	(0.282)	(0.317)	(0.282)
MAR	-0.089	-0.117	-0.089	-0.117	-0.089	-0.117
	(0.460)	(0.411)	(0.460)	(0.411)	(0.460)	(0.411)
AGE	-0.120***	-0.102***	-0.120***	-0.102***	-0.120***	-0.102***
	(0.037)	(0.034)	(0.037)	(0.034)	(0.037)	(0.034)
INDU_DUM	yes	yes	yes	yes	yes	yes
YQ_DUM	yes	yes	yes	yes	yes	yes
Constant	342.838***	355.398***	360.248***	368.180***	150.999***	241.366***
	(4.479)	(4.318)	(4.711)	(4.611)	(27.548)	(28.981)
R-squared	0.118	0.070	0.118	0.070	0.118	0.070
N	6731	8695	6731	8695	6731	8695

RLAG, reporting lag, is the difference between actual disclosure date of quarter report and the first date of legal quarter report disclosure period divided by the length of legal disclosure period. *UNRLAG*, unexpected reporting lag, means the difference of a firm's actual disclosure dates in two successive years. *CCI* is monthly consumer confidence index. *CCI* is monthly consumer confidence index. *TURN*, turnover, is the turnover ratio detrended by the past two-period moving average. *ADRATIO* means the ratio of number of advancing issues to declining issues. *DIPRE*, dividend premium, is the difference between the return on dividend-paying shares and that on on-paying shares. *NEWS*, firm news, is the index of a firm's earnings surprise. Firm news=1, if firm's earnings surprise is bigger than 0, otherwise, 0. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is the abbreviation of market to book ratio. It is calculated as market capitalization divided by total common equity. *FLEVE*, financial leverage, is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. *INDU_DUM* is the category of industry. It is a dummy variable: if a firm belongs to a industry, I define it to be 1, otherwise, 0. There are totally ten industry categories. It includes basic materials, industrials, consumer goods, health, consumer service, telecommunication, utilities, finance, technology, and oil and gas. *YQ_DUM* is a dummy variable as well. If a firm belongs to a specific quarter in one year, I define it to be 1, otherwise, 0. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1). In order to make the coefficients seem nice, I divided financial leverage by 100 in this table. Significance levels : *: 10%, **: 5%, ***: 1%.

Table 6.5 shows the regression results of turnover, advance/decline ratio or dividend premium on the reporting lag separately, and Table 6.6 reports these three sentiment proxies' associations with unexpected reporting lag respectively. The results in these two table support the evidence of investor sentiment effects on the timeliness of quarterly report disclosure in primary results section. That is, the association between investor sentiment and timeliness measurements is significantly negative. In addition, as reported in above section, I also find that the investor sentiment effects are more pronounced for the firms bad firm news than the firms with good firm news. During high sentiment periods, firms with bad firm news make quarterly report disclosure earlier than firms with good firm news, conversely, during low sentiment periods, they make quarterly report disclosure later than the firms with good firm news. Furthermore, consistent with the findings of Table 6.3, Table 6.6 shows that market book ratio is significantly positive related to, whereas listed year is significantly negative associated to unexpected reporting lag.

6.7 Conclusion

Prior research pays limited attention on how investor sentiment influences managers' disclosure decisions. I extend the research of Mian and Sankaraguruswamy (2012) and firstly test whether the investor sentiment affects the timeliness of quarterly report disclosure in the context of China.

My results suggest that the high investor sentiment triggers firms to release their firm news immediately, conversely, the low investor sentiment slows them. I also find that the effect of investor sentiment on the timeliness of quarterly report disclosure

is stronger for the firms with bad firm news than the firms with good firm news. It appears to be that the firms with bad firm news (1) announce quarterly report disclosure earlier than the firms with good firm news when investor sentiment is high and (2) delay their quarterly report disclosure more than the firms with good firm news when investor sentiment is low.

Chapter 7

Conclusion

This thesis employs financial and psychological theories to explain how and why managers choose when to disclose financial information. Focusing on unique Chinese settings, three distinct, but related studies broaden and deepen the literature examining the strategic timing of corporate disclosure.

7.1 Main Findings and Contributions

Based on the allowance of changing first booking disclosure dates of quarterly reports regulated by CRSC, the first study of this thesis investigates whether managers tend to amend the first booking disclosure dates of their quarterly reports according to the nature of their firm news revealed by quarterly reports.

Compared to the prior literature, the modification of first booking disclosure dates provides a more direct timeliness measurement of financial information disclosure,

that is, the advance, non-modification and delay of quarterly reports can be observed directly.

Consistent with the good news early and bad news late hypothesis, I find that managers advance the first booking dates of their quarterly reports when quarterly reports reveal good news but delay them when quarterly reports reveal bad news.

I also demonstrate that managers prefer to modify their first booking disclosure dates as a timing strategy, since they have strong incentive to withhold their firm news and gamble that subsequent market news could turn in their favor. In line with the theoretical findings of Acharya et al. (2011), my results suggest that managers tend to advance their first booking dates, if relative market conditions are bad, but defer them, if relative market conditions are good. To my best knowledge, this study provides the first empirical evidence of the effects of relative market conditions on the timeliness of financial information disclosure.

According to the overlapping legal disclosure period between the annual report of one year and first quarterly report of the following year, the second study of this thesis investigates the release sequence of the two financial information sources which has received little attention in the previous literature.

I find that managers are willing to release these two reports simultaneously if both reports reveal bad news, but separately if both reports reveal good news. These differences are consistent with the integrate losses and segregate gains implications of mental accounting theory proposed by Thaler (1999).

When two reports reveal conflicting information, my results suggest that managers tend to make separate disclosure if the annual report reveals good news and the fol-

lowing first quarterly report reveals bad news, whereas managers are likely to make simultaneous disclosure if the annual report reveals bad news and the subsequent first quarterly report reveals good news. A possible reason is that the difference between the firm news revealed by the two reports reflects the direction of a firm's growth, and simultaneous disclosure could make this firm's growth direction more observable.

Moreover, I demonstrate that, in order to achieve simultaneous disclosure, managers tend to delay the first booking dates of their annual reports and advance those of their first quarterly reports. Conversely, in the hope of separating disclosures of two reports, managers are likely to advance the first booking dates of their annual reports and delay those of their first quarterly reports.

In addition to enriching the disclosure literature by examining the release sequence of two financial information disclosures, this study also initially introduces mental accounting theory into corporate disclosure literature which enables consideration of the issue of strategic timing of financial information disclosure from a new viewpoint.

The large proportion of retail investors and the T+1 short sale constraints enables China to be a natural experiment to study the effects of investor sentiment, and consequently, the third study is the first to tests whether investor sentiment affects the timeliness of quarterly report disclosure in the intuitional context of China.

Consistent with the predictions of Mian and Sankaraguruswamy (2012), I find that stock prices around quarterly report disclosure dates are indeed higher during period of high sentiment than period of low sentiment. In order to obtain higher stock prices, these results suggest that managers might choose to accelerate their disclo-

sures of quarterly reports during high sentiment periods, but decelerate them during periods of low sentiment, despite the nature of their own firm news.

Furthermore, providing support again, for the negativity bias in the context of corporate disclosure, these results are especially pronounced for firms releasing bad news, who appear to (1) release their quarterly reports earlier than firms with good news when sentiment is high and (2) delay quarterly reports more than firms with good news when sentiment is low.

7.2 Limitations and Future Developments

This thesis is also subject to some limitations which need to be further developed and addressed. Firstly, in the three studies, the data extends from 2006 through 2012. Most of this period is during the financial crises. In chapter 6, the difference between the largest and smallest value of investor sentiment is only 14.4 which could limit the effects of investor sentiment. If the data covers more non-financial crises period, the effects of investor sentiment could be more pronounced and would allow an examination whether managers'corporate decisions are moderated by the state of the economy.

Secondly, an event study was only concluded for chapter 6 to check the findings of Mian and Sankaraguruswamy (2012). Future research could examine whether the stock market reactions to timing strategies are in line with management expectations in chapter 4 as well as chapter 5. In addition, because of the overlapping legal disclosure period between the annual report of one year and first quarterly report of

subsequent year, there could be two event dates during one event window. Therefore, the multivariate regression can be further employed to check the robustness of the event study results.

Thirdly, in the third chapter, I find that the firms with bad news respond more strongly to investor sentiment than firms with good news due to the negativity bias. Baker and Wurgler (2006) also state that small stocks, young stocks, high volatility stocks, unprofitable stocks, non-dividend-paying stocks, extreme growth stocks, and distressed stocks react more to the investor sentiment. These characters of firms could be further considered as the factors in a cross-sectional analysis.

Finally, Skinner (1994), Skinner (1997) Graham et al. (2005), amongst others suggest that threat of shareholder litigation could trigger managers to reveal their bad news quickly. The threat of litigation, however, has not been considered in this thesis. It could be further studied and this could be the first study which considered the effects of litigation cost on the timeliness of financial information disclosure in institutional context of China.

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Appendix

Tables

Table 1: Comparison between Mandatory Disclosure and Voluntary Disclosure

	voluntary disclosure	mandatory disclosure
Definition	the information disclosed voluntarily by listed firms for the sake of corporate images, relationship with investors, and avoidance of accusation risks	the information that is required to be disclosed according to the securities law, accounting principles, and agencies' regulations
Motivation	Self-interested information communication between listed firms and other interest-related parties	Use laws and regulations to adjust the information communication between listed firms and other interest related parties
Content	firms' future strategies, R&D plans, prediction information, purchase and merger information, investment project analysis, financial information analysis and so on	firms' introduction, basic financial information, information about the board and top managers, critical related transactions, and explanation of important issue
Carrier	booklets, website, road show, and so on	prospectus, listing announcement, annual report quarterly report and so on
Time	at appropriate time	the time of listing firms and the regular time in each year or quarter
Balance mechanism	the design of corporate governance mechanism	the regulations and executions by law
Root of disclosure	the globalization of capital market	the monopoly of private information by firms

Table 2: Correlations of Variables for Chapter 4

	CBLAG	*CNEWS*	*BLAG*	*NEWS*	*MNEWS*	*SIZE*	*ME/BE*	*FEV*	*MAR*	*AGE*
CBLAG	1.0000									
CNEWS	-0.0201	1.0000								
BLAG	0.6944	-0.0289	1.0000							
NEWS	-0.0232	0.5325	-0.0329	1.0000						
MNEWS	-0.0288	0.5296	-0.0397	0.7869	1.0000					
SIZE	-0.0288	-0.0844	-0.0560	-0.0724	-0.0348	1.0000				
ME/BE	0.0355	0.0064	0.0200	0.0036	0.0554	-0.2506	1.0000			
FEV	0.0141	0.0553	0.0320	-0.0106	-0.0026	0.3340	-0.0328	1.0000		
MAR	0.1374	0.0263	0.1194	0.0282	0.0054	0.1439	0.0084	0.0400	1.0000	
AGE	0.0418	0.0123	0.0669	-0.0125	-0.0219	0.2023	0.0152	0.1771	0.0765	1.0000

CBLAG is the difference between actual disclosure date and first booking date. I define *BLAG*, booking lag, as a dummy variable. If the actual disclosure date is later than first booking date, we define it as 1, conversely, if the actual disclosure date is earlier than first booking date, it equals to 0. *CNEWS* is a firm's earnings surprise. *NEWS*, firm news, is a 0, 1 dummy variable of a firm's earnings surprise. Firm news=1, if firm's earnings surprise is bigger than 0, and 0, otherwise. *MNEWS*, relative market condition, is 0, 1 dummy variable of the difference between firm's earnings surprise and the market's average earnings surprise. If the firms earnings surprise is greater than market's average earnings surprise, *MNEWS* is defined as 1 and 0, otherwise. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is calculated as market capitalization divided by total common equity. *FEV*, financial leverage, is measured as total debt divided by total equity. *MAR*, market, is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, and 0, otherwise. *AGE*, listed year, means the year of a firm has been a listed firm. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1).

Table 3: Correlations of Variables for Chapter 5

	SimDis	*ABQBNews*	*AGQGNews*	*AGQBNews*	*ABQGNews*	*QDelay*	*ADelay*	*SIZE*	*ME/BE*	*FEV*	*MAR*	*AGE*
SimDis	1.0000											
ABQBNews	0.2620	1.0000										
AGQGNews	-0.1088	-0.4385	1.0000									
AGQBNews	-0.1452	-0.3299	-0.3573	1.0000								
ABQGNews	0.0222	-0.2960	-0.3207	-0.2412	1.0000							
QDelay	-0.0928	0.0854	-0.0686	0.0189	-0.0374	1.0000						
ADelay	0.1904	0.0972	0.0050	-0.1712	0.0618	0.5328	1.0000					
SIZE	-0.1311	0.0673	-0.0532	-0.1057	0.0983	-0.1807	-0.2754	1.0000				
ME/BE	-0.0524	-0.2358	0.2526	-0.0267	-0.0008	0.1588	0.2110	-0.4188	1.0000			
FEV	0.0511	0.0557	0.0180	-0.0950	0.0134	0.0202	0.1570	0.3503	-0.1036	1.0000		
MAR	-0.0958	-0.1828	0.2119	-0.0708	0.0332	0.1167	0.0381	0.1843	0.0894	0.0089	1.0000	
AGE	-0.0448	0.0286	-0.1171	0.0803	0.0233	-0.0596	-0.0069	0.0810	0.0933	0.0229	0.0427	1.0000

SimDis indicates simultaneous disclosure. *SimDis*=1, if a firm releases its annual report and subsequent first quarterly report on the same day, otherwise, 0. If actual disclosure date of annual report is later than its first booking date, *ADelay*=1, and 0 otherwise. It is the same for *QDelay*, quarter book delay. If the actual disclosure date of first quarterly report is later than its first booking date, *QDelay*=1, and 0, otherwise. *ABQBNews*=1, if firm news is bad in both annual report and subsequent first quarterly report, and 0, otherwise. *AGQGNews*=1, if firm's news is good in both annual report and subsequent first quarterly report, and 0, otherwise. *ABQGNews*=1 if annual report reveals bad news and subsequent first quarterly report reveals good news, and 0, otherwise. *AGQBNews*=1, if annual report reveals good news and subsequent first quarterly report reveals bad news, and 0, otherwise. Firm size is briefly expressed as *SIZE*, which is the log of total asset. *ME/BE* is the abbreviation of market to book ratio, which is calculated as market capitalization divided by total common equity. *LEV* means financial leverage, which is measured as total debt divided by total equity. *MAR* is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE* means the year of a firm has been a listed firm. All variables in this table are omitted the outliers (I delete the data which is higher than 99% and lower than 1%). I also delete all illegal disclosure data (the firms whose disclosure time exceed the legal period) and the data who is a new listed firm (that is *AGE* equals to 1).

Table 4: Correlations of Variables for Chapter 6

	RLAG	*UNRLAG*	*CCI*	*TURN*	*ADRATIO*	*DIPRE*	*NEWS*	*SIZE*	*ME/BE*	*LEV*	*MAR*	*AGE*
RLAG	1.0000											
UNRLAG	0.4854	1.0000										
CCI	0.0368	-0.0235	1.0000									
TURN	-0.0067	-0.0045	-0.0478	1.0000								
ADRATIO	0.0170	-0.0346	-0.1509	0.4943	1.0000							
DIPRE	0.0093	0.0183	-0.0049	0.2609	0.1054	1.0000						
NEWS	-0.0810	-0.0824	0.0762	-0.0699	-0.0233	-0.1326	1.0000					
SIZE	0.0494	0.0190	-0.0603	-0.0071	-0.0265	-0.0090	-0.0325	1.0000				
ME/BE	-0.0119	0.0477	0.0078	0.0445	-0.0867	0.0610	0.0306	-0.2740	1.0000			
LEV	0.0198	-0.0047	0.0458	0.0075	0.0273	-0.0069	-0.0103	0.3910	-0.0104	1.0000		
MAR	-0.0276	-0.0016	-0.1482	0.0248	0.0159	-0.0074	0.0305	0.2184	-0.0271	0.0742	1.0000	
AGE	0.0834	0.0058	0.0798	0.0322	0.0813	0.0251	-0.0213	0.3110	0.0048	0.2517	0.2356	1.0000

RLAG, reporting lag, is the difference between actual disclosure date of quarter report and the first date of legal quarter report disclosure period divided by the length of legal disclosure period. *UNRLAG*, unexpected reporting lag, means the difference of a firm's actual disclosure dates in same quarter of two successive years. *CCI* is monthly consumer confidence index. *TURN*, turnover, is the turnover ratio detrended by the past two-period moving average. *ADRATIO* means the ratio of number of advancing issues to declining issues. *DIPRE*, dividend premium, is the difference between the return on dividend-paying shares and that on on-paying shares. *NEWS*, firm news, is the index of a firm's earnings surprise. It is a dummy variable as well, *NEWS*=1, if firm's earnings surprise is bigger than 0, otherwise, 0. *SIZE*, firm size, is the log of total asset. *ME/BE*, market to book ratio, is the abbreviation of market to book ratio. It is calculated as market capitalization divided by total common equity. *LEV* is measured as total debt divided by total equity. *MAR*, market category, is the category of the market, *MAR*=1, if a firm belongs to Shanghai stock exchange market, otherwise, 0. *AGE*, listed year, means the year of a firm has been a listed firm. I delete the outlier for all variable (the data which is higher than 99% and lower than 1%). I also remove all illegal disclosure data (the firms whose disclosure time exceed the legal period of quarter report) and the data who is a new listed firm (i.e. *AGE* equals to 1).

Event Study for Chapter 6

According to Mian and Sankaraguruswamy (2012), either for good news or bad news, the stock prices around earnings announcements are higher during the periods of high sentiment than the periods of low sentiment, Chapter 6 tests whether investor sentiment affects the timeliness of quarterly report disclosures.

In order to check whether the findings of Mian and Sankaraguruswamy (2012) still be hold in the institutional context of China, the event study has been studied in this thesis.

I use a event window of [-60, -30] for daily event-study analysis, and [-2, +2] to capture the cumulative announcement effects. The market model that I utilize to measure the abnormal returns is

$$R_{i,t} = a_i + b_i R_{m,t} + AR_{i,t} \qquad Equation\ (1)$$

where $R_{i,t}$ is the daily return of firm i, and is calculated by dividing ($P_{i,t} - P_{i,t-1}$ by $P_{i,t-1}$); $R_{m,t}$ is the market return (Shanghai and Shenzhen are treated as separate markets); and $AR_{i,t}$ denotes the abnormal (residual) return for firm i on day t.

To test the daily market reaction, the cumulative abnormal return, $CAR_{i,t}$ is calculated as follow:

$$CAR_{i,-2,+2} = \sum AR_{i,t} \qquad Equation\ (2)$$

In this thesis, based upon consumer confidence index, the sample has been deciled. The highest decile has been defined as high sentiment period group and the lowest decile has been considered as low sentiment period group. Then, utilizing propensity score matching, I match the conditions of firms between two sentiment groups, and examine whether the cumulative abnormal return of quarterly report disclosure is higher during the high sentiment period than the low sentiment period.

In turns, propensity score matching is a statistical matching technique that attempts to estimate the effect of a treatment by accounting for the covariates that predict receiving the treatment. In this thesis, the purpose of propensity score matching is to select a matching high sentiment period observation with similar ex ante firm characteristics from observations during low sentiment period. (1) Firstly, according to my hypothesis, I only match the firm news between treatment group (high sentiment period group) and control group (low sentiment period group). (2) Then, I test the relationship between accumulative abnormal return and common accounting information variables and find that firm's news, size, and financial leverage are significant determinants on accumulative abnormal return. Therefore, I also match these variables for two groups.

The propensity score matching method finds matches by matching on the propensity score $p(x)$. The propensity score is the probability of issuing seasoned equities conditional on x,

$$p(x) = pr(D = 1|x) \qquad \textit{Equation (2)}$$

where D is the event indicator: $D = 1$ for high sentiment period observations and

$D = 0$ for low sentiment period observations. The conditional probability is usually computed from a discrete choice model such as logit or probit (Rosenbaum and Rubin, 1983; Heckman et al., 1997).

There are several methods for propensity score matching, such as nearest neighbor matching, radius matching, kernel matching and caliper matching. In this thesis, I use the nearest neighbor matching which is an optimization problem for finding closest or most similar points. Closeness is typically expressed in terms of a dissimilarity function: the less similar the objects, the larger the function values. Formally, the nearest-neighbor search problem is defined as follows: given a set S of points in a space M and a query point $q \in M$, find the closest point in S to q.

After the observations have been matched in two groups, the t-tests has been applied to investigate the difference of accumulative abnormal returns between high sentiment period observations and low sentiment period observations.

Table 5 shows the results of propensity score matching. When I only match the news of firms between high sentiment period and low sentiment period, the difference of cumulative abnormal returns between treatment group and control group, 0.012, is at a 1% significance level. I also find that the difference of cumulative abnormal returns of two groups, 0.010, is at a 10% significance level, if I match the news, size, and financial leverage of firms between high sentiment period group and low sentiment period group. Consistent with the predictions of Mian and Sankaraguruswamy (2012), these results suggest that, either only matching the firms'(1) news or (2) news, size, and financial leverage, the cumulative abnormal returns around quarterly report disclosures are higher when investor sentiment is high than it is low

Table 5: Propensity Score Matching for Chapter 6

	No. of treatment observations	No. of control observations	average treatment effect	standard error	t-test
1-dimensional matching	351	1789	0.012	0.004	2.646***
3-dimensional matching	351	273	0.010	0.006	1.724*

in the context of China.