

MANAGERS' FORECAST GUIDANCE IN EARNINGS SURPRISES
AROUND EMPLOYEE STOCK OPTION REISSUES

by

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ABSTRACT

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Option repricing, the practice of canceling underwater options and reissuing options with a lower exercise price, has often been considered an effective mechanism to restore the incentive effects of stock options. Following a new rule promulgated by the SEC on December 4, 1998, firms have initiated a new form of option exchange program. Under the new option exchange program, most firms cancel underwater options on a specified date and then reissue options at the first business day that is six months and one day later in order to avoid variable accounting for option repricing. I conjecture that this feature of the option exchange program potentially creates a new agency issue that managers may likely benefit from when a lower stock price results at the option reissue date. Thus, this thesis attempts to explore managers' possible opportunistic actions prior to option reissues from the perspective of earnings surprises. I analyzed earnings surprises and managers' forecast guidance on 328 option reissues implemented

from 2000 to 2005. I find some evidence that managers are more likely to engage in negative earnings surprises prior to ‘executive’ option reissues by guiding analysts’ earnings forecasts upward, when the earnings announcement date is closer to the option reissue date. Furthermore, the stock return analysis shows that the abnormal stock return prior to ‘executive’ option reissues is significantly lower than that of ‘non-executive’ option reissues, suggesting that managers probably take some other opportunistic actions to curb or delay stock price increases prior to ‘executive’ option reissues.

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CHAPTER 1

INTRODUCTION

In March, 2000, Financial Accounting Standard Board (FASB) issued the Interpretation No. 44 (FIN No. 44) to clarify the application of Opinion No. 25, which was issued in October 1972. According to FIN No. 44, repricing firms are mandated to record compensation expenses in the subsequent periods when the stock prices are higher than the new exercise price reset by option repricing.¹ However, FIN No. 44 also provides the exception that if firms reissue the options at least 6 months and 1 day after cancellation, they are exempt from recording that expense in the subsequent periods. Thus, most firms that are concerned about future earnings decline due to the option repricing tend to reissue options at least 6 months and 1 day after option cancellation. This practice is referred to as ‘option exchange program’ or ‘6-and-1 option exchanges’.

Basically, option repricing has been regarded as an effective mechanism to resolve the agency problem by restoring the employees’ incentive to align their interests to those of shareholders. However, the option exchange program, as a new form of option repricings, potentially creates a new agency issue that managers participating in this program have a strong incentive to lower stock price at the option reissue date, which is at least 6 months and 1 day after cancellation. In this thesis, I attempt to explore the

¹ This accounting treatment for option repricing is called ‘variable accounting method’.

possible agency issues embedded in the option exchange program and what opportunistic actions can be taken prior to option reissues by the managers who want to maximize their option values.

The remainder of this chapter consists of a brief background and motivation in Section 1.1, the originality and contributions in Section 1.2, and the organization of the rest of this study in Section 1.3.

1.1 Background and Motivation

Employee stock options (ESO) have long played a critical role as an effective means to resolve conflicts of interest between employees and shareholders by aligning employees' interests with those of shareholders. Murphy (1998) states that "The most pronounced trend in executive compensation in the 1980s and 1990s has been the explosion of stock option grants, which on a Black–Scholes basis now constitute the single largest component of executive pay." Nonetheless, deep-out-of-the-money options - that is, options whose exercise price is much higher than the stock price - cannot sufficiently play the role as incentives for managers (Hall and Murphy, 2002). As a remedial measure to resolve this problem, firms choose to reduce and reset the exercise price to the lower market price in an attempt to restore the original incentive effects of stock options. This practice is often referred to as stock option repricing, which has received considerable attention in the popular press and academic literature since 1990s.

Prior to December 15, 1998, which is the effective date of Financial Accounting Standard Board Interpretation No. 44 (FIN No. 44), firms could avoid subsequent

compensation charges when options were repriced. However, FIN No. 44 mandates firms to apply variable accounting method for option repricing,² so firms implementing stock option repricing must record compensation expense in their future income statements when their future stock prices are higher than the reset exercise price. Consequently, firms that plan to reprice their employee stock options *and* wish to avoid future earnings decrease by the variable accounting for option repricing need to seek an alternative plan to replace the traditional stock option repricing. FIN No. 44, however, provided an exception to variable accounting.

According to the exception in FIN No. 44, firms can avoid the future accounting charge due to the option repricing if firms reissue options at least 6 months and 1 day after option cancellation. This time table allows the firm to recognize the cancellation and reissue as two separate and distinct events. Since March, 2000, when Financial Accounting Standard Board issued FIN No. 44, firms often opted to reissue their stock options at least 6 months and 1 day after option cancellation. This practice, as a new form of stock option repricing, is referred to as “option exchange program” or “6-and-1 option exchanges.” In the option exchange program, the new exercise price of reissued options tend to be finally determined at the option reissue date, at least 6 months and 1 day after cancellation, because the exercise price of employee stock option is generally equivalent

² The detail explanation of the variable accounting method required by FIN No.44 will be provided in Chapter 2.

to the stock price at the option grant date. In short, the new exercise price of the employee stock options is uncertain and in the future (Coles et al., 2006).³

I conjecture that this unique feature of option exchange program can create a new agency issue that managers participating in this option exchange program tend to engage in various opportunistic actions to lower stock price at the option reissue date, because those managers can benefit from the lower exercise price of their reissued options.⁴ Indeed, numerous previous studies have shown that managers tend to engage in a variety of opportunistic actions to lower the exercise price of options at the option grant date. The self-serving behaviors documented in prior literature include the timing of option grant dates (Yermack, 1997; Callaghan et al., 2004; Lie, 2005; Heron and Lie, 2007), the timing of voluntary disclosures (Aboody and Kasznik, 2000; Chauvin and Shenoy, 2001), earnings management (Balsam et al., 2003; Coles et al., 2006), and earnings guidance (Aboody and Kasznik, 2000; Zheng, 2003; Lee, 2007).⁵

However, the ability of managers to actively participate in earnings surprise games in order to maximize their option values has received relatively little attention in academic literature. In earnings surprise games, market participants including investors and security analysts focus their attention on whether firms' quarterly or annual reported earnings reach earnings targets such as analysts' forecasted earnings⁶, and, as a result of

³ In contrast, the new exercise price of reissued options in the tradition option repricing is determined at the same date of option cancellation.

⁴ Originally, employee stock options are a sort of call option. The call option is "in the money" when the stock price exceeds the exercise price of the options. Thus, the lower exercise price will increase the probability that the options will be "in the money" in the future before the expiration date.

⁵ In Chapter Five, I discuss managers' various opportunistic actions to maximize their stock option values.

⁶ In recent years, firms have been more concerned about the results of earnings surprise games. Extant prior literature also reports a significant increase in the number of cases meeting or beating

that comparison, meeting or beating (missing) earnings expectations results in significant rewards (penalties) (Bartov et al., 2002; Kasznik and McNichols, 2002; Lopez and Rees, 2000). In other words, the stock price would be significantly increased (decreased) when the reported earnings meets or beats (misses) earnings expectations.

Given that managers fully recognize this effect of earnings surprises on the stock price, managers would have a strong potential incentive to miss earnings targets prior to option grant dates in an attempt to decrease a stock price at the option reissue date, which is generally same as the exercise price of newly granted options. Therefore, one of the main research questions in this thesis focuses on whether managers are likely to miss earnings targets prior to the option reissue date, 6 months and 1 day after option cancellation. While lowering the exercise price may be beneficial to the manager, there is a cost to the managers when they miss earnings targets by reducing the value of any stock they own. Hence, whether they engage in the behavior is an empirical question.

The second research question in this thesis arises from managers' possible action to engage in missing earnings targets prior to option reissues, indirectly through forecast guidance. Extant literature has focused on meeting or beating earnings targets rather than missing them, and shows that firms often manipulate their reported earnings upward (upward earnings management) and/or guide analysts' forecasts downward (downward forecast guidance) so that their reported earnings meet or beat earnings targets (Barton and Simko, 2002; Bartov et al., 2002; Burgstahler and Eames, 2006; Matsumoto, 2002; Brown and Pinello, 2007).

earnings expectations in recent years (Brown, 2001) and the shift in earnings threshold for managers to achieve (Brown and Caylor, 2005).

However, if managers attempt to miss earnings targets, rather than meet or beat them, they will likely engage in downward earnings management and/or upward forecast guidance – that is, in opposite directions to managers’ typical actions for meeting or beating earnings targets. Supposing that managers have a strong incentive to miss earnings targets prior to option reissues, I conjecture that managers are likely to manipulate their reported earnings downward and to guide analysts’ forecasts upward prior to option reissues. Some of the prior studies have examined downward earnings management prior to option grants (Coles et al., 2006; Carter and Lynch, 2007; McAnally et al., 2008). But, up to now, there is no extant literature that investigates managers’ upward forecast guidance prior to option grants. Therefore, the second research question in this thesis is that “Do managers guide analysts’ forecast upward so that their reported earnings miss earnings targets prior to option reissues?”

Moreover, I expect that managers’ opportunistic incentive to miss earning targets and to guide analysts’ forecast upward would be more pronounced prior to option reissues than other option grants in the following respects.

First, most firms adopting option exchange program reissue the new options at the exact date of 6 months and 1 day after option cancellation (Coles et al., 2006; Carter and Lynch, 2007), even though firms still can choose a “good date” for option reissues after the first business day that is six months and one day after the cancellation of the exchanged options.⁷ Given that firms cannot manage the timing the reissue dates

⁷ FIN No. 44 permits firms to avoid variable accounting, when firms reissue options “at least” 6 months and 1 day after option cancellation, not at the exact date of 6 months and 1 day after cancellation.

following FIN No. 44,⁸ I conjecture that managers may be more likely to strongly engage in some other opportunistic actions to lower stock price prior to the reissue dates. In the case that managers still engage in the timing of reissue dates by selecting the ‘good’ dates with low stock prices, managers’ incentive to take additional opportunistic actions prior to option reissue date will be, at least partially, diminished.

Second, it has been reported that firms with higher analyst following are more likely to implement 6-and-1 option exchange program compared to firms that continued to use the traditional option repricing (Zheng, 2003; Coles et al., 2006). In addition, firms with higher analyst followings are expected to be more likely to guide analysts’ forecasts (Lang and Lundholm, 1996). Therefore, I expect that managers participating 6-and-1 option exchange program are more likely to guide analysts’ forecasts. In particular, I hypothesize that managers guide analysts’ forecast upward prior to option reissues, leading the reported earnings to miss earnings targets.

Furthermore, the eligibility to participate in the option exchange program needs to be considered to examine the agency issues discussed above. According to Carter and Lynch (2007), 62% of the total option exchange programs executed from 2000 to 2002 are available to at least some executives, and 54% are available to all executives. Generally, top executives tend to have easier access than non-executives to a variety of direct or indirect resources for decision making process. Moreover, they are directly involved in the decision making process for financial reporting and investment decisions. Therefore, I hypothesize that top executives who are eligible to participate in option

⁸ Contrarily, Callaghan et al. (2004) find that CEOs opportunistically manage the timing of the traditional option repricing dates in order to maximize their option values.

exchange program are more likely to engage in missing earnings targets and upward forecast guidance prior to option reissues than non-executives.

In addition to the eligibility requirement of option exchange program, this study considers how the financial reporting process curbs managers' opportunistic actions prior to option reissues. Indeed, Brown and Pinello (2007) document that managers achieve the goal of meeting or beating quarterly earnings targets more effectively than annual earnings targets, because annual reports are subject to more rigid rules than interim reports (Palepu, 1988), curbing managers' discretion to meet or beat annual earnings. This finding is quite interesting, in that such a financial reporting process can also curb managers' discretion to miss annual earnings targets prior to option reissues. Managers might more effectively engage in downward quarterly earnings management prior to option reissues than annual earnings management, increasing the probability of missing quarterly earnings targets prior to option reissues. However, I also expect that managers are more likely to engage in upward forecast guidance prior to option reissues as a substitutive way to downward earnings management in annual earnings surprises.

1.2 Originality and Contribution

In spite of numerous studies on managers' opportunistic actions around stock option plans, it has received relatively little attention in academic literature that managers consider earnings surprises in order to maximize their option values. Only a few studies have examined managers' active participation in earnings surprise games surrounding their stock option compensation. For example, McAnally et al. (2008) document that that

the likelihood of missing earnings targets for firms that manage earnings downward increases with scheduled (fixed) stock-option grants.⁹ This study differentiates itself from McAnally et al. (2008) by studying stock option reissues under option exchange program – rather than scheduled (fixed) stock-option grants, in order to test managers' incentive to miss earnings targets. Specifically, if managers can fully predict that stock price will be significantly decreased as a result of missing earnings targets, they are likely to strongly engage in missing earnings targets prior to option reissues because managers as option holders benefit from a lower stock price at option reissue date.

Furthermore, this study also hypothesize that managers can guide analysts' forecast upward prior to option reissues in an attempt to indirectly achieve the goal of missing earnings targets. This hypothesis is based on the simple conjecture that the higher earnings targets (e.g., higher analysts' forecasts) will increase the possibility that the actual reported earnings miss earnings targets. This is unique because it examines managers' *upward* forecast guidance to achieve the goal of missing earnings targets. Numerous prior studies have focused on only managers' *downward* forecast guidance to achieve the goal of meeting or beating earnings targets. In this context, this study is the first to test managers' *upward* forecast guidance.

Hence, to test managers' *upward* forecast guidance prior to option reissues, this study is required to focus on analyst forecasts for the earnings to be announced *prior to* option reissues. In earnings surprise games, market participants concentrate on whether

⁹McAnally et al. (2008) considers a grant to be a fixed-date grant if the grant date is within 14 days of the date on which options were granted in either of the previous two fiscal years, i.e. if two or more grants occur within 14 days over a three year period. This definition is consistent with Aboody and Kasznik (2000).

firms' quarterly or annual reported earnings reach earnings targets such as analysts' forecasted earnings. Therefore, the date of actual earnings announcement should be prior to option reissues, so that managers will consider earnings surprises prior to option reissues. This research design is another unique feature that differentiates my study from previous literature. Extant literature on analyst forecasts around stock option awards commonly uses analyst forecasts for the earnings to be announced *subsequent to* option awards rather than *prior to* (Aboody and Kasznik, 2000; Zheng, 2003; Lee, 2007; Rees et al., 2006). Thus, all of those studies did not consider managers' involvement in earnings surprise games prior to option awards, commonly concluding that analysts' forecasts are relatively pessimistic prior to option awards, compared to the other control firms or control periods.

Specifically, this study contributes to the literature on managers' opportunistic actions around stock option plans and on earnings surprises in the following four respects.

- 1) The fundamental research question in this thesis is whether managers attempt to lower the exercise price of reissued options by their active engagements in missing earnings targets in earnings surprise games. Prior literature on managers' opportunistic actions around stock option compensation plans has relatively disregarded managers' active participation in earnings surprise games in order to maximize their option values.
- 2) This thesis extends the literature on earnings surprises by exploring whether, in some special situations, managers prefer negative earnings surprise (i.e., the case that the reported earnings miss earnings targets) to positive earnings

surprise (i.e., the case that the reported earnings meet or beat earnings targets). Almost all prior studies have focused on managers' incentive to meet or beat earnings targets, rather than miss earnings targets.

- 3) This thesis contributes to the literature on forecast guidance in two ways. First, I introduce a special situation where managers have strong incentive to engage in an opposite direction of forecast guidance in earnings surprises. No studies to date have considered managers' *upward* forecast guidance to miss earnings targets. Second, the primary focus of this study lies in managers' forecast guidance prior to option reissues under the setting of option exchange programs. Coincidentally, the period when the option exchange program has been implemented overlaps with the period under the Regulation FD regime. Therefore, this study contributes to the earnings guidance literature by investigating whether or how managers guide analyst forecasts even in the regime of Regulation FD.
- 4) I use large sample of option exchange programs implemented from 2000 to 2007 because many firms have adopted this program since the year of 2000 when FASB announced FIN No. 44. Almost all previous studies use as their sample the option exchange programs implemented from 2000 to 2002 (Coles et al., 2006; Carter and Lynch, 2007; Zheng, 2003; Lee, 2007). Thus, I expect that this study can potentially provide more convincing results on managers' opportunistic actions around option exchange programs than the previous studies.

1.3 Organization of This Study

The remainder of this study is organized as follows. Chapter 2 provides the institutional background of option exchange program as a new form of repricing, and discusses the controversy around the traditional option repricing. In Chapter 3, I describe earnings surprises from a standpoint of valuation consequences in the capital market and discuss the two main tactics in earnings surprises. Chapter 4 describes managers' opportunistic actions around stock option plans, and develops testable hypotheses as to managers' incentive to miss earnings targets and guide analyst forecasts upward and as to the differential effects of the eligibility of option exchange program and financial reporting process on those incentives. In Chapter 5, I describe the sample selection procedures, measures of forecast guidance, and statistical methodologies. Chapter 6 presents the empirical results. Finally, Chapter 7 concludes with the implications of the findings in this study for existing research on managers' incentives surrounding compensation plans.

CHAPTER 2

BACKGROUND OF STOCK OPTION EXCHANGE PROGRAM

2.1 Traditional Stock Option Repricing¹⁰

Stock options have long played a critical role as an effective means to resolve conflicts of interest between employees and shareholders by aligning employees' interests with those of shareholders. Murphy (1998) states that "The most pronounced trend in executive compensation in the 1980s and 1990s has been the explosion of stock option grants, which on a Black–Scholes basis now constitute the single largest component of executive pay."

A typical stock option grant gives the employee the right to buy a specified number of shares within a specific time (maturity) at a fixed price (exercise price or strike price), which is usually the stock price at the time of the grant. However, in certain environmental or firm specific circumstances, firms try to alter the terms of previously-issued stock options. Repricing is related to resetting the exercise price of stock options rather than the other terms of stock options such as maturity. In detail, repricing is the practice of canceling underwater options (options whose exercise price is greater than the current stock price) and reissuing options with a lower exercise price (Saly, 1994).¹¹

¹⁰In the title of this section, I use the term, 'traditional', in order to distinguish the original repricing from the option exchange program as a new form of repricing.

¹¹ Compared to the option exchange program, the traditional repricing is characterized by the fact that option cancellation and reissues occur at the same time.

2.1.1 Why do firms reprice stock options? – Optimality of repricing

Proponents of repricing offer two major explanations for why firms reprice stock options. The first argument is that repricing stock options restores performance-based incentives, because deep-out-of-the-money options no longer provide any meaningful incentives to option holders (Hall and Murphy, 2000). This argument is also supported by the finding that repricers tend to be small (Brenner et al., 2000; Chance et al., 2000; Chidambaran and Prabhala, 2003).¹² The second argument is that firms in a highly competitive industry such as high-technology industry reprice stock options in order to retain valuable or talented key employees. Indeed, firms in high technology industries are more likely to reprice stock options than firms in other industries. (Chance et al., 2000; Carter and Lynch. 2001)

Firms executing repricing oftentimes overly express the above two reasons for repricing in their proxy statements, in order to defend their decision to reprice employee stock options. For example, from the 1997 proxy statement of Wall Data Inc:

“Stock options are intended to provide incentives to the Company's officers and employees. The Compensation Committee believes that such equity incentives are a significant factor in the Company's ability to attract, retain and motivate key employees who are critical to the Company's long-term success. The Compensation Committee further believes that, at their original exercise prices, the disparity between the exercise price of these options and recent market prices for the Common Stock did not provide meaningful incentives to the employees holding the options. A review of other companies in the software industry indicates that some of these companies have been confronted with this problem and have made similar adjustments in option prices to motivate their employees.”

¹² However, this inverse association between firm size and the likelihood of repricing seems also consistent with the hypothesis that managers use their power over corporate governance in order to appropriate wealth from stockholders in various forms, including repricing, as small firms has less ownership by powerful institutional investors and are less monitored by the financial press (Brenner et al., 2000).

Some analytical studies provide theoretical models proving that repricing is an optimal decision under a market-wide crash (Saly, 1994)¹³ and that some degree of resetting is optimal in maximizing firm value even after consideration that resetting weakens initial incentives present in the original award (Acharya et al., 2000). These studies commonly support the argument that repricing restores employees' performance-based incentives, leading to minimizing agency costs and maximizing firm value.

Besides theoretical modeling, some studies provide empirical evidence to support this notion. Carter and Lynch (2001) find that firms are more likely to reprice as their options become more out-of-the-money, suggesting that firms reprice in response to the decreased pay-to-performance sensitivity. In addition, they interpret poor firm-specific performance before repricing as evidence that firms in competitive labor markets reprice stock options to deter managers from going to work for other firms.

If market participants perceive this favorable effect of repricing on future firm value, stock market would positively respond to the release of repricing news. However, the empirical results are mixed. Grein et al. (2005) find a reliably positive three-day announcement-date mean excess return at the repricing announcement with a sample of 72 stock option repricing announcements made by Canadian firms, indicating that repricing of employee stock options on average benefits shareholders. However, Chance et al. (2000) find no significant market reaction around the proxy filing date of repricing

¹³ Saly (1994) conclude that repricing stock options insulates employees from industry-wide or market-wide factors that negatively affect the firm's stock but cannot be controlled by employees' effort.

with a sample of U.S. firms.¹⁴ Callaghan et al. (2004) also examine market reactions around repricing dates with a sample of U.S. firms and observe sharp increases in stock price in the 20-day period of following repricing date. However, they interpret this finding as evidence of CEOs' opportunistic timing of repricing dates, because during the sample period the information about option repricing is not released to the public around the repricing dates.

In addition to the above two explanations for why firms reprice options, some recent studies explore whether repricing helps realign managerial incentives to firm risk. Prior study reveals that granting stock options enhances the sensitivity of the managers' wealth to risk, inducing managers to take on more risk in their decision making (DeFusco et al., 1990). However, when stock options are out-of-the-money, the sensitivity of managers' wealth to risk (option vega) is extremely high. The excessively high option vega can induce managers to make very risky decisions on investment or financing, leading to an increase in firm volatility and filing for bankruptcy in worst cases. As a remedial measure in response to excessively high option vega, firms can use the repricing strategy in order to reduce risk taking incentives to an optimal level. Indeed, Coles et al. (2005) empirically show that firms are more likely to reprice stock options when option vega is greater than the optimal level, and Carpenter (2000) theoretically proves that repricing following poor performance can reduce risk-taking incentives. Therefore, firms in financial distress firms are more likely to reprice stock options, since creditors in those

¹⁴ According to Chance et al. (2000), this insignificant market reaction can be explained by the possibility that market does not perceive the repricing events as providing significant new information about the future performance of the firm or proxy filings are not monitored carefully by the majority of investors.

firms attempt to dissuade managers to take on more risk through repricing (Lambert et al, 1991; Gilson and Vetsupens, 1993). The above studies commonly support the view that repricing can effectively realign managers' incentives to take on risk to an optimal level.

2.1.2 Criticism against repricing stock options

Even though repricing can enhance shareholder wealth by restoring managers' performance-based incentives and retaining valuable employees, it has nonetheless drawn heavy criticism from the financial press and large institutional investors.¹⁵ Opponents of repricing argue that repricing rewards management for poor performance and transfers wealth unjustifiably from shareholders to executives. In addition, they insist that managers should not be shielded from the loss of value of the options which may be a result of the manager's own decisions. Institutional investor groups have also argued that repricing provides managers with an undesirable expectation of adjustment for their low compensation caused by poor performance, failing to provide any incentives for future performance (Moore, *The Wall Street Journal*, March 10, 1999, p. C2; Reingold, *Business Week*, February 15, 1999, p. 38). Additionally, repricing seems to undermine the role of options as a link between management and shareholder wealth, in a sense that, with repricing, executives profit both when stock prices increase (when options become in-the-money) and when stock prices fall precipitously (when out-of-the-money options are repriced) (Chidambaran and Prabhala, 2003).

¹⁵ Chidambaran and Prabhala (2003) report that a LEXIS-NEXIS search for "option repricing" reveals over 50 published stories from January to December 1999.

Theoretically, firms can reprice stock options so as to protect their employees from an uncontrollable drop in stock option value, which is induced by market or industry-wide factors (e.g., sudden market-wide crash of 1987 (Saly, 1994)). Indeed, companies that reprice options often argue that the poor firm performance prior to the repricing was caused more by factors ‘beyond the managers’ control’ than by a lack of managerial efforts or diligence. However, this argument might not seem persuasive enough to convince the opponents of repricing. Some empirical evidence shows that repricings follow poor firm-specific performance, rather than market or industry return decline (Gilson and Vetsuypens, 1993; Chance et al., 2000; Brenner et al., 2000; Carter and Lynch, 2001).

It seems that this finding at least indirectly supports the entrenchment hypothesis that repricing reflects managerial entrenchment or ineffective corporate governance.¹⁶ In other words, repricing results from self-serving behaviors by option holders, and firms with weaker governance structures are more likely to reprice underwater options.

However, empirical studies directly examining the association between repricing and corporate governance have shown the mixed results. Some studies find evidence that firms with greater agency problems, smaller size, and weak governance structure are more likely to reprice (Chance et al., 2000; Brenner et al., 2000; Pollock et al. 2002). In contrast, some other studies find little evidence that repricing relates to managerial

¹⁶However, Carter and Lynch (2001) interpret this finding as evidence that firms reprice to discourage management from entertaining employment offers from other firms.

entrenchment or ineffective governance (Chidambaran and Prabhala, 2003¹⁷; Carter and Lynch, 2001).¹⁸

In addition to those unfavorable effects of repricing on shareholder values, Callaghan et al. (2004) find that CEOs opportunistically manage the timing of the option repricing dates in order to maximize their option values. In detail, repricing dates tend to either precede the release of good news or follow the release of bad news in the quarterly earnings announcements, so that the holders of repriced options can benefit from the lower exercise prices which are same as the stock prices of repricing dates.

In response to these negative aspects underlying much of the public criticism of repricing, some firms have recently instituted measures to prohibit repricing or to require shareholder approval to reprice stock options in addition to the decision by board of directors.¹⁹ Furthermore, this criticism was at least partially responsible for the FASB's 1998 proposal on accounting for stock option repricing,²⁰ which led to the inception of stock option exchange program as a new form of repricing practice.

2.1.3 Unresolved debate: What are the consequences of repricing?

The debate over repricing stock options between supporters and opponents is still going on. In my view, the unresolved debate to date surrounding repricing might be due

¹⁷ Chidambaran and Prabhala (2003) find that repricers have abnormally high CEO turnover rates and over 40% of repricers exclude the CEO's options when they reprice, implying that repricing does not reflect managerial entrenchment or ineffective governance.

¹⁸ The inconsistent results between those studies arise from the difference in sample periods for their study. As indicated in Carter and Lynch (2001), increased disclosure of repricings and the transparency of executive conflicts of interest have changed the nature of the repricing decision.

¹⁹ According to Chen (2004), 108 firms adopted the restriction of option repricing from 1994 through 1998.

²⁰ The FASB's 1998 proposal requires firms that reprice stock options to record compensation expense. The detail description for this proposal will be provided later.

to the fact that repricing has indeed both positive *and* negative aspects in and of itself. Indeed, Balachandran et al. (2004) find evidence supporting both arguments by supporters and opponents of repricing. Specifically, they find that firms with weaker governance structures are more likely to reprice “underwater” options, but also find some evidence that firm restoring incentives and retaining executives appear to be main drivers of repricing. Given this controversy, the debate regarding repricing can be resolved by empirically testing whether firms effectively achieve the goals of repricing in the following respects: (1) whether repricing actually improves firm performance; (2) whether repricing actually enhance employee retention; and (3) whether repricing actually reduce firm volatility to an optimal level. Some empirical studies attempt to answer these questions.

The prior studies that examine whether repricing improves firm performance have shown the mixed results. Some of the studies find no significant improvement in shareholder returns after repricing (Chance et al., 2000; Daily et al., 2002) However, this finding does not contradict the hypothesis that repricing improves employee productivity and firm earnings because it is not apparent when the anticipation of repricing is incorporated in stock prices nor is it clear how returns would have behaved had repricing not taken place (Chance et al., 2000). In contrast, Callaghan et al. (2004) find mixed results, significant positive industry-adjusted stock and accounting performance subsequent to repricing but also significant negative industry-adjusted firm growth for repricing firms.

The extant literature which examines employee turnover surrounding repricing is inconclusive. Chidambaran and Prabhala (2001) find that CEO turnover is higher in repricing firms than in nonrepricing firms. Some other studies also find a similar result that that post-repricing executive turnover is higher in repricing firms than in firms that do not reprice (Daily et al., 2002; Carter and Lynch, 2004).²¹ In contrast, some evidence supporting the retention effect of repricing is also found in these papers. Chidambaran and Prabhala (2001) find additional evidence that CEO turnover rate is lower in repricing firms than in firms that reprice nonCEO executive options only, and Carter and Lynch (2004) using forfeited stock options to proxy for overall employee turnover find that overall employee turnover including non-executive turnover is negatively related to the repricing. As stronger evidence to support the retention effect of repricing, Callaghan et al. (2003) document that CEO retention (non-CEO executive) is significantly greater for repricing firms than for non-repricing firms for three (two) years following the repricing date.²²

As another consequence of executive option repricing, Subramaniam and Park (2008) demonstrate that managers' incentive to take on risk is significantly reduced subsequent to repricing. This study provides the empirical evidence that capital expenditure intensity, and variances of stock returns and accounting returns significantly

²¹ Compared to Daily et al. (2002), Carter and Lynch (2004) attempt to more completely controls for firm's incentive to reprice than does that in Daily et al. (2002), by including only firms with underwater options as a control group and by controlling for prior levels of executive turnover as well.

²² Callaghan et al. (2003) use more precise measure of turnover than the prior studies. They consider only turnover events that occur *following* the repricing date in order to compare the change in turnover rates surrounding the repricing date. In contrast, the prior studies measure turnover as any attrition that occurs in the full fiscal year that includes the repricing data, so that the measure includes turn turnover that occurs even *prior to* the repricing date.

decrease subsequent to repricing of stock options, consistent with the repricing's risk-related hypothesis that repricing stock option reduces sensitivity of executive pay to stock return volatility to presumably more optimal levels and managers take actions to reduce firm risk.

2.2 Stock Option Exchange Program

Since the year of 2000, when FASB Interpretation (FIN) No. 44 started to be effective, many firms have been implementing the option exchange program as a new form of option repricing.²³ As part of FIN No. 44, certain provisions require the repriced options to be subject to variable option accounting, so that companies that have repriced their options are mandated to expense in their future income statements any subsequent stock price appreciation above the new exercise price and recognize gain if stock price falls. However, FIN No. 44 also provides an exception that if firms cancel underwater options and subsequently reissue options at least 6 months and 1 day following the cancellation, they can avoid this variable accounting for option repricing. Because of this exception in FIN No. 44, firms concerned about subsequent earnings decreases due to option repricing tend to reissue options at least 6 months and 1 day after cancellation, instead of adopting the traditional repricing.²⁴ This practice is often referred to as “option exchange program” or “6-and-1 option exchanges”.

²³ The option exchange program first received attention when Sprint offered one in October 2000 (Ferracone and Borneman, 2001; Sutton and Donohue, 2001; Norris, 2000).

²⁴ However, it is still controversial how FIN No. 44 affects shareholder wealth, because this new standard does not have a direct effect on firms' cash flows.

Thus, the most distinctive characteristic of the option exchange program is that firms reissue options at least 6 months and 1 day after option cancellations. Contrarily, in the traditional option repricing, option cancellations and reissues occur simultaneously.

Another unique feature of option exchange program is that the new exercise price of reissued options can be finally determined at least 6 months and 1 day after cancellation, because the exercise price of stock options is generally equivalent to the stock price at the option grant date. In short, the new exercise price of the employee stock options is uncertain and in the future (Coles et al., 2006). This feature of option exchange program may create new agency problems, because managers attempt to pursue their self-interests around the reissue dates, 6 months and 1 day after cancellation.²⁵

2.2.1 Institutional Background on 6-and-1 Option Exchange Program

The implementation of stock option exchange program is primarily attributed to the changes in accounting standards dealing with stock option repricing.

As depicted in Figure A.1, the first U.S. accounting standard to provide guidance for employee stock options is the Accounting Principles Board (APB) Opinion No. 25 entitled “*Accounting for Stock Issued to Employees*”, which was issued in October 1972 by the Accounting Principles Board (the forerunner of the Financial Accounting Standards Board). APB Opinion No. 25 requires compensation expense for stock-based employee compensation plans to be recognized based on the difference, if any, between

²⁵ This thesis primarily concentrates on managers’ opportunistic actions around the option reissue dates defined under the option exchange program.

the quoted market price of the stock and the exercise price of the stock option.²⁶ However, this accounting standard requires firms to adopt different accounting treatments for employee stock options depending on the terms of options (e.g., exercise price or number of shares) are variable or fixed at the option grant date.²⁷ Specifically, firms are mandated to record compensation expense for variable options in their income statements when the future stock prices at the end of fiscal periods – even before exercise date - exceed the exercise price of stock options. In contrast, firms can record compensation expense of fixed options only at the exercise date, in the case that the stock price at the expiration date is higher than the exercise price. In other words, this rule specifies different dates for the pertinent quoted market price of the stock used in measuring compensation expense, depending on whether the terms are fixed or variable. Therefore, almost all firms adopting stock option plans tend to prefer fixed options to variable options, because of this accounting concern.

In response to firms' prevalent use of fixed options to avoid accounting charges, the Financial Accounting Standards Board (FASB) issued in October 1995 the Statements of Financial Accounting Standards (SFAS) No. 123 entitled "*Accounting for Stock-Based Compensation*". This standard just encourages all entities to adopt fair value method²⁸ of accounting for an employee stock option, but also allows an entity to

²⁶ This accounting method is referred to as 'Intrinsic value method'.

²⁷ The employee stock options of which terms (e.g., exercise price or number of shares) are variable (fixed) at the option grant date are called variable (fixed) options.

²⁸ Under the fair value method in SFAS No. 123, firms estimate fair value of employee stock options at the grant date using option-pricing models such as Black-Scholes model, and record compensation expense over the vesting period by allocating the estimated fair value over the vesting period.

continue to account for it using the intrinsic value method which is already prescribed by APB No. 25 (1972).

Until the period of SFAS No. 123 regime, repricing was simply considered a kind of new fixed option grants with new exercise prices, so firms executing repricing had not been required to recognize compensation expense related to option repricing. However, repricing also can be considered a modification of variable options in the sense that repricing is essentially characterized by a change in exercise price of existing options. As a reflection of this perspective, the FASB announced in December 1998 that it would be releasing soon an Exposure draft related to accounting for the repricing of employee stock options, to clarify that firms repricing stock options should record compensation expense in accordance with the “variable method” of accounting for stock options.²⁹ The FASB additionally announced that when the Exposure Draft is approved, the effective date would be made retroactive to repricing events occurring after December 15, 1998.

In March 2000, FASB Interpretation No. 44 was issued as an approval of FASB 1998 announcement. This rule was effective on July 1, 2000, but effective on December 15, 1998 for repricing events, as FASB announced in December 1998. This final rule mandates firms to use variable accounting method in accounting for the stock option repricing, since repriced options are regarded as variable options. Thus, under the variable accounting method prescribed by this new rule, any option repriced after

²⁹ The variable method requires that firms record compensation expense each future year that its stock price increases and the options remain unexercised. The amount of the expense is the difference between the new exercise price of the repriced options and the market value of the underlying stock in the future period, amortized over the remaining vesting period of the repriced options. Firms may also report a negative expense if, after a period of stock price increase, the stock price decreases. The negative expense cannot exceed the cumulative expenses recorded on the repriced options (Carter and Lynch, 2003)

December 15, 1998 must be marked to the market every accounting period for the repricing date through the date of exercise (or expiration, if left unexercised). Specifically, FASB Interpretation (FIN) No. 44 provides a detailed explanation of “Modification That Reduce Exercise Price” as one condition of variable options, particularly in terms of option cancellation and reissue, as follows.

45. An option award cancellation (settlement) shall be combined with another option award and results in an indirect reduction to the exercise price of the combined award if another option with a lower exercise price than the canceled (settled) option is granted to the individual within the following periods:

- a. The period prior to the date of the cancellation (settlement) that is the shorter of (1) six months or (2) the period from the date of grant of the canceled or settled option
- b. The period ending six months after the date of the cancellation (settlement).

According to the above specification, the options that are reissued within 6 months after option cancellation are regarded as modifications of options, so such reissues should be accounted for using variable accounting method, which recognize compensation expenses in the subsequent years when the stock prices exceeds the new exercise prices.³⁰

Therefore, firms that cancel the stock options and reissue them at least 6 months and 1 day after the option cancellation date can avoid recording compensation expense charges.³¹ Due to this accounting benefit, firms concerned about earnings decline prefer

³⁰ Traditional repricing significantly increases during the 12-day window between the FASB announcement (December 4, 1998) and the proposed effective date (December 15, 1998), implying that repricing firms strongly attempted to avoid variable accounting related to option repricing (Carter and Lynch, 2003).

³¹ This period restriction in FIN No. 44 provides the reason why the practice as a new form of repricing is referred to as ‘6-and-1 option exchange’.

to reissue stock options at least 6 months and 1 day after option cancellation date, rather than use of the tradition option repricing.³²

Indeed, many firms explicably express their accounting concern involving the implementation of option exchange programs. For example, from the 2005 10-K of Comverse Technology Inc.:

“The exchange program was designed in accordance with FASB Interpretation No. 44, "Accounting for Certain Transactions Involving Stock Compensation (an interpretation of APB Opinion No. 25)", under which, the grant of replacement options not less than six months and one day after cancellation will not result in any variable compensation charges relating to these options.”

2.2.2 Detail Process of 6-and-1 Option Exchange Program

Fundamentally, the 6-and-1option exchange program is executed by way of an exchange agreement or contract between the company and the option holders. As a first step to reach this agreement, firms must distribute to their employees holding stock options the Schedule TO (Tender Offer), which provides comprehensive information regarding the option exchange.³³ Starting March 21, 2001, firms must file the Schedule TO with the Securities and Exchange Commission (hereafter, SEC), in addition to the option holders, at the time the exchange offer commences. The major information the Schedule TO describes in detail on the option exchange are as follows: 1. eligible options in the exchange program, 2. reason for this option exchange, 3. option exchange ratio, 4.

³³ This requirement is based on Rule 13e-4 under the Securities and Exchange Commission (SEC) Exchange Act of 1934, which considers option exchanges to be tender offers.

specific procedures to surrender options, 5. important dates (offer expiration date, option cancellation date and option reissue date), and 6. vesting period of new options.

The decision on who are eligible to participate in the option exchange program is made by the compensation committee or in the shareholder meeting. In some firms, all employees holding stock options, including the top executive officers or members of board of directors, are eligible to participate in this program, but in other companies, executive officers or members of board of directors are not eligible.³⁴

Typically, the offer expires a month or so after the initial offer date.³⁵ And then, firms usually cancel all tendered options on or immediately after the expiration date. According to a Schedule 14(d)(1) filing, firms announce the percentage of employees who tendered their options immediately after the expiration date of the offer. As a final step, firms reissue to the participants new “at-the-money” options following predetermined exchange contract on the date, which is typically 6 months and 1 day subsequent to the cancellation date.

2.2.3 Characteristics of firms executing 6-and-1 option exchange program

As discussed earlier, firms are likely to adopt 6-and-1 option exchange program rather than the traditional option repricing from the accounting concern that the application of variable accounting for the traditional option repricing can lead to an

³⁴ In a study of Carter and Lynch (2007) using the option exchanges executed from 2000 to 2002, executive officers (members of board of directors) are not eligible in 42% (38%) out of all option exchange programs in their sample.

³⁵ Carter and Lynch (2007) report the mean (median) number of trading days between the offer date and the cancellation date is 24.9 (23.0). Similarly, Coles et al. (2006) report the mean (median) number of calendar days between the filing date and cancellation date is 35 (31).

earnings decline in each subsequent period especially when the stock price firms' future stock price dramatically increases. As a result, firms with higher analyst following are more likely to implement 6-and-1 option exchange program compared to firms that continued to use the traditional option repricing (Zheng, 2003; Coles et al., 2006), because firms with high analyst following are more pressured by financial analysts to avoid earnings shortfalls (Ke, 2001).

Other than the above firm characteristic, the reissuers have similar features to repricers. In detail, reissuers tend to be smaller, younger, and rapidly growing firms that experience a sudden shock of stock return. And firms in high technology industries reissue stock options than firms in other industries. Coles et al. (2006) report that 47% of sample reissuers are clustered in the "business services" industry segment, and that these firms primarily engaged in software development and networking services.³⁶ This industry distribution is similar as that of traditional repricers, which is reported in Carter and Lynch (2001) and Chidambaran and Prabhala (2003).

2.2.4 Market reactions surrounding option exchange program

Contrary to the mixed results on market response to traditional repricing, announcement of option exchange program generate positive abnormal stock return (Gupta, 2006; Kalpathy, 2004). This finding suggests that shareholders view option exchange program as an effort to restore employee incentives and to reduce turnover of

³⁶ Carter and Lynch (2007) also show the similar industry distribution of reissuing firms. In their study, the proportion of sample reissuing firms in "Business Services" (2-digit SIC code: 73) is 48.8% of all sample reissuing firms.

talented employees. Particularly, Kalpathy(2004) indicates that the positive market response is due to the retention motives of firms conducting 6-and-1 option exchange program.

The pattern of stock returns during the 6 months and 1 day between option cancellation dates and reissue dates raises interesting questions. Carter and Lynch (2007) and Coles et al. (2006) commonly document that the overall stock returns during 6 months and 1 day have, on average, a flat pattern. Supposing that managers likely engage in opportunistic actions to lower stock prices prior to the reissue date, the stock return should have shown the significantly decreasing pattern during the period between option cancellation and reissues. One possible interpretation for the flat pattern of stock turns before option reissue dates is that market participants do not respond to managers' effort to reduce stock price because they can anticipate and perceive managers' opportunistic actions prior to option reissues (Coles et al., 2006). However, Carter and Lynch (2007) provide additional evidence that cumulative raw, market-adjusted and industry-adjusted returns in the 2- days up to and including the reissue date (relatively short event period compared to that of Coles et al. (2006)) are all significantly negative, supporting that managers opportunistic actions immediately before option reissues have a significantly negative impact on stock price even in a short period.

The prior studies commonly interpret the relatively flat pattern of stock return during the option cancellation and reissues as evidence that managers' opportunistic actions to reduce stock prices are not successful. However, the interpretation simply disregards the fact that the stock price at the option cancellation dates is already

extremely low, leading to a decrease in the probability of subsequent stock price drop after option cancellation. From the standpoint, the flat pattern of stock return can also be interpreted as a result of managers' efforts to curb possible various drivers to increase stock price during 6 months and 1 day between option cancellation and reissues.

2.2.5 Agency issues embedded in 6-and-1 option exchange program

As indicated earlier, the most distinctive feature of 6-and-1 option exchange program is that almost all the firms undertaking this program reissue new options immediately after six months and one day subsequent to the cancellation date (Coles et al., 2006; Carter and Lynch, 2007). Thus, the option reissue dates can be predicted with a high certainty by managers and outside investors. This unique feature prominently distinguishes option reissues from the traditional option repricing or other forms of general option grants, in that the traditional option repricing or other general option grants can be timed by managers who attempt to maximize their option values (Callaghan et al., 2004; Yermack, 1997; Chauvin and Shenoy, 2001; Lie, 2005). As discussed later, other forms of option grants are also backdated in order to make the exercise price low (Heron and Lie, 2007). But, the backdating of option reissue dates under option exchange program is basically impossible, because firms must submit the plan for option exchange program with SEC at least 6 months before option reissue date. Insofar as managers are much less likely to time the reissue date, the agency costs derived from timing issues on stock options can be removed in the option exchange program.

Nonetheless, the option exchange program potentially gives rise to new agency issues derived from the predictability of reissue dates. In detail, it can provide an undesirable environment in which managers attempt to engage in various opportunistic actions surrounding option reissue date in an attempt to lower stock price at the reissue date, which has been predicted since the announcement date of option exchange program. I discuss this in the Chapter 4.

CHAPTER 3

MANAGERS' GUIDANCE OF ANALYST FORECASTS

3.1 Earnings Surprises

Almost every day, the financial press focuses attention on whether firms' quarterly or annual reported earnings exceeded forecasted earnings (Burgstahler and Eames, 2006). Moreover, managers are more likely to avoid negative earnings surprises than to avoid either losses or earnings decreases (Brown and Caylor, 2005).

The recent significant focus on earnings surprises seems primarily due to the fact that market participants are sensitive to earnings surprises. Indeed, prior literature concludes that market significantly rewards (penalizes) meeting or beating (missing) earnings expectations (Bartov et al., 2002; Kasznik and McNichols, 2002; Lopez and Rees, 2000).

If managers have financial expertise to sufficiently perceive such market reactions to earnings surprises, those managers will attempt to actively and opportunistically participate in earnings surprise game in order increase (decrease) stock price by meeting or beating (missing) earnings target. Particularly, this thesis focuses on managers' incentive to miss earnings targets prior to option reissues acting in their own self interests, because managers as employee stock option holders potentially benefit from the lower stock price at the option reissue date.

3.1.1 Shift in Earnings Thresholds for Managers to Achieve

In the past, specifically before mid-1990s, managers usually seek to avoid either earnings losses (negative earnings) or earnings decreases (negative earnings changes), rather than avoid negative earnings surprises (Burgstahler and Dichev, 1997; Degeorge et al., 1999). However, since mid-1990s, managers are more focused on meeting or beating consensus analysts' earnings forecasts, than simply avoiding negative earnings or earnings changes (Dechow et al., 2003; Brown and Caylor, 2005)³⁷.

The shift in managers' earnings thresholds might be due to investors' growing emphasis on earnings surprises in their valuation of securities. Indeed, it has been well established that negative earnings surprises often have severe adverse consequences in the security market (Skinner and Sloan, 2002). Furthermore, this negative market response has become more serious for negative earnings surprises than for either negative earnings or negative earnings changes (Brown and Caylor, 2005). Brown and Caylor (2005) also indicate several reasons why recent investors place much more emphasis on analyst forecasts as a threshold. First, the media coverage given to analyst forecasts significantly increased. Second, the number of analyst following and the number of firms covered by analysts are both increased. Lastly, the accuracy and precision of analyst forecasts are significantly increased recently.

³⁷ Dechow et al. (2003) examine *annual* earnings surprises and Brown and Caylor (2005) examine *quarterly* earnings surprises, empirically. Inconsistent with the common result of these two studies, Graham et al. (2006) report that 84.3% of the survey participants pick as the most important threshold the earnings number of same quarter in the previous fiscal year, rather than analysts' consensus estimate. However, Brown and Caylor (2005) note that the survey result by Graham et al. (2006) provides evidence that what managers say their priorities are regarding achieving quarterly thresholds differs from what they actually do.

As a result, managers who attempt to maximize the share price are strongly encouraged to meet or beat analysts' earnings forecasts and to avoid litigation costs that could potentially be triggered by negative earnings surprises.³⁸

3.1.2 Valuation Consequences to Earnings Surprises

As a recent survey result, Graham et al. (2005) report that CFOs believe there is a severe market reaction to missing the analysts' consensus number. Indeed, some prior studies provide empirical evidence that market unambiguously rewards firms which meet or beat analysts' earnings expectations, with significantly higher stock returns (Bartov et al., 2002; Kasznik and McNichols, 2002; Lopez and Rees, 2000). Moreover, Skinner and Sloan (2002) and Kinney et al. (2002) show significant stock price declines associated with even small negative earnings surprises. Kinney et al. (2002) find the S-shaped surprise/return relation, suggesting that small negative (positive) earnings surprises are accompanied by large negative (positive) stock returns.

The further question pertains to why the market positively rewards firms meeting or beating earnings expectations. To answer this question, Kasznik and McNichols (2002) empirically investigate whether such a market reward reflects the implications of meeting or beating expectations in the current period for future earnings, or whether it reflects a distinct market premium in itself without regard to future earnings. The evidence in this study indicates that firms that meet or beat earnings expectations tend to

³⁸ Other motivations to meet or beat earnings targets are related to the reputation or compensation issues. Management credibility can be enhanced by consistently achieving the goal of meeting or beating earnings target (Skinner, 1994; Graham et al., 2006). And, CEO annual cash bonuses can be adversely affected when the firm's quarterly earnings fall short of the consensus analyst forecast or the earnings for the same quarter of the prior year, for at least two quarters during the year (Matsunaga and Park, 2001).

experience a sequence of future earnings that is significantly greater than that of firms that do not, supporting that the positive market reaction to meeting or beating earnings targets might be a result of the positive implications for future earnings rather than a distinct market premium. Furthermore, Bartov et al. (2002) find that firms whose quarterly earnings meet or beat earnings expectations show a higher growth in sales and earnings and a higher ROA and ROE than firms with negative earnings surprises, indicating that earnings surprises appear to be a reliable predictor of the firms' future performance.

3.2 Managers' Actions to Avoid Negative Earnings Surprises

Extant prior studies find a disproportional number of cases in recent years where earnings per share are slightly (by a few cents) above analysts' forecasts (Brown, 2001; Burgstahler and Eames, 2006), suggesting that managers might take some actions to avoid negative earnings surprises. In response to this expectation, numerous studies have explored which mechanisms managers utilize in order to achieve the goal of meeting or beating earnings targets (Barton and Simko, 2002; Bartov et al., 2002; Burgstahler and Eames, 2006; Matsumoto, 2002; Brown and Pinello, 2007).

The two main tactics commonly uncovered in the above studies are (1) upward earnings management and (2) downward forecast guidance. In order to avoid negative earnings surprises, managers can manipulate the reported earnings upward through upward accrual management. Second, they can guide analyst forecasts downward through

the private communication between management and security analysts and public channels such as voluntary disclosures.

Particularly, this thesis raises a question whether managers still attempt to guide analyst forecasts even in the regime of Regulation FD, because Regulation FD prohibits the private communications between managers and outside analysts.

3.2.1 Two Primary Mechanisms to Avoid Negative Earnings Surprises

From the numerous papers on earnings surprises, it is well established that firms can meet or beat analysts' earnings forecasts by either managing accruals upward (earnings management) or guiding analysts' earnings forecast downward (expectation management or forecast guidance). Payne and Robb (1997) provide empirical evidence that managers move earnings toward analysts' forecasts when premanaged earnings are below market expectations, suggesting that they use their discretion over accounting accruals to avoid negative earnings surprises.³⁹ On the other hand, Skinner (1997), Kasznik and Lev (1995), Francis et al. (1994) and Soffer et al. (2000) show some evidence of managers' downward expectation management to avoid negative earnings surprises. The common finding of those studies is that companies increasingly tend to pre-warn investors about forthcoming unfavorable earnings, leading to moving market expectations downward to an achievable level.

³⁹ Kasznik (1999) also offers a similar finding on the use of earnings management in earnings surprise games, but he uses management earnings forecasts as a benchmark in earnings surprise games rather than analyst earnings forecasts.

However, for either mechanism to be successful in achieving the goal of avoiding negative earnings surprises, the benefit of avoiding a negative earnings surprise must exceed the cost of managing earnings or the cost of guiding analyst forecasts. As Matsumoto (2002) noted, auditors and boards of directors generally scrutinize questionable or doubtful accounting practices, making earnings management difficult. Moreover, it is unusual to continually achieve the goal of avoiding negative earnings surprises through earnings management, to the extent that accruals reverse in subsequent periods. The tactic of downward forecast guidance also encompasses intrinsic weakness that it could cause a negative stock price reaction at the forecast revision date. Dampening earnings expectations in an attempt to preempt an expected unfavorable earnings surprise would result in a negative price effect. In fact, past research (Kasznik and Lev, 1995; Soffer et al., 2000) shows a significant decline in the stock price of companies who pre-warn investors about forthcoming unfavorable disclosures. Therefore, managers who attempt to guide analyst forecasts downward must believe that the stock price drop due to negative earnings surprises at the earnings announcement are much more costly than a negative stock price reaction due to downward forecast guidance.

Some previous studies treat upward earnings management and downward expectations management as complementary mechanisms managers use to avoid negative earnings surprises. In other words, managers use *both* upward earnings management and downward forecast guidance to avoid negative earnings surprises (Barton and Simko, 2002; Bartov et al., 2002; Burgstahler and Eames, 2006; Matsumoto, 2002). On the other

hand, managers use these two tactics as substitute ways to achieve their goal of avoiding negative earnings surprises. In some situations, managers tend to choose between earnings management and forecast guidance as the preferred means for avoiding a negative earnings surprise. For instance, the annual reporting process provides managers with fewer opportunities for earnings management than the interim reporting process does, so in earnings surprises surrounding annual reporting, managers prefer forecast guidance to earnings management as a means to avoid negative earnings surprises (Brown and Pinello, 2007).

In addition to the primary two mechanisms described above, managers also manipulate cash from operations through real activity management surrounding earnings surprises (Roychowdhury, 2006; Burgstahler and Eames, 2006; Lin et al., 2006). In particular, Roychowdhury (2006) finds unusually low operating cash flows, unusually high cost of goods sold, and unexpectedly, unusually low discretionary expenses for small negative earnings surprises, whereas, after controlling for forecast error by total assets, there is little evidence showing significant accrual management to achieve meeting or beating analysts' forecasts. Lin et al. (2006) investigate various managers' discretionary actions to meet or beat analysts' earnings forecast, with the sample data from 1993 to 2004. They find that firms use downward guidance and classification shifting earnings management to meet or beat analysts' earnings forecasts and discretionary accruals are only used to a limited extent.

3.2.2 Market Responses to Managers' Actions to Avoid Negative Earnings Surprises

As discussed earlier, it is well established that nonnegative earnings surprises produce higher stock returns in a security market. However, further empirical question arise on whether such nonnegative earnings surprises can be rewarded even though it is achieved through earnings or expectation management. Basically, this question is also related to whether investors are sufficiently capable of differentiating between the genuine nonnegative surprises and the manipulated ones.

The answer to this question is still inconclusive. An extant empirical result shows that while investors appear to apply some discount to the manipulated nonnegative earnings surprises achieved by earnings and expectation management, this discount is very small and not significant, (Bartov et al., 2002). Thus, firms still enjoy higher stock returns even when they use manipulative tactics to avoid negative earnings surprises. This result can be interpreted as evidence that investors are not sophisticated enough to detect management's reporting objectives and to correct for an extractable past pattern of forecast errors. However, Defond and Park (2001) find higher (lower) earnings response coefficients (ERCs) when abnormal accruals suppress (exaggerate) the magnitude of earnings surprises⁴⁰, suggesting that market participants are capable of impounding the pricing implications of abnormal accruals.

⁴⁰ For example, firms which avoid (do not avoid) negative earnings surprises through income-increasing abnormal working capital accruals have lower (higher) ERCs than firms which avoid (do not avoid) negative earnings surprises through income-decreasing abnormal working capitals have.

3.2.3 Forecast Guidance in Post-Regulation FD Regime

On October 23, 2000, the Securities and Exchange Commission (SEC) implemented Regulation FD (Fair Disclosure), which prohibits firms from privately disclosing value-relevant information to select security markets professionals without simultaneously disclosing the same information to the public. Matsumoto (2002) notes that the perception that managers often provide informal guidance was at least partially responsible for the SEC's passage of Regulation FD, and that the regulation FD may diminish a firm's ability to avoid negative earnings surprise through forecast guidance.

Nonetheless, forecast guidance does not of itself violate the regulation FD or other securities laws. Indeed, since implementation of Regulation FD, firms have guided analyst forecasts through other public channels, rather than private access to analysts which is prohibited in regulation FD. For example, many companies began opening their conference calls to the public, and many managers have begun to issue public earnings guidance to the market in press releases, consistent with the requirements of Regulation FD (Feldman et al., 2003). Some recent studies also provide empirical evidence that managers still successfully guide analyst forecasts even in the post-Regulation FD regime (Brown and Pinello, 2007; Lin et al., 2006).⁴¹

The powerful public channel for guiding analysts' earnings forecasts appears to be management earnings forecasts. Prior literature on management earnings forecasts reveals that management earnings forecasts effectively and directly influence analyst

⁴¹ Brown and Panello (2007) and Lin et al. (2006) use the 13 years from 1993 to 2005 and the 12 years from 1993 to 2004 as their sample periods, respectively. Thus, these sample periods include and both the pre- and post-regulation FD period. However, both studies did not consider seriously the effect of regulation FD on forecast guidance.

earnings forecasts (Jennings, 1987; Williams 1996).⁴² In a related study, Baik and Jiang (2006) examine whether management dampens analysts' earnings expectations by issuing management forecasts, and reveal that management successfully induces analysts to lower their earnings expectations to an achievable level.

In addition to management earnings forecasts, managers can utilize other public channels in an attempt to guide analyst earnings forecasts. According to Kazsnik and Lev (1995), firms frequently disclose significant information about current earnings (asset writeoffs, gains on asset sales, load factors, or order backlog) and other operating information that pertains to the long-term (capital expenditures, new products and joint ventures) and that provides signals with respect to future earnings (shareholder payouts, dividend changes, and stock repurchases). Moreover, the recent (early 2000s) advent of "whisper forecasts" (unofficial forecasts passed among traders or on the Internet before earnings announcements) appears to be at least partially attributable to downward guidance in analysts' published forecasts (Bagnoli et al., 1999). Through the above various public channels, managers are still attempting to guide analysts' forecasts to gain some benefits in capital market.

⁴² Jennings (1987) finds the significant association between the unexpected component of the management forecast and the revision in the consensus analyst forecast subsequent to a management forecast, Williams (1996) shows that the accuracy of a prior earnings forecast by management serves as an indicator to analysts of the believability of a current management forecast.

CHAPTER 4

MANAGERS' OPPORTUNISTIC BEHAVIORS AROUND STOCK OPTION REISSUES

4.1 Managers' Opportunistic Behaviors around Stock Option Compensation

Previous literature has shown that managers often use their influential power over corporate governance in order to appropriate wealth from stockholders. For example, managers attempt to modify the terms of their compensation contracts for their own self interests. According to Murphy (1998), "The most pronounced trend in executive compensation in the 1980s and 1990s has been the explosion of stock option grants, which on a Black–Scholes basis now constitute the single largest component of executive pay." Thus, this chapter reviews the prior literature that investigated managers' self-serving behaviors around stock option contracts.

A typical option grant gives the employee the right to buy a specified number of shares at a fixed price, which is usually the stock price at the time of the grant. Based on this structure of a stock option, the option holders can benefit from a low strike price for the granted options and a high stock price at the exercise date. Indeed, prior literature has revealed that that managers' opportunistic actions around stock option compensation are mainly induced by their incentives to have a low (high) stock price at the option grant (exercise) date.

4.1.1 Timing Issues around Stock Option Plans

Extant literature finds significant evidence that managers opportunistically manipulate the timing of the stock option grants (Yermack, 1997; Lie, 2005). The underlying assumption for this timing scheme is that managers can influence the timing of the compensation committee meeting, in the sense that most options are granted as of the day of the compensation committee meeting with an exercise price based upon the market price of the stock at the close of trading on the day of the meeting.⁴³ Managers' timing of option grants are evidenced by the pattern of abnormal stock returns. Specifically, the abnormal stock returns are significantly negative before unscheduled option awards (Lie, 2005) and positive after the awards (Yermack, 1997; Lie, 2005).

However, such a pattern of stock return can also be interpreted as evidence of managers' backdating of the option grant dates. Indeed, Heron and Lie (2007) find that the abnormal stock return pattern around executive option grants is much weaker since August 29, 2002, when the Securities and Exchange Commission required that option grants must be reported within two business days. They interpret this finding as evidence that most of the abnormal return pattern around option grants is attributable to backdating (retroactive timing) of option grant dates.

In addition to typical option grants, repricing stock options can also be timed because managers have a strong incentive to reduce the exercise price of stock options, which is reset to the stock price of the repricing date. According to Callaghan et al.

⁴³ Very few firms base the grant price on a formula that sets the exercise price based on performance relative to the market or industry, although the formula price cannot be lower than the closing price on the grant day (Chauvin and Shenoy, 2001).

(2004), the traditional repricing dates tend to either precede the release of good news or follow the release of bad news in the quarterly earnings announcements, leading to a sharp decline (increase) in stock price prior (subsequent) to repricing dates. They interpret these findings as evidence that CEOs manage the timing of the option repricing date in an attempt to maximize their future option value. In contrast, under the setting of the option exchange program as a new form of repricing, there is little evidence that managers time the option cancellation date or reissue date. Under FIN No.44, the period of at least 6 months and 1 day after option cancellation still gives some leeway to opportunistically time the option reissue date after the waiting period of 6 months and 1 day. Nonetheless, it is reported that almost all firms that execute option exchange programs reissue options at the first business day that was six months and one day after the cancellation of the exchanged options, suggesting that the option reissue date does not appear to be timed (Carter and Lynch, 2007; Coles et al., 2006).

Another timing issue surrounding stock option plans is involved in the timing of voluntary disclosures around stock option grants, rather than the timing of option grant dates. In the cases where options are granted on a regular and predictable schedule, the timing of option grant dates will be essentially worthless.⁴⁴ So, as an alternative tactic, managers might potentially attempt to engage in the timing of the communications of inside information to the market in order to decrease stock price at the pre-determined grant date. Thus, focusing on firms with scheduled awards can distinguish between opportunistic disclosure strategy and opportunistic timing of the awards (Aboody and

⁴⁴ Aboody and Kasznik (2000) identify a firm as having a 'fixed award schedule' when its option award dates are the same every year over the sample period.

Kasznik, 2000; Chauvin and Shenoy, 2001). The analysis of market return surrounding scheduled awards can provide at least partial evidence of managers' timing of information disclosure. Indeed, the previous literature reveals that the abnormal stock return is on average significantly negative during the period preceding the scheduled grant dates (Aboody and Kasznik, 2000; Chauvin and Shenoy, 2001) and significantly positive during the period subsequent to the scheduled grant dates (Aboody and Kasznik, 2000).

Employees' opportunistic timing does not seem to be restricted to the option grants, since the option holders can still benefit from a higher stock price at the date of option exercises. Empirical evidence demonstrates that option exercises are greater (less) when the firm's stock price is high (low) in upcoming periods (Core and Guay, 2001; Carpenter and Remmers, 2001; Huddart and Lang, 2003). In particular, Carpenter and Remmers (2001) show that, after May 1991, option exercises by top managers at small firms precede significantly negative abnormal stock performance, whereas option exercises before May 1991 precede significantly positive abnormal stock performance⁴⁵, suggesting the use of inside information to manage the timing of option exercises.

4.1.2 Earnings Management around Stock option plans

In addition to the timing schemes discussed in the previous section, managers have a strong incentive to manipulate reported earnings in response to agency issues embedded

⁴⁵ In May 1991, the SEC changed the starting date of Section 16(b)'s 6-month "short swing" holding period from the exercise date to the grant date of the option. Before this change, insiders had to hold the stock acquired through option exercise for at least 6 months.

in stock option compensation contracts. Indeed, extant literature explores whether equity incentives arising from stock or option holdings lead to incentives for earnings management. Of particular interest are recent empirical results in Cheng and Warfield (2005) and Bergstresser and Philippon (2006), which suggest that managers are more likely to manipulate reported earnings when their compensation is more closely tied to the value of equity compensation such as restricted stock and option holdings. Cheng and Warfield (2005) also document that managers with high equity incentives arising from stock-based compensation such as stock option and stock ownership are more likely to report earnings that meet or beat analysts' forecasts. Furthermore, Efendi et al. (2007) and Burns and Kedia (2006) provide strong evidence that the sensitivity of the CEO's option portfolio to stock price is positively related to the propensity to misreport financial statements.

As discussed earlier, managers have the incentive to depress (enhance) its share price immediately prior to the option grants (exercises) for their own interests. Consistent with this conjecture, Balsam et al. (2003) find a significantly negative relation between discretionary accruals and subsequent stock option grants. Alternatively, Bartov and Mohanram (2004) document that abnormally positive earnings performance in the pre-exercise period turns to disappointing earnings performance in the post-exercise period, suggesting that managers engage in earnings management in an attempt to increase the cash payout of exercises.

Some recent studies investigate whether managers manipulate firms' reported earnings through accrual management scheme in the period between stock option

cancellation and reissues, in an effort to maximize their stock option value by reducing stock price at the reissue date. However, the results are mixed. Coles et al. (2006) find abnormally low discretionary accruals in the period following announcements of cancellations of executive stock option up to the time the options are reissued, arguing that managers engage in earnings management before the option reissue date in an effort to lower exercise price of the reissued options. This study estimates discretionary accruals with Jones model (1991) with a sample of 159 firms that undertook an option exchange program over the period 2001 through the second quarter of 2002. In contrast, Carter and Lynch (2007) find no evidence that managers take deliberate actions to lower the stock price throughout the six-month window between option cancellation and reissue.

Both studies attempt to compare the amount of discretionary accruals for 6-and-1 repricing firms with those for traditional repricing firms, on an assumption that the managers of the traditional repricing firms have little incentive to engage in earnings management before the repricing dates.⁴⁶ I basically agree with the presumption that repricers can be a good control group to compare with 6-and-1 reissuers, in that the traditional option repricers has a great deal of similarity to 6-and-1 reissues in industry, prior performance, and the incentive to reset employee stock option strike prices. Nevertheless, the direct comparison between those two groups might lead to an incorrect conclusion, because the traditional repricers also engage in earnings management to reduce the strike price at the reissue date, complementing the timing scheme. As Coles et

⁴⁶ As indicated in Carter and Lynch (2007), these two very contrasting results are due to the difference control groups in the two studies. Carter and Lynch (2007) use a control sample of 149 firms that undertook the traditional repricing between January 1, 2000 and June 30, 2002 (consistent with the period of time their treatment firms offer 6-and-1 option exchanges). However, Coles et al. (2006) use a control group of 80 firms repricing options between January 1, 1999 and December 31, 2002.

al. (2006) indicated, earnings management around traditional repricings is also, in and of itself, of interest. From this perspective, the traditional option repricers might not be an appropriate control group in a study to test earnings management before option reissues.

4.2 Hypothesis Development

This section develops testable hypotheses on the managers' incentive to miss earnings targets prior to option reissues in Section 4.2.1 and on the managers' incentive to guide analyst forecasts upward to benefit from missing earnings targets prior to option reissues in Section 4.2.2. Furthermore, in Section 4.2.3 and 4.2.4, I develop the hypotheses on the effect of eligibility of option exchange programs and financial reporting process (annual reporting vs. quarterly reporting) on the managers' incentives discussed in Section 4.2.1 and 4.2.2.

4.2.1 Missing Earnings Targets Prior to Stock Option Reissues

As discussed earlier, the low stock price at the option grant date, which is generally equal to the exercise price of granted options, will increase the option value. Therefore, it is likely that, prior to stock option reissues, managers can have a strong incentive to engage in various opportunistic actions to drop the stock price at the expense of shareholder wealth. Anecdotal evidence and surveys suggest that managers believe that missing earnings targets can cause stock-price drops (Graham et al., 2005). Some empirical studies also provide evidence that market unambiguously penalizes firms which miss analysts' earnings expectations, with significantly lower stock returns (Bartov et al.,

2002; Kasznik and McNichols, 2002; Lopez and Rees, 2000). Moreover, Skinner and Sloan (2002) and Kinney, Burgstahle and Martin (2002) show significant stock price declines associated with even small negative earnings surprises. Especially, Kinney et al. (2002) find the S-shaped surprise/return relation, suggesting that small negative (positive) earning surprises are accompanied by large negative (positive) stock returns.

McAnally et al. (2008) find that the likelihood of missing earnings targets for firms that manage earnings downward increases with fixed stock-option grants⁴⁷. Fixed option grants and option reissues have a similar characteristic that managers are less likely to time the option grant dates. Therefore, I conjecture that managers also may have a strong incentive to miss earnings targets prior to option reissues rather than fixed option grants.

Based on the fact that managers are less likely to time the reissue dates under the option exchange program, I conjecture that managers are more likely to engage in some opportunistic actions to lower a stock price prior to the given stock option reissue date, 6 months and 1 day after option cancellation.⁴⁸ Among managers' various opportunistic actions, I focus on managers' consideration of earnings surprises, because earnings surprises are a more important factor for stock price trajectory of growth firms than non-growth firms (Skinner and Sloan, 2002), and repricers tend to be high growth firms in

⁴⁷ McAnally et al. (2008) considers a grant to be a fixed-date grant if the grant date is within 14 days of the date on which options were granted in either of the previous two fiscal years, i.e. if two or more grants occur within 14 days over a three year period. This definition is consistent with Aboody and Kasznik (2000). Under this setting, the authors attempt to show that their findings are not driven by the other possible explanations such as backdating or opportunistic timing of grants.

⁴⁸ The New York Times article (March 15, 2002), "Option absurdity: Hoping for lower prices," expresses the commonly-held suspicion that a cancellation and reissue provides the perverse incentive for employees to drive down the stock price by the time of reissue.

high-technology industries. One required presumption related to managers' consideration of earnings surprises is that managers already recognize the seriously negative effect of missing earnings target on share price. With this presumption, I hypothesize that managers hoping to reduce stock price prior to option reissue dates have a strong incentive to miss earnings targets deliberately, if actual earnings are publicly announced prior to option reissue dates.

H1: Managers are likely to miss analysts' earnings forecasts prior to stock option reissues.

4.2.2 Managers' Upward Forecast Guidance Prior to Stock Option Reissues

In a survey conducted by Graham et al. (2005), 80.7% of the participants responded that they guide analysts to some degree. Given that this survey was conducted in the year of 2003 when Regulation FD was effective, this survey result is quite implicative in that managers still attempt to engage in forecast guidance even in the regime of Regulation FD. The main hypothesis in this paper is related to managers' forecast guidance in earnings surprise games around the stock option exchange program, which has been initiated coincidentally after the effective date of Regulation FD.

In addition, the survey results support the finding in empirical studies that forecast guidance is more prevalent in firms with greater analyst coverage, perhaps because analysts demand assistance in predicting earnings or analysts cover firms whose earnings are easier to forecast (Lang and Lundholm, 1996). As discussed earlier, firms with higher analyst following are more likely to implement 6-and-1 option exchange program (Zheng,

2003; Coles et al., 2006), increasing the possibility that managers guide analyst forecasts surrounding option reissues.

Some prior studies attempt to investigate analyst earnings forecasts surrounding option awards. Aboody and Kasznik (2000) conclude that analyst forecasts are less optimistically biased prior to scheduled (fixed) awards than they are at other times, suggesting that CEOs manage investors' expectations downward prior to scheduled awards. Zheng (2003) and Lee (2007) also examine analyst forecast errors to assess whether managers in the 6&1 repricing firms manage investors' expectations downward prior to the reissue dates.⁴⁹ In particular, Lee (2007) compares analyst forecast errors between the waiting period – that is, the period between option cancellation and reissues – and the period before the option cancellation or after the option reissues.⁵⁰ He finds that analyst earnings forecasts are more pessimistic during the waiting period compared to either forecasts before the waiting period or those afterwards. The analyst forecasts in Lee (2007) during the waiting period are for the actual earnings announced *after* the waiting period. Rees et al. (2006) show that the frequency of earnings guidance increases with stock option features (grants, exercises, and holding), and find that the guidance direction (downward, neutral, or upward) is consistent with managers' opportunistic behavior to increase their option compensation values.

⁴⁹ Zheng (2003) defines analyst forecast errors in the same way used in Aboody and Kasznik (2000). In these studies, analyst forecast error is defined as the difference the analyst consensus forecast and realized earnings per share scaled by share price at the beginning of the forecast month. Analyst forecast error is calculated for the next quarterly earnings to be announced after the reissue date in one, two, three months prior to the reissue date.

⁵⁰ Lee (2007) defines analyst forecast errors in the same way as that in Zheng (2003), except that Lee (2007) calculate analyst forecast error by scaling the difference by share price before the forecast date. And Lee (2007) drop analyst forecasts, if a forecast is more than 150 days away from the corresponding earnings announcement date.

The analyst forecasts employed in the above studies is one for the quarterly or annual earnings to be announced *after* the option awards, rather than *before* the awards. If the actual earnings are announced *after* the option awards, managers will not face earnings surprises prior to option awards. Consequently, they don't have a chance to miss earnings targets prior to option awards and, thus, don't have an incentive to guide analyst forecasts upward to miss earnings targets. Alternatively, they will attempt to guide analyst forecasts downward to decrease stock price at the option award dates. Indeed, prior studies have shown that analyst forecast errors prior to option awards are significantly negative, suggesting that managers guide analyst forecast downward or pessimistically. The Panel B of Figure A.3 depicts clearly the above pattern of forecast guidance in previous studies.

However, if the actual earnings are announced *before* the option awards, managers will face earnings surprises prior to option awards. In this situation, managers can attempt to miss earnings targets to reduce the stock price at the option award date. From this perspective, this thesis primarily investigates whether managers guide analyst forecasts upward in an attempt to miss earnings targets prior to option reissues contrary to the option grant literature. As depicted in Figure A.2 and the Panel A of Figure A.3, the main setting in this thesis is that the date of actual earnings announcement should be *prior to* option reissues rather than *subsequent to* so that managers will face earnings surprises prior to option reissues. This research design provides the most unique feature that differentiates between my study and previous studies.

Bollinger and Kast (2004) document that managers are more likely to manage analyst expectations downward in an attempt to meet or beat earnings targets when they hold equity compensation packages such as restricted stocks or stock options (Bollinger and Kast, 2004). However, prior to option grants such as option reissues, managers hoping to reduce their exercise prices of the newly granted options have a strong incentive to managing analyst expectations upward in an attempt to miss earnings target.

One assumption for this hypothesis is that managers must believe that positive surprises at the earnings announcement are more costly than an initially higher forecast. Specifically, the upward forecast guidance can in and of itself play a positive role in enhancing stock price, but missing earnings targets accomplished by upward forecast guidance can lead to a more serious drop in stock price. Based on this assumption, I hypothesize as follows:

H2: Managers are likely to guide analysts' earnings forecasts upward in an attempt to miss analysts' earnings forecasts prior to option reissues.

4.2.3 Eligibility of Option Exchange Program

The eligibility to participate in the option exchange program needs to be considered to examine the agency issues embedded in the option reissues. According to Carter and Lynch (2007), 62% of the option exchange programs executed from 2000 to 2002 are available to at least some executives, and 54% are available to all executives. Alternatively, non-executives hold a large share of options outstanding (Core and Guay,

2001) and repricings typically reach employees beyond the executive level (Overman, 1999).

Top executives tend to have easier access to a variety of resources needed to engage in some opportunistic actions prior to option reissues, than non-executives. In detail, they tend to be directly involved in the decision making process for financial reporting and investment decisions. Furthermore, they also can make use of other indirect channels to at least partially influence the decision making process. In contrast, non-executives do not.

Consequently, top executives who are eligible to participate in option exchange program are more likely to engage various opportunistic actions such as earnings management or forecast guidance in order to miss earnings targets prior to option reissues, than non-executives. In other words, the eligibility of top executives to participate in the option exchange program likely incurs higher agency costs at the expense of shareholders' wealth. Therefore, without consideration of the eligibility for option exchange programs, the incentive effect to miss earnings targets before option reissues can be masked. Based upon the above conjecture, I hypothesize as follows:

H1a: Additions of Top executives who are eligible for option exchange programs are more likely to involve firm missing analysts' earnings forecasts prior to option reissues than when no top executives are involved in option exchanges.

To achieve the goal of missing earnings targets, managers are willing to utilize upward forecast guidance along with downward earnings management. Therefore, I

conjecture that top executives are more likely to utilize upward forecast guidance in order to miss earnings targets, than non-executives.

Moreover, the guidance of analyst forecasts seems to be in and of itself beyond the ability of mid- or low-level employees. Prior studies suggest that analyst earnings forecasts can be successfully guided by management earnings forecasts and voluntary disclosures of earnings related information under Regulation FD.⁵¹ Generally, the decisions on whether or not to execute these actions tend to be made by top executives. This conjecture is also supported by the empirical finding by Lee (2007). He finds that analyst earnings forecasts are more pessimistic during the waiting period compared to either forecasts before the waiting period or those afterwards.⁵² However, this result holds only for those firms whose management participates in the option exchange program: when management is excluded, there is little difference between earnings forecasts during the waiting period and earnings forecasts at other times. In my study, I primarily focus on upward guidance of analyst forecasts for the earnings announced prior to option reissues, not subsequent to.

H2a: Additions of top executives who are eligible for option exchange programs are more likely to guide analysts' earnings forecasts upward prior to option reissues than when no top executives are involved in option exchanges.

⁵¹ I am not quite sure whether managers still currently attempt to guide analyst forecasts through private communications with outside security analysts, violating Regulation FD. Nonetheless, it appears that such an illegal action would be much more difficult for mid- and low-level employees to perform than top executives or board members.

⁵² Lee (2007) defines analyst forecast errors in the same way as that in Zheng (2003), except that Lee (2007) calculate analyst forecast error by scaling the difference by share price before the forecast date. And Lee (2007) drop analyst forecasts, if a forecast is more than 150 days away from the corresponding earnings announcement date.

4.2.4 Financial Reporting Process: Annual Reports vs. Quarterly Reports

It has been well established that annual reports are subject to more rigid rules than interim reports (Palepu, 1988), curbing managers' discretion to manage annual earnings. As a result, relative to annual earnings, quarterly earnings can be more easily manipulated in a variety of ways. For example, managers recognize expense more discretionarily in the three quarterly earnings reports than in the annual earnings reports (Elliott and Shaw, 1988). In addition, annual reports are subject to independent audits but auditors' involvement with interim reports is limited (Frankel et al., 2002). Under these circumstances, it is presumed that managers can achieve their goals from earnings surprises with less cost and more easily for quarterly earnings announcements rather than annual earnings announcements. Indeed, Brown and Pinello (2007) provide empirical evidence that, relative to annual reporting, quarterly reporting increases the incidence of nonnegative earnings surprises, suggesting that managers achieve the goal of meeting or beating quarterly earnings targets more effectively than annual earnings targets.

Based on the above discussion, it is quite interesting to test whether the financial reporting process also curbs managers' incentive to miss earnings targets prior to option reissues, as well as meet or beat earnings targets in other general situations. I conjecture that managers can more effectively engage in downward quarterly earnings management prior to option reissues than annual earnings management, increasing the probability of missing quarterly earnings targets prior to option reissues.

H1b: Managers are more likely to miss analysts' quarterly earnings forecasts prior to option reissues than analysts' annual earnings forecasts.

Based on the above discussion, it is presumed that managers are reluctant to utilize earnings management upon annual earnings announcements. Instead, they might prefer forecast guidance as a substitutive way to achieve their goal in earnings surprises upon annual earnings announcements. Contrarily, I expect that managers' propensity to prefer forecast guidance is not strong in quarterly earnings announcements, because managers still make use of earnings management as another usable tactic in quarterly earnings surprises. Indeed, Brown and Pinello (2007) find that managers use downward forecast guidance as an alternative way to avoid negative surprises when their ability to manage earnings upward is constrained. Similarly, but in an opposite direction, I hypothesize that managers use upward forecast guidance as an alternative way to avoid positive surprises when their ability to manage earnings downward is constrained. In other words, managers are more likely to guide analyst forecasts upward prior to option reissues, when the earnings announced prior to option reissues are annual ones rather than quarterly ones.

H2b: Managers are more likely to guide analysts' annual earnings forecasts upward prior to option reissues than analysts' quarterly earnings forecasts.

CHAPTER 5

RESEARCH DESIGN

5.1 Sample Selection

I identify sample firms that undertook an option exchange program over the period of 2000 through 2005 from a search of SEC filings including tender offer statement, 10-K, 10-Q and proxy statement in Lexis/Nexis and Mergent database.⁵³ I exclude the SEC documents that match the search strings but either pertain to duplicate events or do not pertain to option exchange programs. In addition, I eliminate events for which the firm is not available on I/B/E/S, CRSP, or Compustat database.

In March 2001, the SEC issued an order requiring firms offering to exchange options to file a tender offer statement. Accordingly, the data sources for option exchanges before March 2001 are SEC filings such as the 10-Q, 10-K, and proxy statement. For option exchanges after March 2001, I can use the tender offer statement as a supplemental source of data in addition to 10-Q, 10-K, or proxy statement.⁵⁴

⁵³ The search string used in Lexis/Nexis is “option! w/10 six month w/10 one day and filing-date = 2000 [2001; 2002; 2003; 2004; 2005; 2006; 2007] and not form-type (proxy plm)”. This string is same as that used in Carter and Lynch (2007). In addition to this search string, I use the search strings, “six months and one day” w/10 cancel!” in Lexis/Nexis. The search strings used in Mergent are as follows: “6 Months Plus 1 Day”, “Six Month Plus One Day”, and “Six Months Plus One Day”.

⁵⁴ For the traditional option repricings, ExecuComp records for each executive include a 0-1 indicator variable that equals 1 if the company publishes a ‘10-Year Option Repricings’ table in its annual proxy statement and includes data about that particular executive in the table. However, the specific information on option exchange program is not available in Compustat ExecuComp.

However, the tender offer statement does not make sure that the firm actually went through option exchange programs, because it provides only information on the future plan of its option exchange program. Therefore, the other source documents such as 10-Q, 10-K, or proxy statement are required to ensure that the sample firms actually implemented the option exchange programs.⁵⁵

From the above SEC documents, I collect the critical dates around option exchange program such as the announcement date of option exchange program, the filing date of the tender offer statements, the offer date of the option exchange program, the expiration date of the offer, the option cancellation date, and the option reissue date. I also obtain from these documents the information about who is eligible for the option exchange program.

I collect the data of analyst forecasts from Thomson Financial I/B/E/S database. In detail, I obtain individual analyst forecasts for annual or quarterly earnings to be announced prior to option reissues. For each sample firm, I identify the oldest analyst forecast and the most recent analyst forecast before the earnings announcement. The most recent published consensus analyst earnings forecast can be obtained by computing mean (or median) of individual analyst forecasts issued on the most recent date before earnings announcement. The information on actual earnings announced by sample firms also is obtained from I/B/E/S database for the comparison of the actual earnings with forecasted earnings.

⁵⁵ According to Carter and Lynch (2007), some of the announced exchange appeared not to have been completed (that is, the options were never cancelled, the firm filed for bankruptcy or was acquired, etc.).

The other necessary accounting data can be obtained from Compustat database and stock market data including stock price and stock return can be collected from CRSP.

5.2 Measures for Forecast Guidance

It is challenging to operationalize managers' guidance of analyst forecasts. However, the prior literature has developed a measure of downward forecast guidance to meet or beat earnings targets. For this thesis, I adopt the fundamental structures underlying the two measures of downward forecast guidance, which can be also applicable for upward forecast guidance. guidance⁵⁶.

5.2.1 Measure Based on Matsumoto (2002)

According to Matsumoto (2002), forecast guidance is the unexpected portion of the earnings forecast (UEF), measured as the difference between the last published consensus analyst earnings forecast (CF) and the expected analyst earnings forecast ($E[F]$) for the period⁵⁷:

$$UEF_{ijtq} = CF_{itqt} - E[F_{ijtq}]$$

for each firm i , in industry j , in year t , in quarter q

The expected analyst forecast ($E[F]$) is computed by adding the earnings per share (EPS) on the same quarter of the prior year to the expected seasonal change in earnings per share (EPS).

⁵⁶ These two measures are also adopted by Brown and Higgins (2005) and Brown and Pinello (2007).

⁵⁷ Matsumoto (2002) developed the model for quarterly forecast guidance rather than annual. For this thesis, I also measure managers' annual forecast guidance in addition to quarterly. The annual estimation process is quite same as quarterly one. The annual estimation model is quite similar to the quarterly one except that the annual estimation model just consider the annual difference in earnings per share with no need to consider seasonal difference in earnings per share.

$$E[F_{ijtq}] = EPS_{ij(t-1)q} + E[\Delta EPS_{ijtq}]$$

The main issue in Matsumoto's model lies in how to estimate the expected seasonal change in earning per share ($E[\Delta EPS_{ijtq}]$). According to her model, that is computed by modeling the seasonal change in earnings as a function of the prior period's seasonal change in earnings and cumulative excess returns over the current year, as follows⁵⁸:

$$\Delta EPS_{ijtq} / P_{ij(t-1)q} = \alpha_{jt} + \beta_{1jt} (\Delta EPS_{ijt(q-1)} / P_{ij(t-1)(q-1)}) + \beta_{2jt} CRET_{ijtq} + \varepsilon_{ijtq}$$

where:

- ΔEPS_{ijtq} = earnings per share for firm i in four-digit SIC code j in quarter q of the year t , less prior period earnings per share for the same firm as reported by I/B/E/S, where prior period is defined based on the same quarter of the prior year;
- P_{ijtq} = stock price for firm i in four-digit SIC code j at the end of quarter q , as reported by CRSP;
- $CRET_{ijt}$ = cumulative daily excess returns for firm i in four-digit SIC code j in quarter q of the year t obtained from CRSP. Returns are cumulated from 3 days after the prior period's earnings announcement to 20 days before the current period's earnings announcement, where prior period is defined based on the same quarter of the prior year.

I follow Matsumoto's estimation process. The above model is estimated for firm-year using all firm-quarters in that year from the same four-digit SIC code, except those from the firm the parameters are estimated. Also, the model includes only firm-years with at least 10 firm-quarters of data in the same industry. To mitigate the effect of outliers on the parameter estimates, I delete the top and bottom five percent of each variable

$$(\Delta EPS_{ijtq} / P_{ij(t-1)q}, \Delta EPS_{ijt(q-1)} / P_{ij(t-1)(q-1)}, \text{ and } CRET_{ijtq})$$

⁵⁸ This model includes the cumulative excess returns over the year to capture additional value-relevant information that an analyst might use to estimate earnings, under the assumption that stock prices incorporate additional information not reflected in analysts' forecasts.

As a next step, I use the parameter estimates estimated by industry and year, in order to compute the expected seasonal change in earnings per share ($E[\Delta EPS_{ijtq}]$) as follows.

$$E[\Delta EPS_{ijtq}] = \left[\hat{\alpha}_{jt} + \hat{\beta}_{1jt} (\Delta EPS_{ijt(q-1)} / P_{ij(t-1)(q-1)}) + \hat{\beta}_{2jt} CRET_{ijtq} \right] \times P_{ij(t-1)q}$$

Matsumoto (2002) considers analyst earnings forecasts guided downward if the last published consensus analyst earnings forecast (CF) is less than the expected analyst earnings forecast ($E[F]$). In contrast, my study attempts to investigate whether analyst forecasts are guided upward prior to option reissue dates. Thus, I consider analyst earnings forecasts guided upward if the last published consensus analyst earnings forecast (CF) is greater than the expected analyst earnings forecast ($E[F]$).

5.2.2 Measure Based on Bartov et al. (2002)

The second measure of forecast guidance is developed by Bartov et al. (2002). As depicted in Figure A.4, this measure considers the expectation path consisting of the sign of the forecast error (positive, negative, or zero), the direction of the net revision in analysts' forecasts (up, down or zero) and the sign of the earnings surprise (positive, negative or zero). The forecast error is defined as the difference between the actual earnings number and the first forecast for the quarter made subsequent to the announcement of the previous quarter's earnings. The forecast revision is the difference between the latest forecast and the first forecast. The earnings surprise is defined as the

difference between the actual earnings number for the quarter and the last forecast for the quarter made prior to the release of earnings.

Bartov et al. (2002) consider analyst earnings forecasts guided downward if (1) the actual earnings number is less than the first forecast, (2) the latest forecast is less than the first forecast, and (3) the actual earnings number is greater than the latest forecast. Thus, I can consider analyst earnings forecasts guided upward if (1) the actual earnings number is greater than the first forecast, (2) the latest forecast is greater than the first forecast, and (3) the actual earnings number is less than the latest forecast.

5.3 Statistical Analyses

5.3.1 Missing Earnings Targets Prior to Option Reissues

Testing of the hypothesis 1 and 1b require the comparison between the sample option reissue firms and control firms. So, I construct the following logistic regression model.

$$\begin{aligned} \text{Prob (Miss}_{it}=1) = & \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 \text{Loss}_{it} + \beta_5 \text{Size}_{it} \\ & + \beta_6 \text{Leverage}_{it} + \beta_7 \text{Growth}_{it} + \beta_8 |\text{FE}|_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \\ & \dots\dots\dots (1) \end{aligned}$$

In the equation (1), the dependent variable, ‘Miss’, is a dichotomous variable, which is coded 1 if the announced quarterly or annual earnings are less than the mean of the most recent analysts’ earnings forecasts before earnings announcements. However, a dichotomous variable such as ‘Miss’ often does not capture the full variation, reducing

model's explanatory power. Thus, I also perform the following OLS regression as a complementary analysis to the logistic regression.

$$\begin{aligned} \text{Earnings_Surprise}_{it} = & \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 \text{Loss}_{it} + \beta_5 \text{Size}_{it} \\ & + \beta_6 \text{Leverage}_{it} + \beta_7 \text{Growth}_{it} + \beta_8 |\text{FE}|_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \\ & \dots\dots\dots (2) \end{aligned}$$

The dependent variable in the equation (2) is 'Earnings_Surprise,' which quantifies the amount of earnings surprises. I compute this variable by subtracting actual earnings from mean of last analyst forecasts and scaling the amount by stock price at the date of first analyst forecasts. Thus, the negative (positive) sign of this variable denotes positive (negative) earnings surprises.⁵⁹

For both logistic and OLS regression model, I attempt to compare managers' incentive to miss earnings targets prior to option reissues with that in control firms. Thus, the dummy variable, 'Reissue', is employed with 1 for firms implementing option exchange program, and 0 for the control firms. According to the hypothesis 1, I expect the coefficient of 'Reissue', β_1 , to be positive, for both logistic and OLS regression models.

The variable of 'Qua' is employed to test the hypothesis 1b that missing earnings targets prior to option reissues would be more prevalent when the earnings announced prior to option reissues are quarterly ones rather than annual ones. The variable of 'Qua' is coded 1 if the earnings announced prior to option reissues are quarterly ones, and 0 for

⁵⁹ To make the expected sign of 'Earnings_Surprise' consistent with logistic regression, I subtracted actual earnings from mean analyst forecasts.

annual ones. If the hypothesis 1b works, the coefficient (β_3) of interaction term ‘Reissue*Qua’, is expected to be positive.

The above regression models include firm-level controls that may influence the extent of managers’ incentive to miss earnings targets.⁶⁰ Brown (2001) finds that loss firms are more likely to miss analyst estimate, so I control for loss firms using a dummy variable of ‘Loss’ which is equal to 1 if actually reported EPS for the current quarter is negative (0 otherwise). Thus, I expect the coefficient of ‘Loss’, β_4 , to be positive. In addition, Matsumoto (2002) argues that larger (smaller) firms are more likely to meet or beat (miss) analyst earnings estimates, so I use a control variable of ‘Size’ measured by the logarithm of total assets. The coefficient of ‘Size’, β_5 , is expected to be negative. I include ‘Leverage’, measured as long-term debt scaled by total assets, to assess firms’ default risk (DeFond and Jambalvo, 1994; Sweeney, 1994). High leverage increases firms’ proximity to debt default, reducing managers’ opportunistic incentive to miss earnings targets. Thus, I expect the coefficient of ‘Leverage’, β_6 , to be negative. I control for firm growth using the book-to-market ratio. According to Skinner and Sloan (2002), growth stocks exhibit an asymmetrically large negative price response to negative earnings surprises. I expect the coefficient of ‘Growth’, β_7 , to be negative, because managers in growth firms are more likely to miss earnings targets prior to option reissues. Matsumoto (2002) argues that the probability of meeting or beating (missing) earnings targets is a decreasing (increasing) function of forecasting uncertainty, so I use as the proxy of forecasting uncertainty the absolute value of the forecast error ($|FE|$). Thus, the

⁶⁰ These control variables are also adopted in McAnally, Srivastava, Weaver (2008).

expected sign of the coefficient of $|FE|$, β_8 , is positive. Finally, I consider industry and year fixed-effects by including dummy variables for year and industry.

In order to test the hypothesis 1a, I compare managers' incentive to miss analyst forecasts between 'executive' option reissue firms and 'non-executive' option reissue firms within sample option reissue firms.⁶¹ So, I construct the following additional logistic regression model.

$$\begin{aligned} \text{Prob}(\text{Miss}_{it}=1) = & \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ & + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 \text{Loss}_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Leverage}_{it} + \beta_{10} \text{Growth}_{it} + \beta_{11} |FE|_{it} \\ & + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned} \quad \dots\dots\dots (3)$$

In the equation (3), I adopt new dummy variable, 'Exec'. In some companies, all employees are eligible to participate in option exchange programs. However, some other firms exclude top executives from the eligible employees for option exchange programs. Thus, the variable of 'Exec' has 1 if the option exchange program is available for all employees including top executives, and 0 if it is not available for top executives. Based on the conjecture that top executives are more actively involved in missing earnings targets prior to option reissue dates, the expected sign of β_1 would be positive. I also include a variable of 'Elapse' representing the elapsed time between the earnings announcement and the option reissue date. I expect that managers have strongest incentive to missing earnings targets when option reissues follow immediately after

⁶¹ Henceforth, 'executive' option reissue firms are referred to as firms implementing option exchange programs that are available to both top executive and non-executive employees. And 'non-executive' option reissue firms are referred to as firms implementing option exchange programs for which top executives are not eligible.

missing earnings target. Thus, I expect the coefficient of ELAPSE, β_3 , to be negative. I employ the interaction terms, ‘Exec*Qua’ and ‘Exec*Elapse’, in order to test whether the difference in managers’ incentives to miss analyst forecasts between ‘executive’ option reissue firms and ‘non-executive’ option reissue firms can be changed by financial reporting process (annual vs. quarterly) or the elapsed time between the earnings announcement and the option reissue date.

I also perform the following OLS regression as a complementary analysis. In the equation (4), I adopt with the continuous variable, ‘Earnings_Surprise’, for the similar reason I mentioned earlier. The variable definitions are same as those in the previous regression models.

$$\begin{aligned} \text{Earnings_Surprise}_{it} = & \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ & + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 \text{Loss}_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Leverage}_{it} + \beta_{10} \text{Growth}_{it} + \beta_{11} |\text{FE}|_{it} \\ & + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned} \quad \text{..... (4)}$$

5.3.2 Upward Forecast Guidance Prior to Option Reissues

Using the two measures of upward forecast guidance, which were discussed in Section 5.2, I investigate whether managers guide analyst forecast upward to miss the earnings target prior to option reissues. In order to test the hypothesis 2, and 2b, I run the following logistic regression model.

$$\begin{aligned} \text{Prob}(\text{BFG}_{it}=1) = & \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 |\text{FE}|_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Skew}_{it} \\ & + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned} \quad \text{..... (5)}$$

$$\begin{aligned} \text{Prob}(\text{MFG}_{it}=1) = & \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 |\text{FE}|_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Skew}_{it} \\ & + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned} \quad \text{..... (6)}$$

In the equation (5), the dependent variable is ‘BFG’, which is a binary variable representing upward forecast guidance based on Bartov et al. (2002). ‘BFG’ is set to be 1 if last consensus analyst forecast is higher than first consensus analyst forecast (positive forecast revision), and 0 if last analyst forecast is lower than first consensus analyst forecast (negative forecast revision) or there is no forecast revision. In the equation (6), the dependent variable is ‘MFG’, represents upward forecast guidance based on Matsumoto (2002). ‘MFG’ is set to be 1 if last consensus analyst forecast is higher than the expected forecast level computed by the model, 0 otherwise.

As supplemental analyses, the following OLS regression models are also run with the continuous dependent variables, ‘BFGUP’ and ‘MFGUP’.

$$\text{BFGUP}_{it} = \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 |\text{FE}|_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \quad \dots\dots\dots (7)$$

$$\text{MFGUP}_{it} = \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 |\text{FE}|_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \quad \dots\dots\dots (8)$$

In the equation (7), I compute the dependent variable, ‘BFGUP’ based on Bartov et al. (2002). ‘BFGUP’ is computed by subtracting the first analyst forecast from the last analyst forecast and scaling the amount by the stock price at the date of first analyst forecast. In the equation (8), I compute the dependent variable, ‘MFGUP’ based on Matsumoto (2002). ‘MFGUP’ is computed by subtracting the expected analyst forecast from the last analyst forecast and scaling the amount by the stock price at the date of first analyst forecast.

According to the hypothesis 2 that managers in sample reissue firms are more likely to guide analyst forecasts upward than those in control firms, I expect the coefficient of ‘Reissue’, β_1 , to be positive, for both logistic and OLS regression models. Also, if the hypothesis 2b works, the coefficient (β_3) of interaction term ‘Reissue*Qua’, is expected to be negative. Upward forecast guidance prior to option reissues would be more prevalent when the earnings announced prior to option reissues are annual ones rather than quarterly ones.

I control for uncertainty in the forecasting environment because it is likely more difficult for managers to guide analysts' forecasts when uncertainty is high. I use as a proxy of forecasting uncertainty the absolute value of the forecast error ($|FE|$). Thus, I expect the coefficient, β_4 , to be negative. Moreover, I add variables representing forecast properties in order to mitigate the confounding effects due to the problem that the results can be due to analyst forecast bias rather than managers' forecast guidance. Gu and Wu (2003) find that earnings skewness is significantly related to analyst forecast bias. So, I adopt the control variable of ‘Skew’, which is measured by the statistical skewness of the actual earnings over the past periods. Finally, I control for firm size by adding the variable of ‘Size’, measured as the logarithm of total assets, because larger firms have less optimistic biases in analysts' forecasts (Brous and Kini, 1993; Brown, 1997; Das et al. 1998).

In order to test the hypothesis 2a, I compare managers' incentive to guide analyst forecast upward between ‘executive’ option reissue firms and ‘non-executive’ option

reissue firms within sample option reissue firms. So, I construct the following additional logistic regression model.

$$\begin{aligned} \text{Prob}(\text{BFGUP}_{it}=1) = & \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ & + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 |\text{FE}|_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned} \quad (9)$$

$$\begin{aligned} \text{Prob}(\text{MFGUP}_{it}=1) = & \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ & + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 |\text{FE}|_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned} \quad (10)$$

I also perform the following OLS regression as a complementary analysis with the continuous variable, ‘BFGUP’ and ‘MFGUP’ in the same way.

$$\begin{aligned} \text{BFGUP}_{it} = & \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ & + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 |\text{FE}|_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned} \quad (11)$$

$$\begin{aligned} \text{MFGUP}_{it} = & \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ & + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 |\text{FE}|_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned} \quad (12)$$

Based on the hypothesis 2a that that top executives are more actively involved in upward forecast guidance prior to option reissue dates, the expected sign of β_1 would be positive. Also, I expect the coefficient of ‘Elapse’, β_3 , to be negative, in the sense that managers have strongest incentive to guide analyst forecasts upward in an attempt to miss earnings targets when option reissues follow immediately after missing earnings target. I employ the interaction terms, ‘Exec*Qua’ and ‘Exec*Elapse’, to test whether the difference in managers’ incentives to guide analyst forecasts between ‘executive’ option reissue firms and ‘non-executive’ option reissue firms can be changed by financial

reporting process (annual vs. quarterly) or the elapsed time between the earnings announcement and the option reissue date.

CHAPTER 6

ANALYSIS OF RESULTS

6.1 Sample Description

Table B.1 summarizes the sample selection process to collect testable option exchange programs implemented from 2000 to 2005. The total number of SEC documents initially retrieved with the search strings is 3,292. From the SEC documents, I exclude the total 2,828 SEC documents that match the search strings but either pertain to duplicate events or do not pertain to option exchange programs. Also, I exclude the total 95 option exchange programs where I do not find SEC documents showing that options were actually reissued after cancellation. As a last step, I exclude 41 option exchange programs which are missing in the databases such as CRSP, IBES, or Compustat. From the above sample selection process, I select the 328 testable option exchange programs as a final sample for my study.

Table B.2 presents descriptive statistics related to the characteristics of the 328 sample option exchange programs implemented from 2000 to 2005.⁶² Panel A provides distribution by year of the sample option exchange programs. I find that only six option exchange programs were offered in 2000. As Carter and Lynch (2007) commented, this

⁶² Carter and Lynch (2007) report that the total 138 option exchange programs were offered from 2000 to June 30, 2002. According to Coles et al. (2006), the total number of option exchange programs implemented from 2001 to 2002 is 159.

finding is interesting since the new accounting rule based on FIN No. 44 took effect in July 2000. Around 74% of the total option exchange programs were offered in 2001 and 2002, and the number of implemented option exchange programs declines since 2002. Pursuant to the schedules of the option exchange programs, around 71% of the option exchange programs reissued options in 2002 and 2003. Due to the adoption of a ‘fair-value-based method’ by SFAS 123 (Revised), firms would not continue to have the accounting benefit resulting from the implementation of option exchange programs. Consistent with this conjecture, I could not find any option exchange programs offered after June 15, 2005, which is the effective date of SFAS 123 (Revised).

Panel B provides the distribution of eligibility of sample option exchange programs. The 183 (56%) option exchange programs out of the total 328 option exchanges are available to all employees including top executive officers. However, the 105 (32%) option exchange programs are available to only non-executive low level employees.⁶³

Panel C provides the industry distribution of sample option exchange programs. The 38% of sample reissue firms are clustered in the “business services” industry with two-digit SIC code 73. Specifically, those firms are mainly engaged in software development and networking services. Although this proportion is a little lower than those of Carter and Lynch (2007) and Coles et al. (2006), the proportion of this industry

⁶³ Carter and Lynch (2007) report that 62% of their sample option exchange programs are available to all employees including top executives and 38% are available to only non executive employees.

is still highest among all industries.⁶⁴ The industry with the second highest proportion is “Electronic & other electric equipment” with two-digit SIC code 36. This industry distribution is also similar as that of traditional repricers, which is reported in Carter and Lynch (2001) and Chidambaran and Prabhala (2003).

The descriptive statistics for the number of calendar days between the critical dates in my study are shown in Figure A.5. In Figure (a), I find that companies close their tender offers around 32 calendar days after the offer dates. And the mean (median) number of calendar days between the option cancellation dates and reissue dates for the sample firms is 186 (185), indicating that firms typically reissue options 6 months and 1 day after cancellation.⁶⁵ Figure (b) provides the timeline related to earnings surprises and forecast guidance prior to option reissues. For the sample option exchange programs with the complete forecast data available, the mean (median) number of calendar days between actual earnings announcement and option reissues is 59 (42), indicating that sample firms, on average, announced the actual quarterly or annual earnings around 2 months prior to option reissues. The mean (median) gap between the last analyst forecasts and earnings announcement is 15 (10) days. To test the forecast guidance based on the measure by Bartov et al. (2002), I collect the first analyst forecasts issued after the earnings announcement date for previous quarter. The mean (median) number of days

⁶⁴ Coles et al. (2006) report that 47% of sample option exchange programs implemented from 2001 to 2002 are clustered in the “business services” industry segment, and Carter and Lynch (2007) also show the 49% of sample reissuers are clustered in this industry.

⁶⁵ Out of the total 328 sample option exchange programs, I have the actual reissue date for 290 exchange programs. For the remaining 38 firms, the SEC documents report only reissue month (e.g., July 2003) without specifying the specific date. So, for those firms, I infer that the options were reissued at the 6 month and 1 day after cancellation within the specified month. Carter and Lynch (2007) also report that 15 firms out of 137 total sample firms have the similar cases.

between the first analyst forecasts and last one is 61 (63). Pursuant to the presumption of Bartov et al. (2002), managers will attempt to guide analysts' forecasts during this around 2 month period.

6.2 Stock Return Patterns Prior to Option Reissues

In this section, I examine stock return patterns around option reissue dates to investigate whether managers respond to their self-serving incentive to lower the stock price prior to option reissues. Managers would have a strong incentive to decrease stock price prior to the option reissue dates, since the exercise price of newly reissued options tend to be determined to the level of stock price at the option reissue dates.

Following the event study methodology of Dodd and Warner (1983), I calculate daily market-adjusted abnormal returns for the option reissue firms by using the CRSP NYSE/AMEX/Nasdaq value-weighted index. The market model estimation period includes both a pre-event (days -480 to -241) and a post-event period (days $+121$ to $+360$), with day 0 defined as the reissue date identified in the SEC documents.⁶⁶ This implies that the pre-event estimation period ends 120 days prior to the option cancellation. The test period starts 120 days prior to the option cancellation date and ends 120 days subsequent to the option reissue date. Adopting this approach can exclude some systematic stock price movements that would be expected preceding the reissue dates, as well as following the reissue dates. For the validity of estimation period, each of the

⁶⁶ I do not include the period of days -240 to -121 in my estimation period, in a sense that, in this period – that is, prior to option cancellation - stock prices of sample firms tend to have a systematically decreasing pattern. Therefore, the inclusion of this period in the estimation period might lead to a downward bias in estimated coefficients of market model, easily producing positive abnormal returns in event period.

sample reissue firms should have at least 100 stock returns during the estimation period.⁶⁷ From this process, I compute the daily abnormal stock returns for the 313 option reissue events out of the total 328 events.⁶⁸

Figure A.6 depicts the mean cumulative raw return and cumulative abnormal return for each event day from -120 through +120, with day 0 defined as the reissue date. In contrast with the traditional option repricing, the stock return prior to option reissue date does not show a sharply declining pattern. Instead, it appears a little flat at the level of zero from the cancellation date to the 60 days prior to option reissues, and starts to slightly increase from the relative day of -60. The flat stock return pattern in the 6 month and one day period between the cancellation date and reissue date has been already reported by the previous studies with the sample option exchange programs implemented from 2000 to 2002 (Carter and Lynch, 2007; Coles et al., 2006).⁶⁹

However, it would be premature to interpret the flat or slightly increasing stock return pattern as evidence that managers do not take any opportunistic actions to lower stock price prior to option reissues. Instead, the eligibility of option exchange programs can provide a potential explanation for this flat or slightly increasing stock return pattern. As shown in Panel B of Table B.2, the 32% of sample exchange programs exclude the top executive officers from the eligible employees for the programs. If top executives are

⁶⁷ Carter and Lynch (2007) computed market-adjusted returns simply by subtracting the daily value-weighted stock return from CRSP from the firm's daily stock return, without estimating the market model.

⁶⁸ For the 15 option reissue events, stock returns were not available in CRSP database and/or the numbers of estimation stock return data for those events are less than 100.

⁶⁹ Coles et al. (2006) interpret the flat pattern of stock return between cancellation date and reissue date, as evidence that reissuers have poor timing ability and the market was not misled by managers' opportunistic actions to lower stock price.

not eligible for the option exchange programs, their incentive to lower stock price prior to option reissues would be very weak or removed since their incentives are not self-serving but for other eligible low-level employees. Thus, the slightly increasing stock return pattern prior to option reissues can be due to the inclusion of option exchange programs for which top executives are not eligible. In other words, I expect that the stock returns prior to ‘executive’ option reissues would be significantly lower than those for ‘non-executive’ option reissues.

Based on this conjecture, I compare the stock return patterns prior to stock option reissues between the two groups – (1) stock option exchange programs that are available to top executives in addition to the low level employees and (2) stock option exchange programs that are only available to low level employees. Moreover, the firms with stock option exchange programs eligible for only low level employees can be a more appropriate control group to investigate managers’ opportunistic incentive surrounding option reissues.⁷⁰

Figure A.7 show the comparison of cumulative raw returns around option reissue dates between ‘executive’ option reissue firms and ‘non-executive’ option reissue firms. Interestingly, in the period from around the relative day –48, the cumulative raw return for ‘executive’ option reissue firms is lower than that for ‘non-executive’ option reissue firms. Moreover, the cumulative raw return for ‘executive’ option reissue firms has an almost flat pattern up to the option reissue dates, and starts to increase subsequent to

⁷⁰ Indeed, Carter and Lynch (2007) emphasized the appropriateness of control group to ensure the research validity.

option reissue date, whereas that for ‘non-executive’ option reissue firms starts to increase even before option reissue date.⁷¹

However, the result in Figure A.7 does not consider the market effect on individual stock return. Thus, using the market model described earlier, I try to compute cumulative abnormal returns around option reissue dates. Figure A.8 show the comparison of cumulative abnormal returns around option reissue dates between ‘executive’ option reissue firms and ‘non-executive’ option reissue firms. The result is quite similar as that of cumulative raw returns.

In sum, the stock return patterns in Figure A.7 and A.8 provide a clue to explain stock return pattern in Figure A.6. In detail, the slightly increasing stock return pattern prior to option reissue dates in all sample firms might be mainly attributed to the inclusion of some option exchange programs for which top executives are not eligible. More importantly, the comparison results of stock return between ‘executive’ option reissue firms and ‘non-executive’ option reissue firms suggest that managers are more likely to take some opportunistic actions to reduce stock price prior to option reissues when they are eligible for the option exchange programs.

Nonetheless, the further question is whether the flat pattern, not a sharply decreasing pattern, of cumulative stock return can be conclusive evidence that managers try to lower stock price prior to option reissues. At least the following points can be considered for this controversial question. First, as shown in Figure A.7 and A.8, the cumulative stock returns start to rise subsequent to ‘executive’ option reissues, not prior

⁷¹ In contrast, the stock return prior to the traditional repricing dates shows a sharply decline pattern (Callaghan et al., 2002).

to. This finding can suggest that managers try to take actions to increase the stock price subsequent to option reissues, not prior to. In other words, managers tend to delay to the period after option reissues some actions which can induce an increase in stock price. Second, firms implementing option exchange programs tend to cancel their stock options when their stock prices were very low, meaning that the stock price tend to hit the bottom at least 6 months and 1 day prior to option reissues. Therefore, managers can attempt to at least maintain such a low stock price up to the option reissue dates, 6 months and 1 day after the cancellation dates. Indeed, I find that the patterns of mean cumulative raw and abnormal stock returns up to the executive option reissue dates are almost flat, meaning that the stock prices did not significantly fluctuate during the period between the cancellation date and reissue date. Third, from the comparison between Figure A.7 and Figure A.8, the mean cumulative raw and abnormal stock returns prior to ‘executive’ option reissues are much lower than those prior to ‘non-executive’ option reissues. This finding can provide further evidence that managers attempt to curb stock price increase prior to stock option reissues.

For the statistical tests of difference in stock returns between ‘executive’ option reissue firms and ‘non-executive’ option reissue firms, I perform independent two-sample t test for the mean difference and Wilcoxon rank-sum test for the median difference. For those tests, I divide the whole period between option cancellation date and option reissue date into the 4 sub-periods with the same interval of 30 trading days, in order to additionally investigate whether managers’ incentives are affected by the closeness to the

option reissue dates. The period-1 (4) denotes the closest (remote) period to (from) the option reissue date.

In Table B.3, the mean cumulative raw returns in period-1 and period-2 are lower in ‘executive’ option reissue group than those in ‘non-executive’ option reissue group, supporting the findings in Figure A.7 and A.8. This finding can be interpreted as evidence that managers are more likely to attempt to lower stock price prior to option reissues when the option exchange programs are available to top executives, and that managers’ incentive is pronounced in the period close to option reissue dates. The independent two-sample t-test results show that, in the period-1, the mean cumulative raw returns in the ‘executive’ option reissue group (0.0143) is significantly lower than that in the ‘non-executive’ option reissue group (0.0925) at the 1% significance level (t-statistic=-7.82). However, in the period-2, the difference is not statistically significant at conventional level (t-statistic=-1.64). Interestingly, in period-4, I find the mean cumulative raw return is significantly higher in ‘executive’ option reissue group than ‘non-executive’ option reissue group (t-statistic=3.75). Table B.3 also shows that the median cumulative raw returns in all periods except period-4 are lower in ‘executive’ option reissue group than those in ‘non-executive’ option reissue group. For the differences in median cumulative raw returns between the two groups in the 3 periods, Period-1, 2 and 3, are all statistically significant at 1% level (Z-statistic: -9.8320, -4.4977 and -3.1764, respectively). However, in the period-4, the median cumulative raw return is significantly higher in ‘executive’ option reissue group than ‘non-executive’ option reissue group, at 10% level (Z-statistic: 1.6677). The overall results in Table B.3 suggests

that managers in ‘executive’ option reissue firms are more likely to lower stock price prior to option reissues than those in ‘non-executive’ option reissue firms, and that the difference in managers’ incentive between the two groups is more pronounced in the periods close to option reissue dates.

The statistic test results for differences in cumulative abnormal returns are displayed in Table B.4. The results are similar as those for cumulative raw returns in Table B.3. In all the periods except the period-4, the mean or median cumulative abnormal returns between the two groups at conventional level, confirming my expectation that managers are more likely to suppress the stock price increase or delay actions that increase stock price prior to executive option reissues.

I also perform additional statistical tests to investigate whether the slopes of cumulative abnormal returns in Figure A.8 are significantly different between executive option reissue firms (‘Exec’) and non-executive option reissue firms (‘Nonexec’) and between the period prior to option reissues (‘Before’) and the period subsequent to option reissues (‘After’). For the tests, I estimate the slopes by regressing daily cumulative abnormal returns on trading days relative to option reissue date, for each four different groups of eligibility (‘Exec’ vs. ‘Nonexec’) by period (‘Before’ and ‘After’). The tests are performed with the different two periods of the short period starting in day -60 through day +60 and the long period starting in day -120 through day +120.

Panel A of Table B.5 reports the slopes of cumulative abnormal returns for the relatively short period starting in day -60 through day +60. In the group of ‘Exec’, the estimated slope of cumulative abnormal return is not significantly different from zero

before the option reissue date ($\beta_1 = 0.00015$), whereas the slope after the option reissue date is significantly positive ($\beta_1 = 0.00139$). The F-test result shows that the difference in slopes between ‘Before’ and ‘After’ is statistically significant at 5% level (F-statistic: 6.30, p-value: 0.0121), confirming the finding in Figure A.8 that, in the executive option reissue firms, the stock return pattern prior to option reissues is almost flat with no severe fluctuation but it starts to rise sharply subsequent to. In comparison, the slope difference between ‘Before’ and ‘After’ for non-executive option reissue firms is not statistically significant (F-statistic: 2.63, p-value: 0.1049). Also, I compare the slopes between ‘Exec’ and ‘Nonexec’ given each period, in order to examine whether the slopes are significantly different between executive option reissue firms and non-executive option reissue firms. In the period of ‘Before’, the slope of cumulative abnormal return for ‘Nonexec’ is significantly higher than that for ‘Exec’ at 1% level (F-statistic: 7.67, p-value: 0.0056). However, in the period of ‘After’, the slope for ‘Exec’ is significantly higher than that for ‘Nonexec’ (F-statistic: 19.82, p-value: <.0001). The result can be interpreted as evidence that managers in executive option reissue firms are more likely to lower stock price prior to option reissues and delay actions to increase stock price to the period after option reissues some, compared to non-executive option reissue firms. Panel B of Table B.5 reports the slopes of cumulative abnormal returns for the relatively long period starting in day -120 through day +120. In comparison with the result with the relatively short period, the significant difference in slope between ‘Before’ and ‘After’ for the group of ‘Exec’ is much more pronounced (F-statistic: 82.48, p-value: <.0001),

whereas slope difference between ‘Exec’ and ‘Nonexec’ for each period group is not statistically significant.

In sum, the findings in stock return analysis strongly suggests that managers in executive option reissue firms take some more opportunistic actions in an attempt to reduce stock price at the option reissue dates than those in non-executive option reissue firms. This result is quite interesting and contributes to the literature, in that prior studies have disregarded the eligibility of option exchange programs in analyzing the stock return pattern around stock option reissues.⁷² As shown in Figure A.6, the analysis with the combined stock return patterns of all sample option exchange programs can mask the true effect of managers’ opportunistic incentives.

6.3 Earnings Surprises Prior to Option Reissues

The stock return pattern shown in the previous section suggests that managers attempt to curb the stock price increase prior to option reissues in an attempt to reduce the exercise price of the newly reissued options. If so, how can they achieve this self-serving goal? This section reports the results for whether managers deliberately engage in negative earnings surprises in order to lower stock price prior to option reissues.

6.3.1 Sample option reissue firms vs. control firms

The descriptive statistics of the variables to test earnings surprises prior to option reissues appear in Table B.6. The mean value for the dependent variable, ‘Miss’, is

⁷² Coles et al. (2006) and Carter and Lynch (2007) also analyzed stock returns prior to option reissues, but they did not compare them between ‘executive’ option reissue firms and ‘non-executive’ option firms.

0.2923, indicating that the actual reported earnings missed analyst forecasts prior to option reissues in around 29% of sample option programs. The variable, ‘Earnings_Surprise’, measures the quantitative amount of earnings surprises. I compute this variable by subtracting actual reported earnings from mean last analyst forecasts and scaling them by the stock price at the date of first analyst forecasts. The average for this variable is -0.0024 , indicating that on average the actual reported earnings is higher than analysts forecast by 0.24 percent of the stock price. The ‘Exec’ variable denotes whether top executive officers are eligible for the option exchange programs. The mean of ‘Exec’ is 0.5625, indicating that around 56% of sample option exchange programs for the earnings surprise analysis are available to top executives. The mean of ‘Qua’ is 0.6447 indicates that the quarterly (annual) data cover about 64% (36%) of all sample data.⁷³

Table B.7 presents the results for logistic regression and OLS regression to test earnings surprises prior to option reissues.⁷⁴ To control for extraneous factors of earnings surprises, I match each sample option reissue firms with a control firm based on its industry, firm size, and stock return performance prior to the offer date of option exchange program. And, the fixed effect regression methodology is employed by including industry and year dummy variables in the regression models.

In both logistic and OLS regression analysis, I predict that the estimated coefficients of ‘Reissue’ will be positive according to the hypothesis 1 that managers are

⁷³ This finding is due to the sample selection criterion that actual earnings should be reported in the 7 month-period between the offer dates of option exchange programs and option reissues dates. Many sample firms tend to have at least one quarterly earnings announcement in this period, but not the case in the annual earnings announcement.

⁷⁴ To capture the quantitative amount of missing analyst forecasts, I also perform OLS regression with the dependent variable, ‘Earnings_Surprises’, in addition to logistic regression.

more likely to miss analyst forecasts prior to option reissues than managers of control firms. However, the results do not consistently support the expectation. In the logistic regression, the coefficient of 'Reissue' is negative, contrary to the hypothesis, after controlling for firm size, leverage, firm growth and forecasting uncertainty, but not significant at the conventional level. But, the OLS regression result shows that the coefficient of 'Reissue' is positive and marginally significant at the 10% level ($\beta_1 = 0.0052$, p-value = 0.1022).

For the test for the hypothesis 1b that managers are more likely to miss quarterly analyst forecasts than annual analyst forecasts prior to option reissues. In this test, the interaction variable, 'Reissue*Qua', is included in the regression model, and I expect that the estimated coefficient of this variable is positive. In both regression models, the estimated coefficient of 'Reissue*Qua' is not significant at the conventional level.

Among control variables, the variable, 'Loss', has a significantly positive relation with the probability of negative earnings surprise (missing analyst forecasts), supporting the finding of Brown (2001) that loss firms are more likely to miss analyst forecasts.

The insignificant results for the coefficients of 'Reissue' and 'Reissue*Qua' in Table B.7 can be attributed to the sample composition that the reissue firms include both 'executive' option reissue firms and 'non-executive' option reissue firms. As discussed earlier, the managers of 'non-executive' option reissue firms can have very scarce or even no incentive to lower stock price prior to option reissues. And in general circumstance other than some special cases such as option reissues, managers will try to boost stock prices by meeting or beating analyst forecasts. Therefore, I perform further analyses to

compare managers' incentive for negative earnings surprises prior to option reissues between 'executive' option reissue firms and 'non-executive' option reissue firms.⁷⁵

6.3.2 'Executive' option reissue firms vs. 'non-executive' option reissue firms

This section discusses the results for analyses to test the hypothesis 1a that managers in 'executive' option reissue firms are more likely to engage in negative earnings surprise prior to option reissues than those in 'non-executive' option reissues. In both logistic regression and OLS regression, I predict that the estimated coefficients of 'Exec' will be positive according to the hypothesis 1a.

In Table B.8, the estimated coefficients of 'Exec' are positive in both regressions, but they are not statistically significant at conventional level. The result suggests that there is not a significant difference in occurrence rate of negative earnings surprises prior to option reissues between 'executive' option issue firms and 'non-executive' option reissue firms. To validate this result, I also perform the stock return analysis around earnings announcement date, which is prior to option reissue date. If managers prevalently engage in negative earnings surprises prior to executive option reissues, the stock return around the earnings announcement dates would be sharply declining. However, as depicted in Figure A.9, the cumulative abnormal stock return around earnings announcement date for executive option reissue firms does not show a sharply declining pattern compared to that non-executive option reissues, validating the above

⁷⁵ In my opinion, the 'non-executive' option reissue firms would be a more sound control group than the control firms I construct based on firm size, industry, and stock return performance because the 'non-executive' option reissue firms would have all similar characteristics of 'exec' option reissue firms, except that top executives are not eligible for the option exchange programs.

regression result.⁷⁶ The implication of this result is that the significant difference in stock return pattern prior to option reissues between executive option reissue firms and non-executive option reissue firms might not be mainly due to managers' deliberate involvement in negative earnings surprises prior to option reissues. In other words, it seems that managers take some other opportunistic actions in an attempt to reduce the stock price at the option reissue date.

However, it is quite interesting that the estimated coefficient of the interaction variable, 'Exec*Elapse', in the logistic regression model is negative and statistically significant at 10% ($\beta_5 = -0.0147$, p-value = 0.0850). This result means that the coefficient of 'Exec' is significantly increases as 'Elapse' decreases, implying that managers' incentive to miss analyst forecast prior to option reissues significantly increases as the earnings announcement date is close to option reissue date.

Although the effect of the elapsed time between earnings announcement date and option reissue date on managers' incentive prior to option reissue date was not hypothesized in my thesis, it is very implicative in interpreting the whole results. As shown in Table B.6, the mean (median) of 'Elapse' is 62 (55) in calendar days. It means that the gap between earnings announcement date and option reissue date is approximately 2 months. It is questionable whether managers still try to engage in negative earnings surprises even 2 months before option reissue date, since managers' incentive to engage in negative earnings surprises would be the strongest when the actual

⁷⁶ In Figure A.9, it appears that the stock return prior to earnings announcement date for executive option reissue firms has a slightly decreasing pattern from the earnings announcement date around up to the day +5. However, from a further statistical analysis with the cumulative abnormal return from the day -5 to +5, I find that the pattern is not significantly different from that for non-executive option reissue firms.

earnings is reported immediately before option reissue dates. That might be one reason for insignificant estimated coefficient of 'Exec' in the regression models.

6.4 Forecast Guidance Prior to Option Reissues

The regression results in the previous section do not show the consistently significant evidence that the actual earnings reported prior to option reissues miss analyst forecasts. Nonetheless, it is premature to conclude that managers do not have a strong incentive to miss analyst forecasts prior to option reissues in the sense that managers' various attempts to miss analyst forecasts can often fail in the current period when the regulations. Moreover, in post-Regulation FD regime, firms can make use of only public channels in order to guide analysts' earnings forecasts. Thus, it would be much more difficult to achieve the goal of negative earnings surprises by guiding analysts' earnings forecasts. Therefore it would be a more direct test to investigate managers' real activities in an attempt for negative earnings surprises, than to test negative earnings surprises as a consequence. Among their attempts to miss analyst forecasts, I focus on managers' upward guidance of analyst forecasts.

As described in Chapter 5, I adopt the two measures of managers' forecast guidance. The measure developed by Bartov et al. (2002) is mainly based on the forecast revision – that is, the comparison between analysts' first forecast and last forecast. Thus, this measure does not require a specific estimation process, because analysts' first forecast is assumed to be the benchmark to determine whether the last forecast has been guided by managers. In contrast, the measure developed by Matsumoto (2002) is based

on the comparison between the estimated forecast level and analysts' last forecast. Thus, this measure requires a specific statistical model to estimate the benchmark level of analyst forecasts. Table B.9 presents the descriptive statistics of parameter estimates from the model developed by Matsumoto (2002). For quarterly data, the average amounts of parameter estimates for β_1 and β_2 are 0.591 and 0.007, respectively. They are both positive on average and highly significant as Matsumoto (2002) expected, supporting the positive serial correlation in the seasonal change in quarterly earnings (Freeman and Tse, 1989; Bernard and Thomas, 1990) and the positive correlation between the seasonal change in earnings and cumulative stock returns.⁷⁷ However, the estimation results with the annual data do not show such correlations. In Panel C, the average amount of parameter estimate for β_1 is negative ($\beta_1 = -0.044$), but not significantly different from zero.

6.4.1 Sample reissue firms vs. control firms

Table B.10 and B.11 present the results of the logistic and OLS regression models to test whether managers' incentive to guide analyst forecasts upward is significantly stronger in option reissue firms than that in control firms.

According to the hypothesis 2, I expect that the estimated coefficient of 'Reissue' is significantly positive for both measures of forecast guidance. However, the estimated coefficient of 'Rissue' in Table B.10 and B.11 is not significantly different from zero,

⁷⁷ Matsumoto (2002) estimated the coefficients with only quarterly data. The results show that my estimates for the coefficients are quite similar as Matsumoto's, although Matsumoto's estimation data include the different industries and years from those in my study.

meaning that analyst forecasts in option reissue firms are not guided significantly upward compared to those in control firms. Also, the insignificant coefficient of 'Reissue*Qua' does not support the hypothesis 2b that managers are more likely to guide annual forecasts than quarterly forecasts.

The insignificant results for the coefficients of 'Reissue' and 'Reissue*Qua' in Table B.10 and B.11 can be due to the similar reason for the insignificant results for those coefficients in Table B.7. That is, the sample option reissue firms include both 'executive' option reissue firms and 'non-executive' option reissue firms. Furthermore, the control firms selected based on industry, firm size, and stock return performance can be inappropriate to compare sample firms. Therefore, similarly as the previous section, I perform further analyses to compare managers' incentive for upward forecast guidance prior to option reissues between 'executive' option reissue firms and 'non-executive' option reissue firms.

6.4.2 'Executive' option reissue firms vs. 'non-executive' option reissue firms

This section describes the regression results for the comparison of managers' upward forecast guidance between the 'executive' option reissue firms and 'non-executive' option reissue firms. The main focus is on the coefficient of 'Exec'. I predict that the estimated coefficients of 'Exec' will be significantly positive based on the hypothesis 2a that managers in 'executive' option reissue firms are more likely to guide analyst forecasts upward than those in 'non-executive' option reissue firms. Also, I expect that the coefficient of 'Qua' will be negative based on the hypothesis 2b that

managers are more likely to guide analysts' annual earnings forecasts upward prior to option reissues than analysts' quarterly earnings forecasts.

Table B.12 shows the results for the logistic regression results with the two dependent variables defined based on Bartov et al. (2002) and Matsumoto (2002). The coefficients of 'Exec' with both dependent variables are not significantly positive, inconsistent with the hypothesis 2a. As a further analysis, I try to compare cumulative abnormal return around the last analyst forecast date between the groups of 'Exec' and 'Nonexec.' If managers guide analyst forecasts upward, the stock return around the forecast date would be temporarily rising. Figure A.10 shows that, in both groups, the stock return seems increasing around the forecast date - particularly, from the day -10 to +10. However, from a statistical analysis, I cannot find a significant difference in cumulative abnormal return between the groups, consistent with the above regression result. The coefficient of 'Qua' with the dependent variable, 'MFG', is significantly negative at 5% level ($\beta_2 = -1.8465$, p-value=0.0215), supporting the hypothesis 2b that managers are less likely to guide quarterly analyst forecasts upward than annual analyst forecasts. Also I find the coefficient of 'Elapse' is significantly negative ($\beta_2 = -0.0174$, p-value=0.0196). This finding is interpreted as evidence that managers are more likely to guide analyst forecasts upward as the earnings announcement date is closer to option reissue date.

The OLS regression results are presented in Table B.13. Consistent with the hypothesis 2a, the estimated coefficient of 'Reissue' in the OLS regression model with the dependent variable, 'BFGUP', is significantly positive at 5% level ($\beta_1 = 0.0194$, p-

value=0.0109). This result indicates that analysts for ‘executive’ option reissue firms are more likely to revise analyst forecasts upward prior to option reissues than ‘non-executive’ option reissue firms, implying managers’ upward guidance of analyst forecasts. Also, the estimated coefficient of ‘Qua’ in the logistic regression model with the dependent variable, ‘MFG’, is significantly negative at 5% level ($\beta_2 = -1.8465$, p-value=0.0215). This result supports the finding of Brown and Pinello (2007) that managers use forecast guidance as a substitute of earnings management to achieve their goals in ‘annual’ earnings surprises. The negative coefficient of ‘Qua’ means that managers are more likely to guide annual analyst forecasts upward prior to option in order to achieve the goal of annual negative earnings surprises. The additional interesting finding on the regression results is that the estimated coefficient of the interaction variable, ‘Exec*Elapse’, is negative and marginally significant at the 5% level in the OLS regression model with the dependent variable, ‘BFGUP’ ($\beta_5 = -0.0001$, p-value=0.0531), meaning that managers in ‘executive’ option reissue firms are more likely to guide analyst forecasts upward than those in ‘non-executive’ option reissue firms, as the earnings announcement date is closer to option reissue date. This result can be also interpreted in relation to the finding in the previous result of earnings surprises. If managers in ‘executive’ option reissue firms have a stronger incentive for negative earnings surprises prior to option reissues as the elapsed time between the earnings announcement date and option reissue date is shorter, they can have a stronger incentive to guide analyst forecast upward as well when the elapsed time is shorter. The negative estimated coefficient of ‘Exec*Elapse’ in Table B.13 partially confirm this conjecture.

CHAPTER 7

SUMMARY AND CONCLUSION

This thesis investigates an agency issue embedded in option exchange programs that managers can have a strong incentive to lower stock price at the option reissue date at the expense of shareholder wealth.

The stock return analysis provides significant evidence supporting the agency issue described above. Although the cumulative abnormal stock return has a slightly increasing pattern prior to all sample option reissues, the comparison between ‘executive’ option reissues and ‘non-executive’ option reissues demonstrates that cumulative abnormal stock return prior to ‘executive’ option reissues is significantly lower than that of ‘non-executive’ option reissues. Additionally, the difference in abnormal stock returns between the two groups is much more pronounced in the periods close to option reissue date. Therefore, the overall results from the stock return analysis strongly suggest that, prior to ‘executive’ option reissues, managers take some opportunistic actions to lower stock price or delay some actions to increase stock price.

Among opportunistic actions managers can utilize to lower stock price, I investigate whether managers engage in negative earnings surprises prior to option

reissues. The regression results show that negative earnings surprises do not occur more frequently prior to 'executive' option reissues than 'non-executive' option reissues, after controlling for other factors to influence firms' earnings surprises. Nevertheless, I find some evidence that managers' incentive to engage in negative earnings surprises is getting stronger as the earnings announcement date is closer to the 'executive' option reissue date. Even though the results of earnings surprises are not conclusively significant, it is still necessary to investigate managers' forecast guidance as one of their real attempts to achieve the goal of negative earnings surprises. I find only partial evidence that managers are likely to guide analysts' earnings forecasts upward prior to 'executive' option reissues. However, the other results do not show significant evidence that managers are likely to utilize upward forecast guidance to achieve the goal of negative earnings surprises prior to option reissues.

Based on the overall results, I conclude that managers take or delay some actions in order to deter stock price increases prior to 'executive' option reissues. However, it does not appear that they prevalently utilize negative earnings surprises or upward forecast guidance in an attempt to deter stock price increases. That means that they take some other opportunistic actions prior to option reissues to deter stock price increases.

Managers' reluctance to engage in negative earnings surprise and upward forecast guidance might be due to the following three reasons.

The first reason can be the high cost those opportunistic actions can incur. Negative earnings surprises would lead to a sharp decline in stock price, leading to investors' huge loss. If it is proved that the negative earnings surprises are caused by

managers' upward forecast guidance, investors experiencing a big loss tend to file a lawsuit for those actions. Managers can be seriously concerned about this contingent situation in choosing an appropriate action to lower stock price.

Second, the stock price tends to already hit the bottom at the option cancellation date. So, managers do not need a sharp stock price decline for their own self-serving purposes. Instead, they hope to just maintain the stock price level at the cancellation date up to reissue date. In that sense, negative earnings surprise by upward forecast guidance might not be an appropriate action managers utilize.

An additional reason is related to the effectiveness of upward forecast guidance in achieving negative earnings surprises. In the post-Regulation FD, it would be much more difficult to guide analysts' earnings forecasts successfully, since they can use only public channels to guide analyst forecasts. Under the circumstances, managers can be reluctant to use upward forecast guidance to achieve the goal of negative earnings surprises. Managers would attempt to guide analyst forecasts upward prior to option reissues, only when the total benefit from the low exercise price of newly reissued options outweighs the total cost from contingent lawsuit or use of public channels.

However, the above implications or explanations of the results are subject to some limitations and caveat.

First, this study depends on the two measures of managers' forecast guidance. Although the two measures are well developed with reasonable processes, they still have some weaknesses. The measure developed by Bartov et al. (2002) is mainly based on the forecast revision at two dates, so this measure disregards changes of analyst forecasts in

the period between the two dates. Also, the measure developed by Matsumoto (2002) requires estimating the expected forecast level using the estimated coefficients based on the statistical model. However, it is still questionable whether the estimated forecast level based on her model is assumed to be an appropriate level as a benchmark to compare actual forecast.

Second, the sample size in each regression model is relatively small compared to prior studies on earnings surprises, lowering the explanatory power of the model. All other prior studies that investigate managers' incentive to meet or beat earnings surprise or to guide analyst forecasts downward include all data set available in the database as their samples. However, my study investigates earnings surprises and forecast guidance under the special circumstances such as "prior to option reissues", reducing sample size considerably. McAnally et al. (2008) also test managers' incentive to miss analysts' forecasts prior to 'fixed-date' option grants rather than option reissues, so their sample size is much larger than that used in this study.

Finally, the stock return analysis suggests managers take some opportunistic actions to lower stock price prior to 'executive' option reissues. Future research need to explore what possible actions can be taken prior to 'executive' option reissues. Those actions might be much less risky and less costly than negative earnings surprise through upward forecast guidance. In addition, the cost of managers' upward forecast guidance would be very expensive. So, I can conjecture that managers are likely to use upward forecast guidance to achieve negative earnings surprises only if their incentive to do so is extremely strong. Thus, future research can explore possible situations where managers'

benefit from the action outweighs the cost, and continue to investigate managers upward forecast guidance in those situations. Also, if the small sample size might be one of the reasons for the results, future research can replicate the testing prior to ‘fixed-date’ option grants as another type of scheduled option grants.

I hope this thesis can contribute to future research on agency issues embedded in compensation plans and on managers’ opportunistic actions to achieve their self-serving incentives.

APPENDIX A

FIGURES

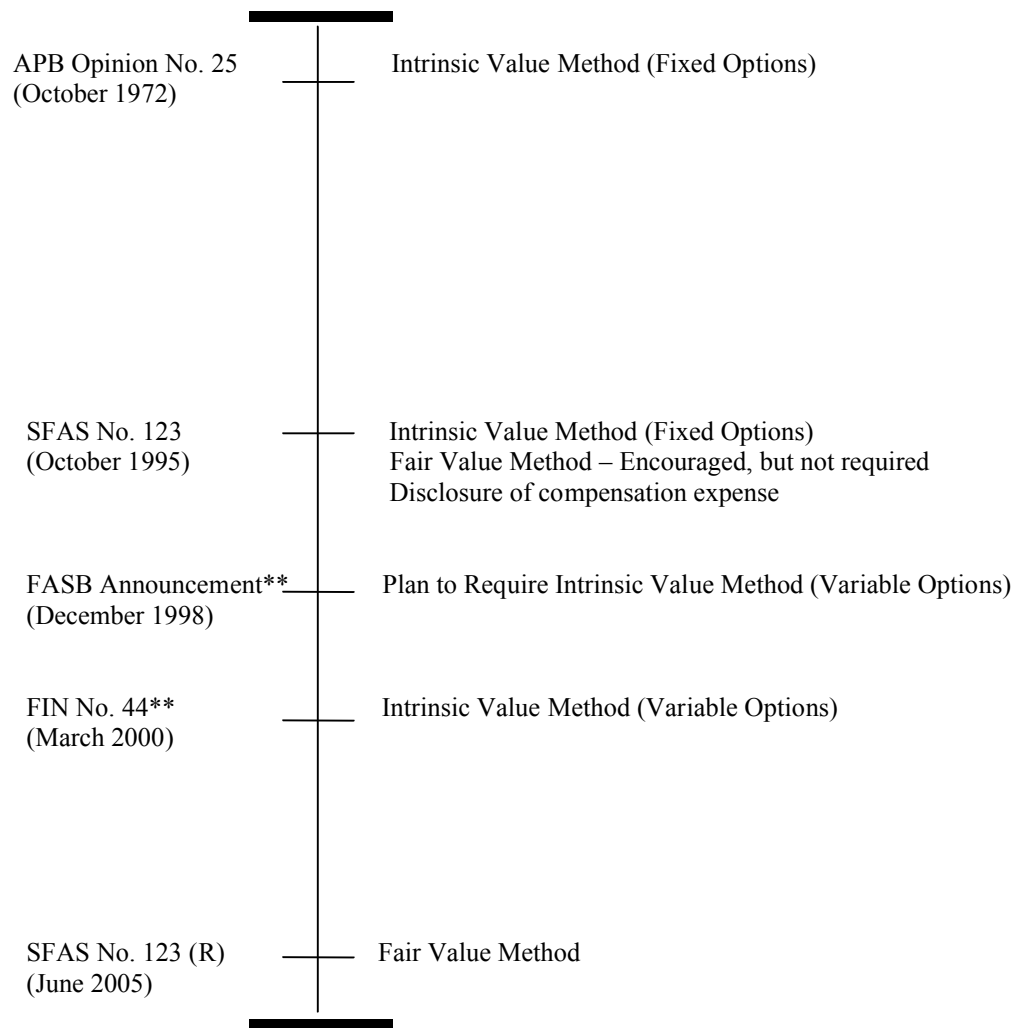


Figure A.1 Accounting standards related to stock option repricing

This figure shows the accounting standards related to stock option repricing. ** denotes the critical standards which gave rise to “6-and-1 option exchange” as a new form of option repricing.

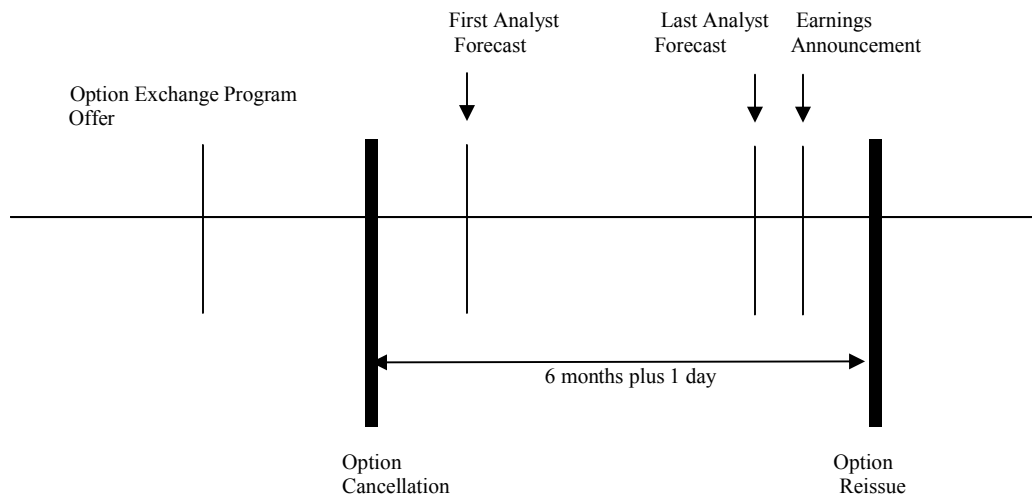


Figure A.2 Timeline of the study

This figure shows the timeline of my study. In the above figure, the first analyst forecast can be issued before option cancellation date as well, but it should be issued after the announcement date of previous quarterly earnings.

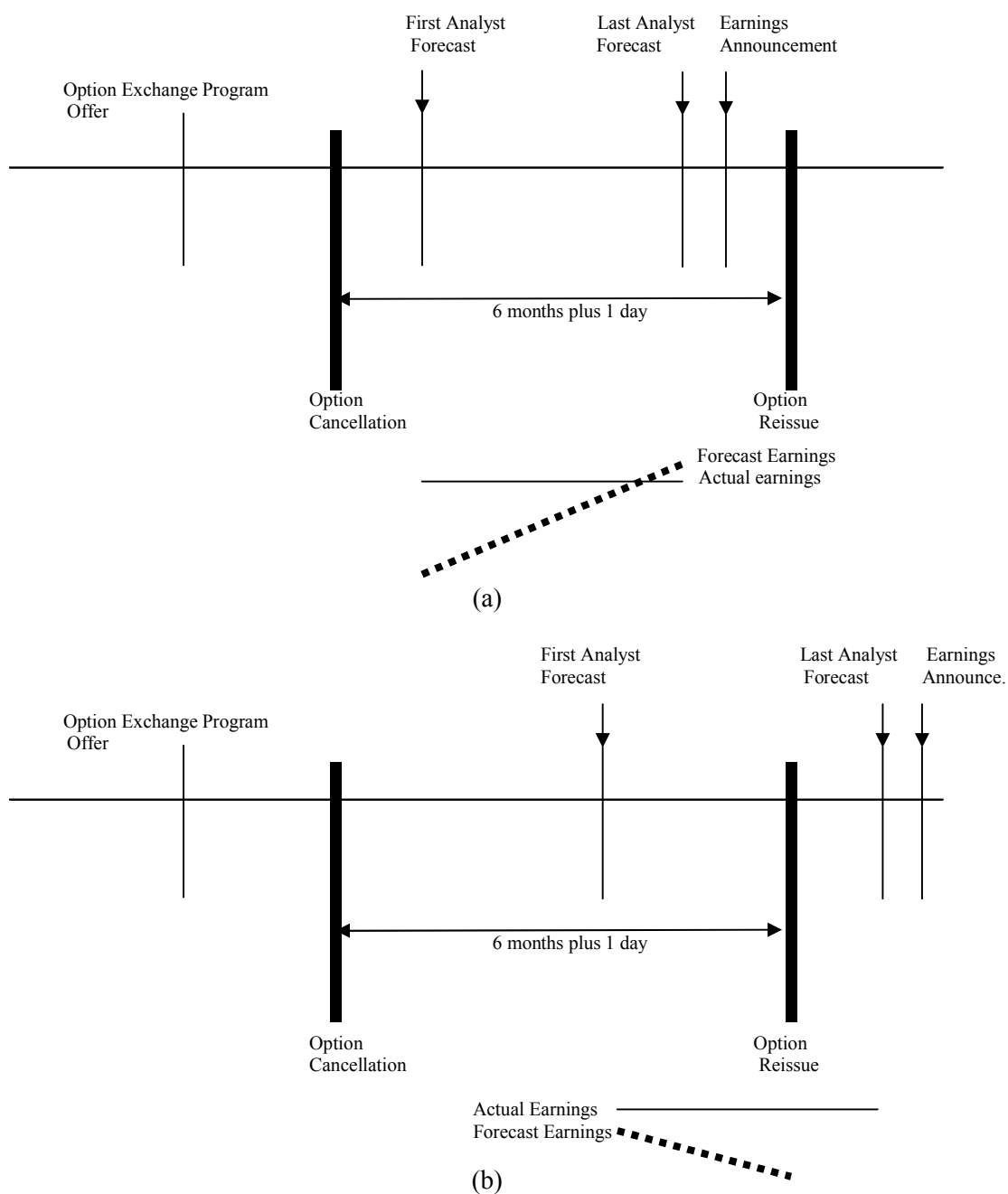


Figure A.3 Forecast guidance around stock option reissues

This figure compares managers' guidance of analyst forecasts between this thesis and prior studies. (a) Figure of expected forecast guidance in this thesis. (b) Figure of forecast guidance documented in prior studies

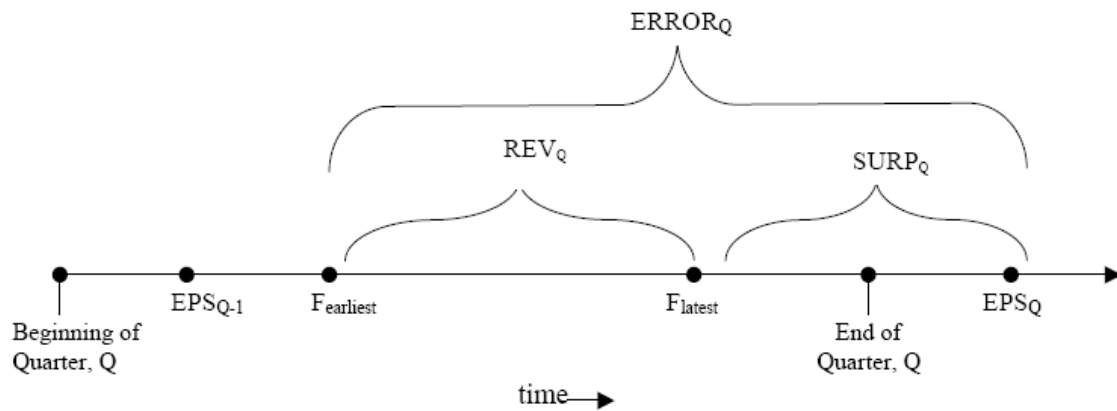


Figure A.4 Structure of the measure developed by Bartov et al. (2002)

This figure shows the structure of forecast guidance measure, which is developed by Bartov et al. (2002). Originally, this measure consists of forecast error, forecast revision, and earning surprise.

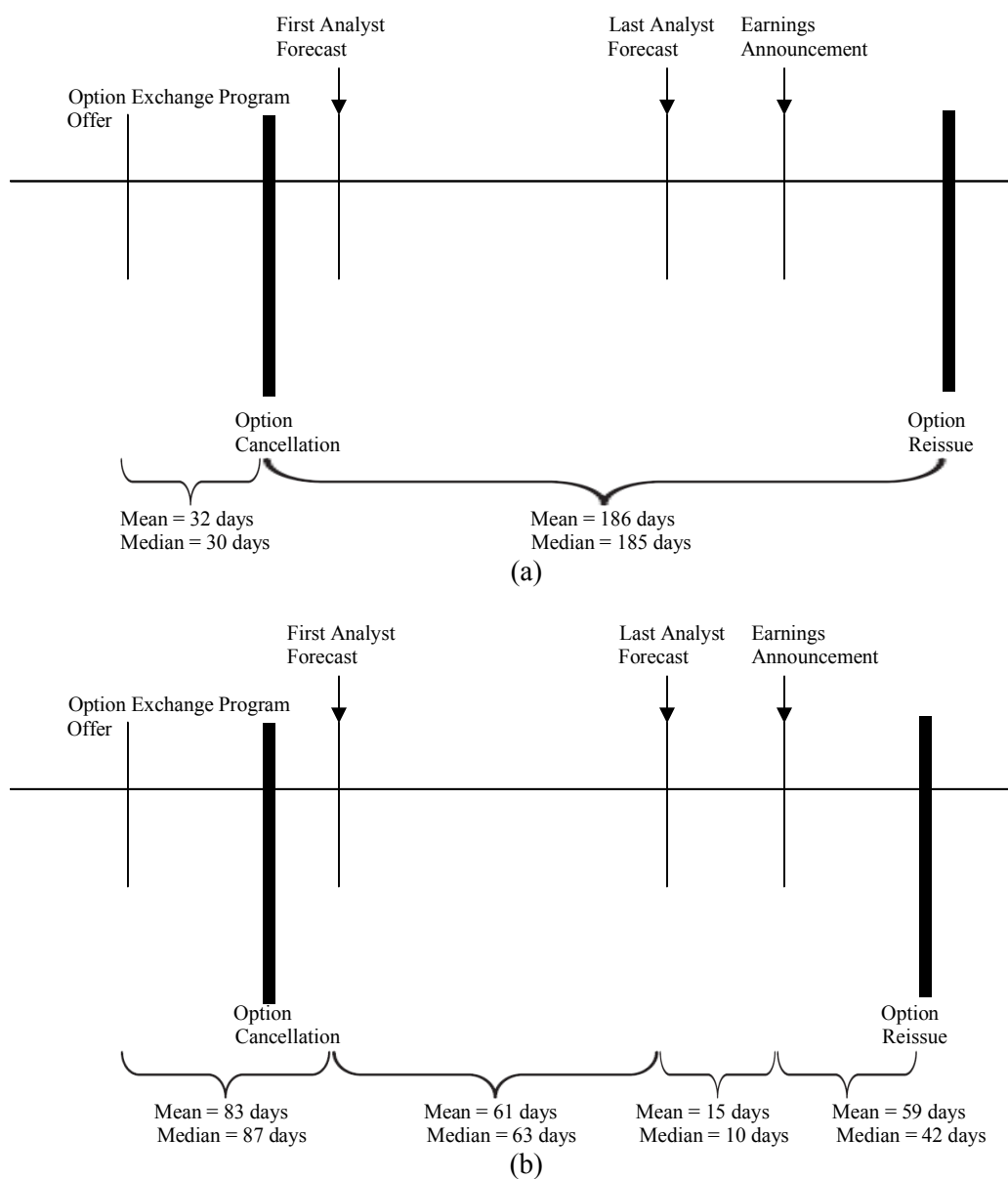


Figure A.5 Descriptive statistics for the periods in the timeline

This figure shows the descriptive statistics or the various periods in the timeline of the study. (a) Mean and median calendar days for the periods surrounding option exchange program. (b) Mean and median calendar days for the periods surrounding analyst forecasts and earnings announcement.

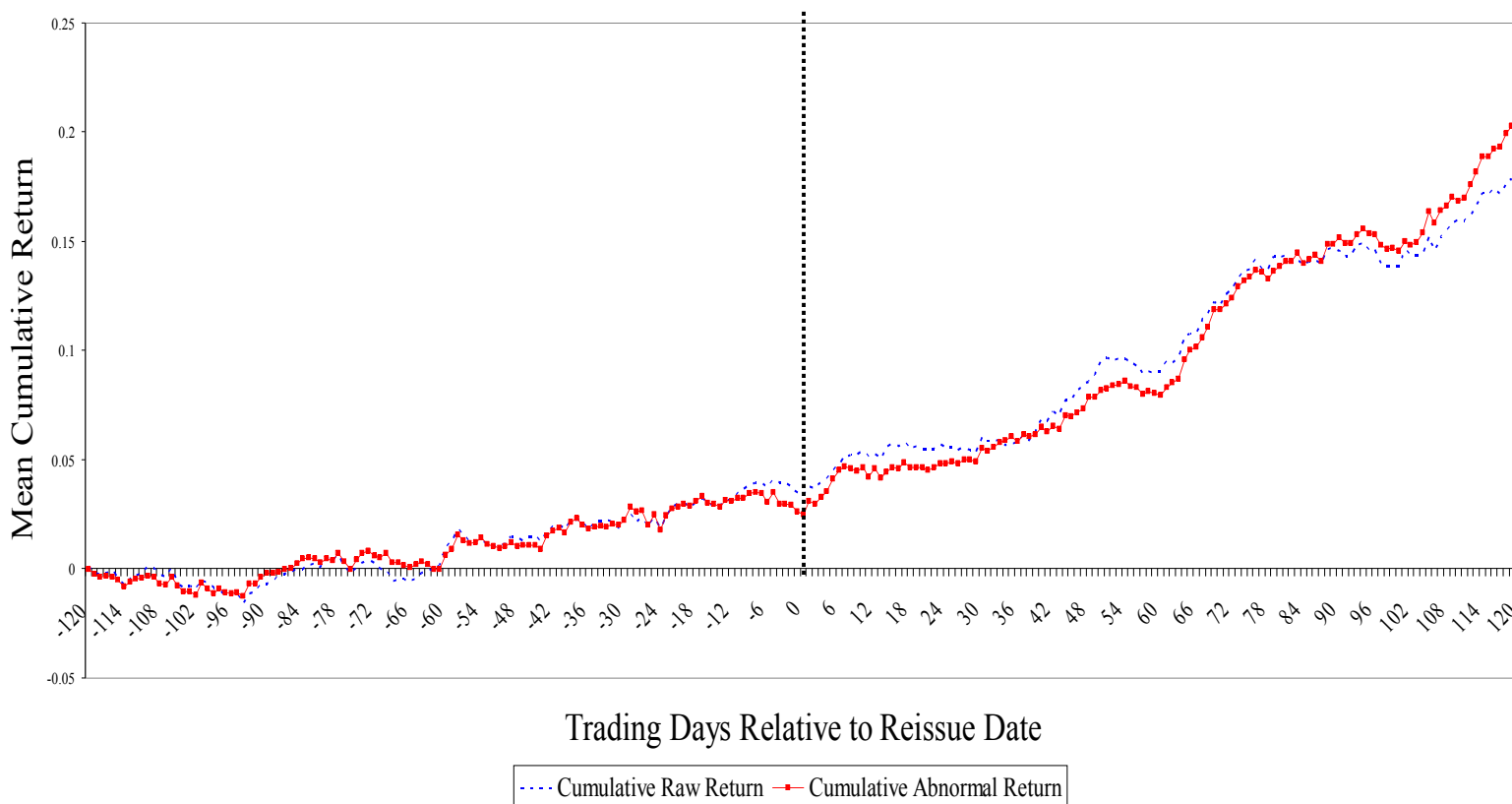


Figure A.6 Daily cumulative stock returns around the reissue dates for all sample reissue firms

This figure shows mean daily cumulative raw and abnormal stock returns around the reissue dates for all sample reissue firms. The sample includes 313 option reissue events that occur during the period 2000 to 2005. I estimate cumulative returns for the 241-day period starting in day -120 through day +120, with day 0 defined as the reissue date identified in the SEC documents.

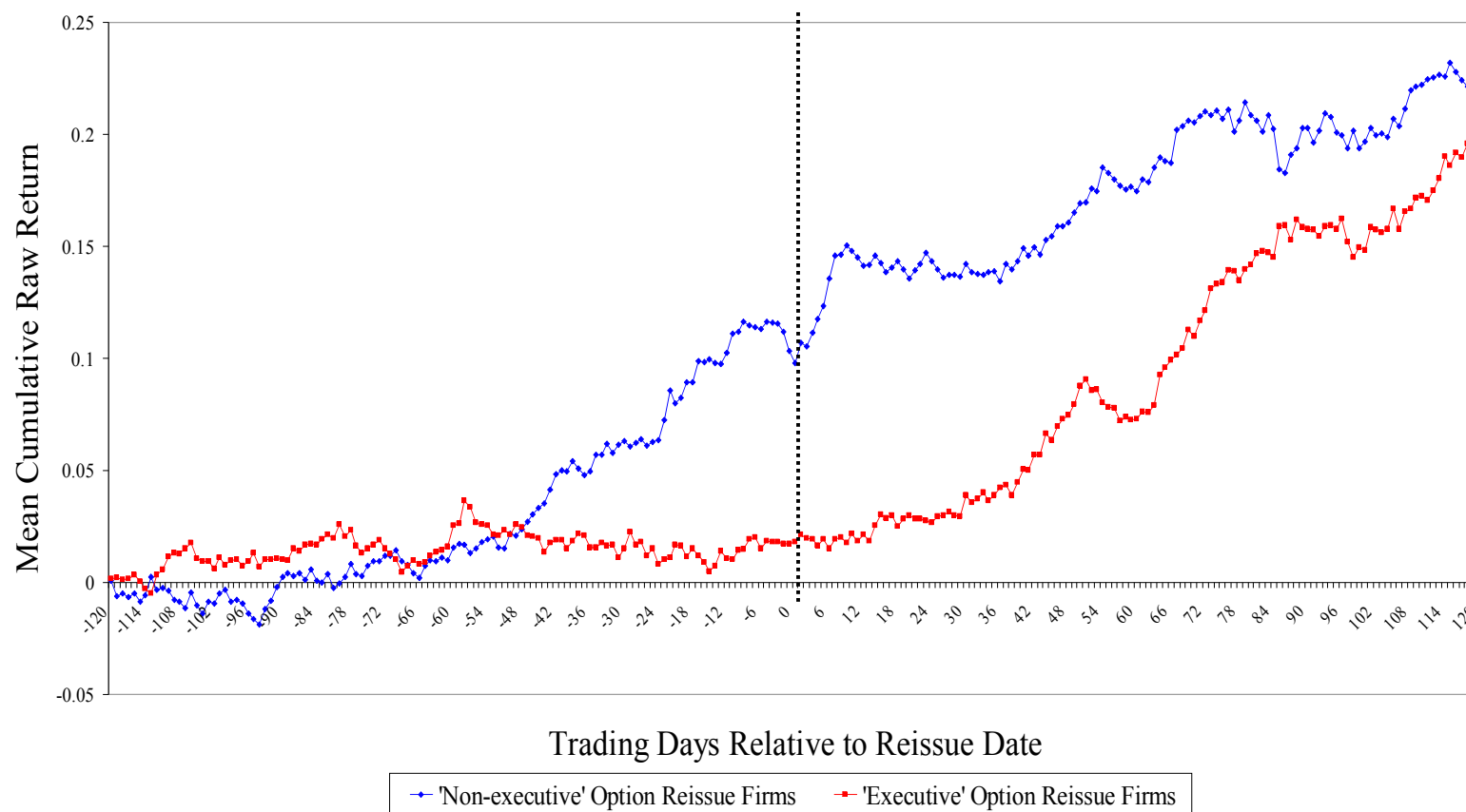


Figure A.7 Daily cumulative raw stock returns around the reissue dates for the two sub-samples

This figure shows mean daily cumulative raw stock returns around the reissue dates for the two sub-samples. The sub-sample 1 includes 175 “executive” option reissue events that occur during the period 2000 to 2005. The sub-sample 2 includes 104 “non-executive” option reissue events. The estimation process is described in Figure A.6.

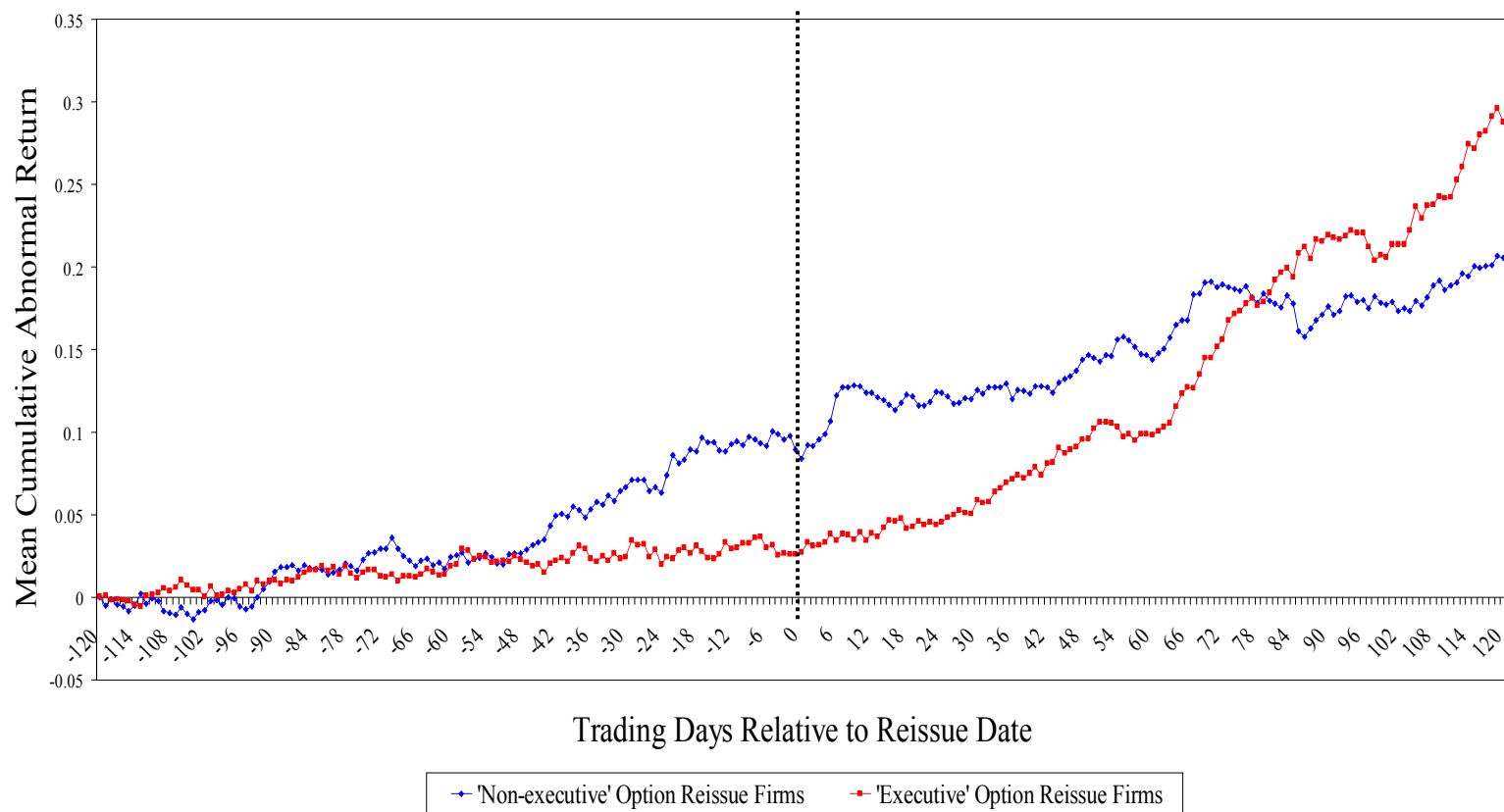


Figure A.8 Daily cumulative abnormal stock returns around the reissue dates for the two sub-samples

This figure shows mean daily cumulative raw stock returns around the reissue dates for the two sub-samples. The two sub-samples are same as those in Figure A.7. The estimation process is described in Figure A.6.

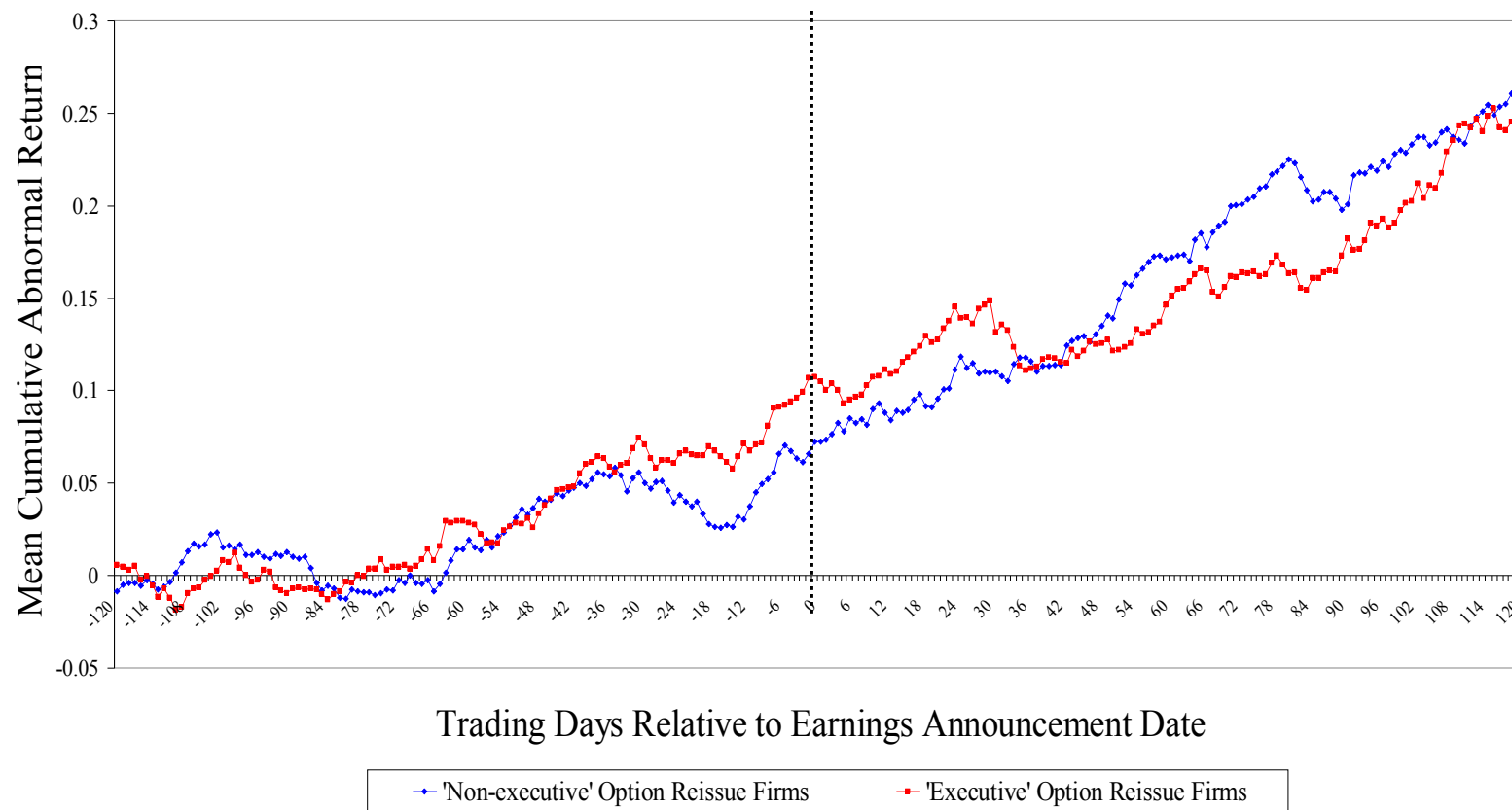


Figure A.9 Daily cumulative abnormal stock returns around the earnings announcement dates for the two sub-samples

This figure shows mean daily cumulative abnormal stock returns around the earnings announcement date prior to option reissues. The two sub-samples are same as those in Figure A.7. The estimation process is described in Figure A.6.

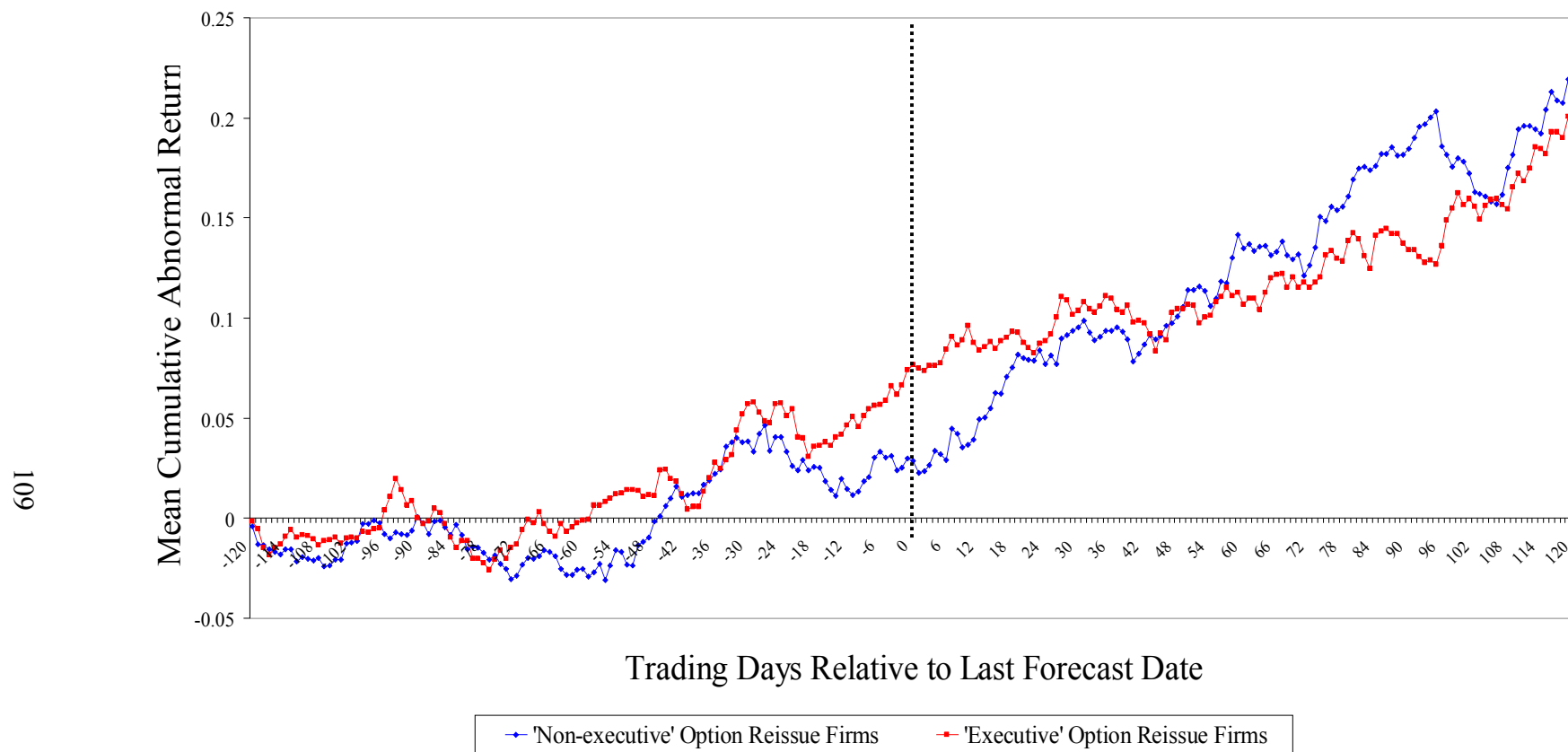


Figure A.10 Daily cumulative abnormal stock returns around the last forecast dates for the two sub-samples

This figure shows mean daily cumulative abnormal stock returns around the last analyst forecast dates for the earnings announced prior to option reissues. The two sub-samples are same as those in Figure A.7. The estimation process is described in Figure A.6.

APPENDIX B

TABLES

Table B.1 Sample Selection Process

Total SEC documents retrieved from the databases by the search strings	3,292
Less: SEC documents that do not pertain to option exchange programs	-485
Less: SEC documents that duplicate option exchange programs	-2,343
Usable option exchange programs implemented from 2000 to 2005	464
Less: Option exchange programs where I do not find SEC documents that options were actually granted after cancellation	-95
Base option exchange programs implemented from 2000 to 2005	369
Less: Firms implementing option exchange programs with missing IBES/CRSP code lookup list	-30
Less: Firms implementing option exchange programs with missing Compustat code lookup list	-11
Testable option exchange programs implemented from 2000 to 2005	328

Table B.2 Sample Description of Option Exchange Programs

Panel A: Year Distribution

	Offer		Cancellation		Reissue	
	Frequency	%	Frequency	%	Frequency	%
2000	6	1.83	3	0.91		
2001	140	42.68	130	39.63	54	16.46
2002	104	31.71	108	32.93	128	39.02
2003	66	20.12	74	22.56	104	31.71
2004	11	3.35	12	3.66	34	10.37
2005	1	0.30	1	0.30	8	2.44
Total	328	100.00	328	100.00	328	100.00

Panel B: Eligibility

Eligibility	Frequency	%
Available to all employees including top executives	183	55.79
Unavailable to top executives	105	32.01
Undetermined	40	12.20
Total	328	100.00

Panel C: Industry Distribution

Two digit SIC code	Industry	Frequency	Percent
10	Metal mining	1	0.305
20	Food & kindred prodcuts	1	0.305
22	Textile mill products	2	0.610
23	Apparel & other textile products	1	0.305
25	Furniture & fixtures	1	0.305
27	Printing & publishing	3	0.915
28	Chemical & allied product	13	3.963
30	Rubber & misc. plastics products	1	0.305
34	Fabricated metal products	2	0.610
35	Industrial machinery & equipment	22	6.707
36	Electronic & other electric equipment	81	24.695
37	Transportation equipment	6	1.829
38	Instruments & related products	13	3.963
39	Misc. manufacturing industries	1	0.305
42	Trucking & warehousing	1	0.305
45	Transportation by air	2	0.610
48	Communications	19	5.793
50	Wholesale trade - Durable goods	3	0.915
53	General merchandise stores	1	0.305
55	Automotive dealers & services stations	1	0.305
56	Apparel & accessory stores	1	0.305

Table B.2 -
Continued

58	Eating & drinking places	1	0.305
59	Miscellaneous retail	2	0.610
62	Security & commodity brokers	1	0.305
63	Insurance carriers	1	0.305
67	Holding & other investment offices	2	0.610
70	Hotels, rooming houses, camps, and others	2	0.610
72	Personal services	1	0.305
73	Business services	125	38.110
78	Motion pictures	1	0.305
80	Health services	4	1.220
82	Educational services	1	0.305
83	Social services	1	0.305
87	Engineering & management services	8	2.439
89	Services, (not elsewhere classified)	1	0.305
0	Undetermined	1	0.305
Total		328	100.000

Table B.3 Comparison of Cumulative Raw Returns

The table compares cumulative raw returns prior to option reissue dates between the two groups, 'Exec' and 'Nonexec.' The 'Exec' group includes the option exchange programs available to all employees including top executives, while the 'Nonexec' group includes ones unavailable to top executives. I compute cumulative raw returns for the 120-day period starting in day -120 through day -1, with day 0 defined as the reissue date identified in the SEC documents. The 120-day period is divided into the four 30-day subperiods. Period-4 denotes the period starting in day -120 through through day -91. Period-3 denotes the period starting in day -90 through through day -61. Period-2 denotes the period starting in day -60 through through day -31. Period-1 denotes the period starting in day -30 through day -1. Numbers in parentheses denote *t*-statistics for means and difference in means. Numbers in brackets denote *p*-values of Wilcoxon signed rank statistic for medians, and Wilcoxon rank sum statistic for difference in medians. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

	Period-4		Period-3		Period-2		Period-1		Pooled	
Mean										
Exec	0.0074	***	0.0147	***	0.0212	***	0.0143	**	0.0144	***
	(2.7906)		(3.1556)		(3.92888)		(2.3050)		(5.8747)	
Nonexec	-0.0074	**	0.0058		0.0348	***	0.0925	***	0.0313	***
	(-2.5345)		(1.2659)		(5.5037)		(11.7905)		(10.8731)	
Difference	0.0148	***	0.0089		-0.0136		-0.0782	***	-0.0169	***
Exec-Nonexec	(3.7500)		(1.3700)		(-1.6400)		(-7.8200)		(-4.4500)	
Median										
Exec	-0.0055		-0.0454	***	-0.0479	***	-0.0529	***	-0.0313	***
	[0.2357]		[<.0001]		[0.0032]		[<.0001]		[<.0001]	
Nonexec	-0.0070	***	-0.0113		0.0298	***	0.0576	***	0.0088	***
	[0.0006]		[0.4677]		[0.0005]		[<.0001]		[0.5165]	
Wilcoxon Z	1.6677	*	-3.1764	***	-4.4977	***	-9.8320	***	-9.4182	***
	[0.0954]		[0.0015]		[<.0001]		[<.0001]		[<.0001]	

Table B.4 Comparison of Cumulative Abnormal Returns

The table compares cumulative abnormal returns prior to option reissue dates between the two groups, 'Exec' and 'Nonexec.' The two groups are described in Table B.3. I estimate cumulative abnormal returns for the 120-day period starting in day -120 through day -1, with day 0 defined as the reissue date identified in the SEC documents. The periods are defined in the same way in Table B.3. Numbers in parentheses denote t -statistics for means and difference in means. Numbers in brackets denote p -values of Wilcoxon signed rank statistic for medians, and Wilcoxon rank sum statistic for difference in medians. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

	Period-4		Period-3		Period-2		Period-1		Pooled	
Mean										
Exec	0.0031		0.0140	***	0.0232	***	0.0286	***	0.0172	***
	(1.3325)		(3.3083)		(4.0861)		(3.9358)		(6.6203)	
Nonexec	-0.0040		0.0210	***	0.0381	***	0.0859	***	0.0351	***
	(-1.5813)		(4.9242)		(6.4925)		(10.9806)		(12.7722)	
Difference	0.0071	**	-0.0070		-0.0149	*	-0.0573	***	-0.0266	***
Exec-Nonexec	(2.0700)		(-1.1600)		(-1.8300)		(-5.3700)		(-4.7300)	
Median										
Exec	-0.0069	***	-0.0243	*	-0.0190	*	-0.0661	***	-0.0206	***
	[0.0084]		[0.0613]		[0.0638]		[<.0001]		[<.0001]	
Nonexec	-0.0060	**	-0.0051	**	0.0014	***	0.0093	***	-0.0022	***
	[0.0152]		[0.0237]		[0.0005]		[<.0001]		[<.0001]	
Wilcoxon Z	-0.1319		-3.9249	***	-4.2343	***	-8.9183	***	-9.0726	***
	[0.8951]		[<.0001]		[<.0001]		[<.0001]		[<.0001]	

Table B.5 Slopes of Cumulative Abnormal Returns

[OLS Regression Model]

$$CAR_{it} = \beta_0 + \beta_1 RELDAY_{it} + \varepsilon_{it}$$

The tables show the slopes (β_1) for the OLS regressions of cumulative abnormal return on trading days relative to option reissue date. 'CAR' denotes cumulative abnormal return and 'RELDAY' denotes trading day relative to option reissue date. I perform the regression model for each different four group of eligibility ('Exec' vs. 'Nonexec') by period ('Before' vs. 'After'). 'Exec' and 'Nonexec' are described in Table B.3. 'Before' denotes the period prior to option reissue dates, and 'After' the period subsequent to option reissue dates. I perform F-test for statistical test of the difference in slopes for the regressions. Panel A shows the slopes of cumulative abnormal returns for the short period starting in day -60 through day +60. Panel B shows the slopes of cumulative abnormal returns for the long period starting in day -120 through day +120. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

Panel A: Slopes of cumulative abnormal return for the short period

	Before		After		Difference F-statistic	p-value
Exec	0.00015		0.00139	***	6.30	** 0.0121
Nonexec	0.00153	***	0.00070		2.63	0.1049
Difference						
F-statistic	7.67	***	19.82	***		
p-value	0.0056		<.0001			

Panel B: Slopes of cumulative abnormal return for the long period

	Before		After		Difference F-statistic	p-value
Exec	0.00028	***	0.00224	***	82.48	*** <.0001
Nonexec	0.00095	***	0.00081	***	0.50	0.4799
Difference						
F-statistic	1.06		0.42			
p-value	0.3031		0.5153			

Table B.6 Descriptive Statistics of Variables

The table displays the descriptive statistics of the variables for the option reissuers. ‘Miss’ is set to be 1 if the actual reported earnings miss the mean value of last analyst forecasts, and 0 otherwise. ‘Earnings_Surprise’ is computed as: [(mean of last analyst forecasts - actual EPS)] and is scaled by the stock price at the date of first analyst forecasts. ‘Exec’ is set to be 1 if top executive officers are eligible for the option exchange program, and 0 otherwise. ‘Qua’ is set to be 1 if the earnings announced prior to option reissues are quarterly ones, and 0 if annual ones. ‘Elapse’ is the number of calendar days between earnings announcement date and option reissue date. ‘Size’ is the logarithm of total assets at the option reissue year (Compustat annual item # 6). ‘Leverage’ is measured as long-term debt (Compustat annual item #9) scaled by total assets (Compustat annual item #6). Growth is measured as book-to-market ratio, which is computed as: [Common Equity (Compustat annual item #60)] / [closing stock price at the fiscal end date (Compustat annual item #24) * number of common shares outstanding (Compustat annual item #25)]. For the computation of ‘Growth’, I delete the observations if their common equity amounts (Compustat annual item #60) are negative or zero. ‘|FE|’ denotes the absolute value of analyst forecast error, which is computed as: [abs (actual EPS – mean of first analyst forecasts)] and is scaled by the stock price at the date of first analyst forecasts.

Variable	N	Mean	Standard Deviation	t-statistic	1st Quartile	Median	3rd Quartile
Miss	349	0.2923	0.4555	11.9879	0	0	1
Earnings_Surprise	312	-0.0024	0.0326	-1.3059	-0.0058	-0.0012	0.0006
Exec	320	0.5625	0.4969	20.2520	0	1	1
Qua	349	0.6447	0.4793	25.1287	0	1	1
Elapse	349	61.9685	43.1061	26.8562	32	55	84
Size	326	5.6454	1.5648	65.1378	4.5774	5.4376	6.6009
Leverage	324	0.1269	0.2052	11.1356	0	0.0037	0.2076
Growth	306	0.7218	0.8583	14.7099	0.3020	0.5122	0.8746
FE	312	0.0176	0.0411	7.5647	0.0013	0.0047	0.0154

Table B.7 Fixed Effects Regression Results of Earnings Surprises -1

[Logistic Regression Model]

$$\text{Prob (Miss}_{it}=1) = \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 \text{Loss}_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Leverage}_{it} \\ + \beta_7 \text{Growth}_{it} + \beta_8 |\text{FE}|_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it}$$

[OLS Regression Model]

$$\text{Earnings_Surprise}_{it} = \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 \text{Loss}_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Leverage}_{it} \\ + \beta_7 \text{Growth}_{it} + \beta_8 |\text{FE}|_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it}$$

The table presents the results of logistic regression and OLS regression to test managers' incentive to miss analyst forecasts prior to option reissues. 'Reissue' is set to be 1 if firms reissue options, and 0 for control firms. The other variables such as 'Miss', 'Earnings_Surprise', 'Qua', 'Loss', 'Size', 'Leverage', 'Growth' and '|FE|' are described in Table B.6. Both regressions are run with the consideration of year and industry fixed effects. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

Independent variable	Predicted relation	Panel A: Logistic regression			Panel B: OLS regression	
		Estimated coefficient	Pr > Chi-square		Estimated coefficient	Pr > t
Intercept		-1.4283	0.0154	**	-0.0004	0.9328
Reissue	+	-0.1650	0.6371		0.0052	0.1022
Qua		-0.1588	0.6332		0.0023	0.4264
Reissue*Qua	+	0.0615	0.8901		-0.0009	0.8317
Loss		0.7273	0.0031	***	0.0036	0.0961
Size		-0.0076	0.9311		-0.0006	0.4478
Leverage		-0.0615	0.9267		0.0001	0.9931
Growth		0.1466	0.2880		0.0014	0.3220
FE		-0.6365	0.8005		-0.5816	<.0001
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
N		481			481	
R-square		0.0261			0.568	
Wald Chi-square		12.2781				
F-statistic					77.58	
p-value		0.1392			<.0001	
No. of Observations						
Miss		116				
Meet or Beat		365				

Table B.8 Fixed Effects Regression Results of Earnings Surprises -2

[Logistic Regression Model]

$$\begin{aligned} \text{Prob (Miss}_{it}=1) = & \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ & + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 \text{Loss}_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Leverage}_{it} + \beta_{10} \text{Growth}_{it} + \beta_{11} |\text{FE}|_{it} \\ & + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned}$$

[OLS Regression Model]

$$\begin{aligned} \text{Earnings_Surprise}_{it} = & \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ & + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 \text{Loss}_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Leverage}_{it} + \beta_{10} \text{Growth}_{it} + \beta_{11} |\text{FE}|_{it} \\ & + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned}$$

The table presents the results of logistic regression and OLS regression to compare managers' incentive to miss analyst forecasts prior to option reissues between 'Executive' option reissuers and 'Nonexecutive' option reissuers. The variables such as 'Miss', 'Earnings_Surprise', 'Exec', 'Qua', 'Elapse', 'Loss', 'Size', 'Leverage', 'Growth' and '|FE|' are described in Table B.6. Both regressions are run with the consideration of year and industry fixed effects. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

Independent variable	Predicted relation	Panel A: Logistic regression		Panel B: OLS regression	
		Estimated coefficient	Pr > Chi-square	Estimated coefficient	Pr > t
Intercept		-1.2812	0.2752	-0.0079	0.4348
Exec	+	0.5484	0.5586	0.0006	0.9411
Qua	+	1.0016	0.2066	0.0034	0.6026
Elapse	-	0.0125	0.0864 *	0.0000	0.5663
Exec*Qua	+	-0.1857	0.8087	0.0024	0.7102
Exec*Elapse	-	-0.0147	0.0850 *	-0.0001	0.2098
Qua*Elapse		-0.0138	0.1371	0.0000	0.6941
Loss		0.7298	0.0604 *	0.0008	0.7987
Size		-0.2556	0.0730 *	0.0005	0.7060
Leverage		0.2725	0.7842	-0.0019	0.2501
Growth		0.1135	0.4535	0.0019	0.2501
FE		11.5349	0.0907 *	0.0331	0.6393
Year fixed effects		Yes		Yes	
Industry fixed effects		Yes		Yes	
N		248		248	
R-square		0.1060		0.0341	
Wald Chi-square		23.6835			
F-statistic				0.76	
p-value		0.0141		0.6815	
No. of Observations					
Miss		60			
Meet or Beat		188			

Table B.9 Estimation results for the model developed by Matsumoto (2002)

The tables report the descriptive statistics of parameter estimates from the model developed by Matsumoto (2002) to measure managers' forecast guidance. The parameters are estimated using data for all firms in the same four-digit SIC code in the same year, except for the sample firms. For this thesis, the parameters are estimated in total 88 different groups of firm-year by industry. Panel A reports the descriptive statistics of quarterly parameter estimates in this thesis. Panel B reports the descriptive statistics of quarterly parameter estimates in Matsumoto (2002). Panel C reports the descriptive statistics of annual parameter estimates in this thesis. Matsumoto (2002) did not estimate the annual parameters.

Panel A: Descriptive statistics of quarterly parameter estimates in this thesis

$$\text{Model: } \Delta EPS_{ijtq} / P_{ij(t-1)q} = \alpha_{jt} + \beta_{1jt} (\Delta EPS_{ijt(q-1)} / P_{ij(t-1)(q-1)}) + \beta_{2jt} CRET_{ijtq} + \varepsilon_{ijtq}$$

	Mean	Standard Deviation	t-statistic	1st Quartile	Median	3rd Quartile
α	0.005	0.005	4.994	0.000	0.004	0.008
β_1	0.591	0.447	12.419	0.384	0.486	0.711
β_2	0.007	0.016	4.367	0.001	0.004	0.011

Panel B: Descriptive statistics of quarterly parameter estimates in Masumoto (2002)

$$\text{Model: } \Delta EPS_{ijtq} / P_{ij(t-1)q} = \alpha_{jt} + \beta_{1jt} (\Delta EPS_{ijt(q-1)} / P_{ij(t-1)(q-1)}) + \beta_{2jt} CRET_{ijtq} + \varepsilon_{ijtq}$$

	Mean	Standard Deviation	t-statistic	1st Quartile	Median	3rd Quartile
α	0.002	0.005	45.350	0.000	0.002	0.004
β_1	0.313	0.382	105.300	0.116	0.297	0.492
β_2	0.013	0.019	84.450	0.004	0.010	0.019

Panel C: Descriptive statistics of annual parameter estimates in this thesis

$$\text{Model: } \Delta EPS_{ijt} / P_{ij(t-1)} = \alpha_{jt} + \beta_{1jt} (\Delta EPS_{ijt(t-1)} / P_{ij(t-2)}) + \beta_{2jt} CRET_{ijt} + \varepsilon_{ijt}$$

	Mean	Standard Deviation	t-statistic	1st Quartile	Median	3rd Quartile
α	0.018	0.079	1.555	-0.010	0.006	0.025
β_1	-0.044	1.362	-0.217	-0.633	-0.066	0.145
β_2	0.028	0.105	1.779	-0.004	0.016	0.042

Table B.10 Fixed Effects Logistic Regression Results of Forecast Guidance -1

$$\begin{aligned} \text{Prob}(\text{BFG}_{it}=1) &= \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 |\text{FE}|_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Skew}_{it} \\ &+ \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \\ \text{Prob}(\text{MFG}_{it}=1) &= \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 |\text{FE}|_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Skew}_{it} \\ &+ \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned}$$

The table presents the results of logistic regressions to test managers' incentive to guide analyst forecasts upward prior to option reissues. Based on the measure developed by Bartov et al. (2002), the dependent variable, 'BFG' is set to be 1 if the sign of forecast revision is positive and 0 if the sign of the forecast revision is negative or there is no forecast revision. Based on the measure developed by Matsumoto (2002), the dependent variable, 'MFG', is set to be 1 if the last forecast is higher than the expected forecast amount estimated by the model and 0 if the last forecast is lower than the expected amount or same as the expected amount. 'Skew' is measured as the statistical skewness of actual earnings over the past years. The variable, 'Reissue' is described in Table B.7. The other variables such as 'Qua', '|FE|' and 'Size' are described in Table B.6. Both regressions are run with the consideration of year and industry fixed effects. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

Independent variable	Predicted relation	Panel A: BFG			Panel B: MFG	
		Estimated coefficient	Pr >	Chi-square	Estimated coefficient	Pr > Chi-square
Intercept		-2.0658	0.0003	***	-0.3678	0.5602
Reissue	+	0.1304	0.7487		0.2696	0.5117
Qua		0.1861	0.6346		-0.4185	0.3164
Reissue*Qua	-	-0.3956	0.4464		0.0917	0.8640
FE		7.5906	0.0084	***	-1.7725	0.6617
Size		0.0407	0.6200		-0.0521	0.5982
Skew		0.0656	0.3760		-0.0175	0.8405
Year fixed effects		Yes			Yes	
Industry fixed effects		Yes			Yes	
N		518			279	
R-square		0.0254			0.0122	
Wald Chi-square		8.9589			3.3396	
p-value		0.1759			0.7652	
No. of Observations						
Upward		78			91	
Downward or No Change		440			188	

Table B.11 Fixed Effects OLS Regression Results of Forecast Guidance -1

$$\begin{aligned} \text{BFGUP}_{it} &= \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 |\text{FE}|_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Skew}_{it} \\ &\quad + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \\ \text{MFGUP}_{it} &= \beta_0 + \beta_1 \text{Reissue}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Reissue}_{it} * \text{Qua}_{it} + \beta_4 |\text{FE}|_{it} + \beta_5 \text{Size}_{it} + \beta_6 \text{Skew}_{it} \\ &\quad + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned}$$

The table presents the results of OLS regressions to test managers' incentive to guide analyst forecasts upward prior to option reissues. 'BFGUP' is computed by subtracting the first analyst forecast from the last analyst forecast and scaling the amount by the stock price at the date of first analyst forecast. 'MFGUP' is computed by subtracting the expected analyst forecast estimated by the model by Matsumoto (2002) from the last analyst forecast and scaling the amount by the stock price at the date of first analyst forecast. The variable, 'Reissue' is described in Table B.7. The variables such as 'Qua', '|FE|' and 'Size' are described in Table B.6. The variable, 'Skew' is described in Table B.10. Both regressions are run with the consideration of year and industry fixed effects. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

Independent variable	Predicted relation	Panel A: BFG			Panel B: MFG		
		Estimated coefficient	Pr > t		Estimated coefficient	Pr > t	
Intercept		0.0153	0.0034	***	-0.2861	0.0001	***
Reissue	+	-0.0037	0.3188		-0.0131	0.7908	
Qua		-0.0005	0.8947		0.0748	0.1201	
Reissue*Qua	-	0.0004	0.9276		-0.0143	0.8207	
FE		0.0186	0.4455		2.3774	<.0001	***
Size		-0.0024	0.0014	***	0.0338	0.0034	***
Skew		0.0005	0.4928		0.0022	0.8181	
Year fixed effects		Yes			Yes		
Industry fixed effects		Yes			Yes		
N		518			280		
R-square		0.0270			0.0520		
F-statistic		2.36			2.50		
p-value		0.0293			0.0228		

Table B.12 Fixed Effects Logistic Regression Results of Forecast Guidance -2

$$\begin{aligned} \text{Prob}(\text{BFG}_{it}=1) &= \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ &\quad + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 |\text{FE}|_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \\ \text{Prob}(\text{MFG}_{it}=1) &= \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ &\quad + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 |\text{FE}|_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned}$$

The table presents the results of logistic regressions to compare managers' incentive to guide analyst forecasts upward prior to option reissues between 'Executive' option reissuers and 'Nonexecutive' option reissuers. The variables, 'BFG' and 'MFG' are described in Table B.10. The variables such as 'Exec', 'Qua', 'Elapse', '|FE|' and 'Size' are described in Table B.6. The variable, 'Skew' is described in Table B.10. Both regressions are run with the consideration of year and industry fixed effects. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

Independent variable	Predicted relation	Panel A: BFG		Panel B: MFG	
		Estimated coefficient	Pr > Chi-square	Estimated coefficient	Pr > Chi-square
Intercept		-2.2882	0.0298 **	1.7654	0.1028
Exec	+	0.6729	0.4615	-1.3724	0.1695
Qua	-	0.6867	0.3987	-1.8465	0.0215 **
Elapse	-	0.0031	0.6702	-0.0174	0.0196 **
Exec*Qua	-	-0.8232	0.2952	0.4359	0.5937
Exec*Elapse	-	-0.0085	0.3448	0.0086	0.3829
Qua*Elapse		-0.0081	0.4417	0.0198	0.0673 *
FE		4.7905	0.1785	-0.6077	0.8792
Size		0.0842	0.4455	-0.0657	0.5979
Skew		0.1561	0.1587	0.0712	0.5784
Year fixed effects		Yes		Yes	
Industry fixed effects		Yes		Yes	
N		269		153	
R-square		0.03		0.0741	
Wald Chi-square		7.6833		10.4578	
p-value		0.5663		0.3147	
No. of Observations					
Upward		41		53	
Downward or No Change		228		100	

Table B.13 Fixed Effects OLS Regression Results of Forecast Guidance -2

$$\begin{aligned} \text{BFGUP}_{it} &= \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ &\quad + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 |\text{FE}|_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \\ \text{MFGUP}_{it} &= \beta_0 + \beta_1 \text{Exec}_{it} + \beta_2 \text{Qua}_{it} + \beta_3 \text{Elapse}_{it} + \beta_4 \text{Exec}_{it} * \text{Qua}_{it} + \beta_5 \text{Exec}_{it} * \text{Elapse}_{it} \\ &\quad + \beta_6 \text{Qua}_{it} * \text{Elapse}_{it} + \beta_7 |\text{FE}|_{it} + \beta_8 \text{Size}_{it} + \beta_9 \text{Skew}_{it} + \sum \beta_n \text{Year}_n + \sum \beta_m \text{Industry}_m + \varepsilon_{it} \end{aligned}$$

The table presents the results of OLS regressions to compare managers' incentive to guide analyst forecasts upward prior to option reissues between 'Executive' option reissuers and 'Nonexecutive' option reissuers. The variables, 'BFGUP' and 'MFGUP' are described in Table B.11. The variables such as 'Exec', 'Qua', 'Elapse', '|FE|' and 'Size' are described in Table B.6. The variable, 'Skew' is described in Table B.10. Both regressions are run with the consideration of year and industry fixed effects. ***, **, and * denote significance at less than the 1%, 5%, and 10% levels, two-tailed tests, respectively.

Independent variable	Predicted relation	Panel A: BFG		Panel B: MFG	
		Estimated coefficient	Pr > t	Estimated coefficient	Pr > t
Intercept		0.0128	0.1302	-0.1203	0.4004
Exec	+	0.0194	0.0109 **	-0.2094	0.1274
Qua	-	0.0045	0.4848	-0.1511	0.1604
Elapse	-	0.0001	0.0722 *	-0.0012	0.2127
Exec*Qua	-	-0.0102	0.1078	0.2433	0.0331 **
Exec*Elapse	-	-0.0001	0.0531 *	0.0001	0.9436
Qua*Elapse		-0.0000	0.8404	0.0012	0.3820
FE		-0.4877	<.0001 ***	2.5967	<.0001 ***
Size		-0.0036	<.0001 ***	0.0380	0.0231 **
Skew		-0.0012	0.1640	0.0126	0.4594
Year fixed effects		Yes		Yes	
Industry fixed effects		Yes		Yes	
N		269		153	
R-square		0.4580		0.2332	
F-statistic		24.32		4.83	
p-value		<0.0001		<.0001	

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