

Backdating of CEO Stock Option Grants and Timing of Earnings Disclosures

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ABSTRACT

Extant studies provide two competing explanations for the abnormal stock return patterns around CEO option grants: the backdating of option grants and the timing of news disclosure. We examine the interrelation between backdating, good-timing, and the regulatory effect on such opportunistic behaviors. Using the CEO option grant sample for S&P1500 firms from the Thomson Financial Insider Filing and IRRC Directors databases between 1996 and 2005, we find that (1) backdating is more prevalent for firms filing Form 5 than for firms filing Form 4; (2) while the Sarbanes-Oxley Act (SOX) curtailed backdating, the good-timing of earnings disclosures as an alternative device has persisted and increased post-SOX; and (3) the reporting lag between the grant date and the SEC filing date is an indicator of good-timing rather than backdating post-SOX. Overall, our evidence suggests that despite the tightened oversight represented by SOX, CEOs continue to manipulate the timing of earnings disclosures to increase the value of their equity compensation.

JEL Classification: M41; M52; K22; G38

Key words: Backdating; Timing; Stock options; Earnings Disclosure; Regulation; Sarbanes-Oxley Act

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1. Introduction

In this paper we seek a deeper understanding of two matters. First, the relation between opportunistic timing of stock option awards and opportunistic timing of earnings information disclosure in explaining the abnormal stock return patterns around the option grant dates; and second, the impact of regulation restrictions on such opportunistic behaviors.

It is well known that abnormal stock returns are negative before executive stock option grants and positive afterward. Extant studies identify two competing mechanisms that could potentially explain this trough pattern of stock returns around the grant dates. The “good-timing” mechanism suggests that managers manipulate the timing of fundamental corporate news to influence the stock price movement around option grant dates and hence the terms of their compensation. Yermack (1997) presents evidence that managers receive options prior to the release of good news. Aboody and Kasznik (2000) suggest that managers time the release of earnings information around scheduled option grants. The alternative mechanism, the “backdating” hypothesis, as originally proposed by Lie (2005) and Narayanan and Seyhun (2007), is that managers might have used the benefit of hindsight to backdate the grant dates to obtain lower exercise prices for their options. Yet, despite extensive studies and widespread discussion in academia and the press in the past two years about the practice of backdating stock options, the interrelation between backdating and good timing remains unclear.¹

We conduct several sets of tests to distinguish between the effects of backdating of CEO stock option grants and good-timing of earnings disclosure on the trough pattern of abnormal

¹ Since Lie’s study on backdating in 2005, hundreds of articles on the backdating scandal have appeared in the *Wall Street Journal*, and a number of concurrent academic studies have focused on backdating. However, little attention has been paid to the “good-timing” argument.

stock returns around option grant dates. Furthermore, we investigate whether and how the Sarbanes-Oxley Act of 2002 (SOX) affects the practice of good-timing of earnings disclosures in conjunction with the timing of option grants. Two recent studies conclude that SOX effectively curtails backdating (Narayanan and Seyhun 2006; Heron and Lie 2007). However, in the absence of an understanding of how good-timing interacts with backdating, we are unable to infer whether SOX curtails the opportunistic timing of earnings disclosures. Several other studies examine the fraction of option grants believed to be backdated based on the price pattern and provide mixed results (Bebchuk, Grinstein, and Peyer 2006; Heron and Lie 2006). We extend the analyses in their studies by taking into account the possibility that estimates of the prevalence of backdating can be confounded by good-timing.

We analyze the CEO option grants for the S&P1500 firms recorded in the Thomson Financial Insider Filing and IRRC Directors databases from January 1, 1996 to November 11, 2005. We end our sample period on November 11, 2005, the date of the first article on backdating appearing in the *Wall Street Journal*, to avoid the impact of media attention on the practice of option grants.²

In our first set of tests, we hypothesize that the longer the reporting window between the option grant date and the SEC filing date, the more flexibility a firm has to backdate the options and hence, the stronger the trough pattern of stock returns around the option grant dates. We find supporting evidence that backdating is more prevalent for firms filing Form 5 pre-SOX and less prevalent for firms filing Form 4 post-SOX.

In the second set of tests, we show that the good-timing of earnings disclosures as a substitute mechanism for manipulation has increased since the opportunity for backdating was reduced post-

² The article is titled “Authorities Probe Improper Backdating of Options – Practice Allows Executives to Bolster Their Stock Gains: A Highly Beneficial Pattern” by Maremont.

SOX. More specifically, we document the following findings in the post-SOX period. First, the difference in cumulative abnormal returns in the 30 trading days before and after the option grant date for options granted on the dates near earnings announcements are significant, whereas this return difference is not significant for options granted on the dates further away from earnings announcements. Second, for the unscheduled option grants, the earnings surprises, on average, are negative for earnings announced in the half quarter before the option grants, and positive in the half quarter afterward. Third, stock returns before (after) earnings announcements in the quarter with option grants are lower (higher) than those in the quarter without option grants. Our results are consistent with those in Heron and Lie (2007) and Narayanan and Seyhun (2007) in that the trough pattern is mitigated post-SOX. Moreover, we present new evidence that good-timing of earnings disclosures persists and that the likelihood of good-timing has increased post-SOX. This suggests that SOX does not prevent executives from manipulating the timing of corporate news disclosures to increase the value of their stock option compensation. To the best of our knowledge, no previous research has addressed the confounding effect of good-timing explicitly and has disentangled its effect from that of backdating.³ Our study is the first to provide direct evidence of the existence of good-timing post-SOX.

In the third set of tests, we explore the relationship between alternative timing games and the reporting lag (defined as the difference between the grant date and the SEC filing date). In related research, Heron and Lie (2007) and Narayanan and Seyhun (2007) document a significant trough pattern in their sample, with large reporting lags, and interpret the results as evidence of the reporting lag being an indicator of backdating or forward-dating. We propose an alternative hypothesis by arguing that the reporting lag is an indicator of good-timing rather than the dating

³ While Heron and Lie (2006) estimate that nearly 19% of unscheduled option grants to executives, 1996-2005, were backdated or otherwise manipulated, they do not address the confounding effect of alternative manipulating activities such as good-timing directly.

game post-SOX. We show that the association between the trough pattern and the reporting lag exists only when earnings are announced on the days close to option grant dates, and the association becomes insignificant after controlling for earnings surprise and the number of days between earnings announcement date and option grant date.

Finally, we conduct multivariate analysis and find that our results are robust after controlling for the magnitude of earnings surprise, firm size, stock return volatility, and firm industry variables.

We contribute to the executive compensation literature in the following ways: First, we extend the findings in Yermack (1997) and Aboody and Kasznik (2000), by showing that good-timing of fundamental news disclosures confounds the effect of backdating in explaining the trough pattern of stock returns around option grant dates. Second, we complement the results in Heron and Lie (2007) and Narayanan and Seyhun (2007), both of which show that backdating was prevalent pre-SOX and that it was mitigated effectively by SOX after 2002. Our results suggest that although SOX has succeeded in reducing the backdating game, it does not seem to have curtailed the opportunity for good-timing. Therefore, one inference we draw is that the prevalence of the dating game in the entire economy can be overstated without taking into account the possibility of good-timing. Our study is thus relevant to the regulation of information disclosure, in that we show how regulation restrictions affect corporate disclosure behaviors. Despite the tightened oversight inherent in SOX, executives continue to manipulate the timing of the release of information around the grant dates to increase their gains from stock option compensation.

The remainder of the paper proceeds as follows. Section 2 reviews the literature and develops the hypotheses. We discuss our data and sample selection in Section 3. Sections 4 and 5 present the empirical results, and Section 6 concludes.

2. Literature Review and Hypothesis Development

2.1. Literature Review and Research Questions

Executive stock options are typically granted at-the-money with the strike price set at the stock price on the grant date for incentive creation, tax purpose, and beneficial accounting treatment (e.g., Hall and Murphy 2000). The literature on the opportunistic timing of option awards dates back to Yermack (1997). Yermack shows that stock option awards are often followed by positive abnormal returns and provides evidence suggesting that CEOs are more likely to receive options shortly before the disclosure of favorable corporate news. Aboody and Kasznik (2000) consider voluntary disclosures managers in press releases and investigate the return patterns around the scheduled awards. They conclude that CEOs opportunistically time their information release by delaying good news and rushing forward bad news. Chauvin and Shenoy (2001) find a significant abnormal decrease in stock prices during the 10-day period immediately preceding the option grant date and attribute it to the timing of information disclosure. The notion that management manipulates investors' expectations via good-timing of disclosure to increase managerial compensation has been extended to other settings such as option repricing (Callaghan, Saly, and Subramaniam 2004) and option exercises (Huddart and Lang 2003; Bartov and Mohanram 2004) as well as to other markets—e.g., Canadian firms (Klassen and Mawani 2000).

Recently, Lie (2005) and Narayanan and Seyhun (2007) have proposed a new hypothesis to explain the abnormally low (high) stock returns preceding (following) the option grant date. Specifically, Lie (2005) finds supporting evidence that backdating takes place, i.e., the option

grant date may have been set retroactively to an earlier date when the stock price was lower than on the date when the option was awarded. Meanwhile, Narayanan and Seyhun (2007) separate forward-dating from backdating. They refer to forward-dating as the practice of managers picking a future date after the board decision date if they anticipate that the stock price will continue to drop. The new “dating game” explanation has inspired much debate and attracted a great amount of attention from the media, regulators, and investors (e.g., Maremont 2005; Cox 2006; Forelle and Bandler 2006; Stecklow 2006). The SEC and the U.S. Justice Department have started investigations of over 140 firms, and the U.S. Congress is discussing the possibility of amending the securities laws on stock options (Forelle and Scannell 2006). In addition, recent studies have investigated the backdating problem from various perspectives, including the effect of SOX on backdating (Collins, Gong, and Li 2005; Narayanan and Seyhun 2006), the link between backdating and corporate governance (Bebchuk, Grinstein, and Peyer 2006; Collins, Gong, and Li 2007), the economic impact of backdating (Bernile and Jarrell, 2007; Narayanan, Schipani, and Seyhun 2007; Cheng, Crabtree, and Smith 2008), and the prevalence of backdating (Bebchuk, Grinstein, and Peyer 2006; Walker 2006; Heron and Lie 2006, 2007; Narayanan and Seyhun 2007). Moreover, the scope of the research has been extended beyond the backdating of stock option grants. For instance, some works document the backdating problem in stock option exercises (e.g., Cicero 2006; Dhaliwal, Erickson, and Heitzman 2007).

However, several important questions remain unresolved. For example, does the alternative option grant manipulating mechanism—good-timing of earnings disclosures—also exist among the unscheduled option grants? How does good-timing interact with backdating? How would good-timing affect the estimate of the prevalence of backdating? And, finally, does SOX curtail the good-timing of earnings disclosure?

To answer these questions, we need to distinguish between two different types of mechanisms—backdating and good-timing—both of which will lead to the trough pattern of stock returns surrounding the option grant dates. Heron and Lie (2007) and Narayanan and Seyhun (2007) conclude that SOX effectively mitigates backdating after 2002. However, neither study explicitly examines the possibility of good timing in the pre- and post-SOX periods. We attempt to bridge the gap between these two types of mechanisms by showing that, once the opportunity of backdating is mitigated by the oversight inherent in SOX, the good-timing of earnings disclosure as a substituting device to manipulate the stock prices around the grant dates will increase post-SOX. Thus, our study extends the analyses of Yermack (1997) and Aboody and Kasznik (2000) and complements the findings of Heron and Lie (2007) and Narayanan and Seyhun (2007).

2.2. Institutional Background and Hypothesis Development

We develop three hypotheses that exploit the regulatory changes for stock option grants to discern between alternative option-grant manipulation mechanisms. Effective August 29, 2002, the SEC changed the reporting requirements for insider trades such as stock option grants. Prior to the change, executives receiving option grants could report to the SEC on either Form 5, which was not due until 45 days after the firm's fiscal year end, or Form 4, which was due on the 10th day of the month following the grants. In 2002, the SEC closed the disclosure loophole that permitted months and sometimes more than a year to elapse before option grants had to be reported. Under the new rules of SOX, option recipients are required to report to the SEC on Form 4 within two business days of receiving the grants. The SEC tightened the reporting rules substantially and curtailed the use of Form 5 under the presumption that managers used the lenient disclosure rules opportunistically to capitalize on their private information. In a recent study, Cheng, Nagar, and Rajan (2007) analyze the information content of Form 5 and provide evidence

a crime merely drives malpractice in other directions.” Once the opportunity to backdate is greatly reduced, good-timing becomes more attractive. Executives would therefore be expected to take more advantage of timing corporate news releases to influence stock price movement around the grant date. In doing so, they can give a maximum boost to the value of their stock option compensations, even if this means that they are risking getting caught for misuse of material inside information. This line of reasoning leads to our second hypothesis.

Hypothesis 2: SOX mitigates backdating of stock option grants but does not stop good-timing of earnings disclosures.

Despite the SEC’s new filing requirement, a number of firms are still not complying with the rule. Both Heron and Lie (2007) and Narayanan and Seyhun (2007) conclude that some firms violate the SEC’s new two-day filing requirement and that firms reporting late are more likely to have the options granted at the day when the stock price is low. In addition, Narayanan and Seyhun (2007) propose the likelihood of forward-dating. Forward-dating refers to the practice of recording an option grant on a future date with a lower price after the board approves the option grants. Executives will postpone recording their option grants when they anticipate that the stock price will continue to drop for a certain period of time in the future. While both of the above studies use the reporting lag as a proxy for backdating and forward-dating in the post-SOX period and document the positive relation between the reporting lag and the post-grant stock returns, we provide an alternative explanation. We test the hypothesis that the reporting lag may be an indicator of good-timing rather than backdating or forward-dating. In other words, managers will be engaged actively in manipulating the stock price movement via earnings disclosure and thus will be likely to file the option grants around the earnings announcement dates. We state our Hypothesis 3 as follows:

Hypothesis 3: The likelihood of good-timing is positively associated with the reporting lag which is the number of days between the earnings announcement date and the SEC filing date.

3. Data and Sample Selection

3.1. Data

Consistent with prior studies on the timing of option grants, we limit our analysis to CEOs because they have significant influence over firms' stock option practices and disclosure policies. The CEO option grant data are from the Thomson Financial Insider database, which captures all insider activities reported on the SEC Forms 3, 4, 5, and 144 from 1996 to 2005. In addition, we extracted the earnings expectations, actual earnings, and earnings announcement dates from IBES for the sample period. We use the median consensus analyst forecasts from IBES as the market expectation to evaluate whether a specific earnings announcement is positive or negative news. Other financial information and the information on stock returns are from Compustat and the Center for Research in Securities Prices (CRSP).

In addition, we restrict our sample to the S&P 1500 firms (S&P 500, S&P 400 midcap, and S&P 600 small cap), and we obtain information on the annual board meeting dates from IRRC Directors database. Our sample is comparable to the sample in the study by Aboody and Kasznik (2000), which focuses on the scheduled option grants for S&P 1500 firms.

3.2. Sample Selection

Table 1 shows the sample selection procedures.⁵ For grants given with varying vesting dates or maturity dates, Thomson Financial reports them as multiple records. We collapse all such

⁵ There are nine cleanse indicators in Thomson Financial Insider Filings database. Consistent with the data-cleansing process in Narayanan and Seyhun (2007), we eliminate all data with cleanse indicators of S and A. These data are identified in Thomson Financial in three categories: (1) collection requirements were not met, (2) numerous data elements were missing or invalid, or (3) reasonable assumptions could not be made. Heron and Lie (2007) include only the observations with cleanse indicators R, H, and C. We do not exclude the data with additional cleanse indicators other than S and A because the other four indicators mainly deal with the derivative values or data lacking a verifiable secondary source.

grants for each CEO that occur on the same day with a valid exercise price into one grant to reduce the impact of the weight carried by different vesting schedules.

After imposing the above cleansing, and combining criteria for data from 1996 to November 11, 2005, we obtain 19,898 CEO option grants. We then merge this data set with S&P1500 firms in the IRRC database. The final sample consists of 6,661 CEO option grant dates with 7,294 option grants.⁶ This sample is further decomposed into three subsamples based on the SEC filing forms and the time the insiders filed with the SEC. There are 1,780 grant dates (1,988 option grants) reported to the SEC on Form 5 pre-SOX; 3,374 grant dates (3,973 option grants) on Form 4 pre-SOX; and 1,507 grant dates (1,629 option grants) on Form 4 post-SOX.

4. Empirical Analyses

4.1. Descriptive Statistics

Table 2 presents the distribution of the months in which options are granted for the three subsamples. Consistent with the results in Aboody and Kasznik (2000), the frequency of grants in the months of December, January, and February is greater than that in other months. The last two columns of Table 2 also present the number and percentage of the fiscal year end month for 1,639 sample firms. Of these, 68.2% have their fiscal year end in December. This suggests that many firms grant options around their fiscal year end.

Table 3 provides the descriptive statistics for the three samples. Data for market value (MV) and total assets (TA) reveal that firms filing Form 5 (Sample 1) are significantly smaller than firms filing Form 4 pre-SOX (Sample 2) and Form 4 post-SOX (Sample 3). However, firms in Sample 1 exhibit higher sales growth (GROWTH) than those in Samples 2 and 3. There are no

⁶ Heron and Lie (2007) treat options granted on the same day with different exercise prices as different option grants. Applying their criteria would give us 7,294 option grants. Because we treat each CEO grant date as one observation, 633 grants are further eliminated.

significant differences in the number of shares granted and the exercise prices across the three groups.

4.2. Backdating and Reporting Requirements (Hypothesis 1)

In this subsection, we test the first hypothesis, which states that backdating is more likely to occur among firms filing Form 5 than those filing Form 4 and hence that the trough pattern of stock returns around the option grant dates is stronger for the grants reported on Form 5 than for those reported on Form 4.

Panel A of Figure 1 presents the value-weighted-market-returns-adjusted cumulative abnormal returns from 30 trading days preceding to 30 trading days following the grant date for the S&P 1500 firms in the aforementioned three sub samples from IRRC database. The cumulative raw return is the buy-and-hold return, and the abnormal return is the difference between the value-weighted market return and the raw return. Several patterns emerge. First, in the pre-SOX period, cumulative abnormal returns for firms filing Form 5 are significantly negative in the 30 trading days before the grant date and positive afterward. The trough pattern is stronger for firms filing Form 5 (Sample 1) than for firms filing Form 4 pre-SOX (Sample 2). Unreported statistical tests show that $CAR[-30, 0)$ is significantly more negative for Sample 1 than for Sample 2 ($t = 3.05$). Second, firms in Sample 3 no longer show negative pre-grant returns but still show significantly positive post-grant abnormal returns. The difference between $CAR[-30, 0)$ and $CAR[0, 30)$ is significant at 10% one-tailed significance level ($t = 1.57$).

For the purpose of comparison, we present in Panel B of Figure 1 the abnormal returns around CEO option grant dates for all firms in the Thomson Financial Insider Filing database. Similarly, we classify the firms filing Form 5 pre-SOX, Form 4 pre-SOX, and Form 4 post-SOX as S1, S2, and S3, respectively. As shown in Panel B, all three sub samples demonstrate a kink around the option grant date. Similar to the findings for S&P 1500 firms, the difference in $CAR[-$

30, 0) between firms filing Forms 4 and 5 is statistically significant. In addition, the cumulative abnormal returns of S3 in Panel B show a clear kink around the option grant date as compared with the returns of S3 in Panels A. Our results suggest that in the post-SOX period backdating and/or good-timing is less severe among S&P 1500 firms relative to sample firms in Thomson Financial database.

Overall, our results indicate that the trough pattern of stock returns around option grants is more pronounced when the reporting window allowed for executives to report their option grants is longer. Thus, Hypothesis 1 is supported. SOX has mitigated greatly the opportunity of backdating by eliminating Form 5 and reducing the reporting lag allowed for Form 4. Our results show that after SOX, the negative returns preceding the grant date are largely reduced, while the returns following the grant date are persistently positive.

4.3. Backdating and Good-timing of Earnings Disclosures (Hypothesis 2)

We use the following three approaches to test Hypothesis 2 in differentiating the effect of good-timing from backdating. First, we examine the difference in the stock price behavior around option grant dates for two groups of grants: options granted on the dates near earnings announcements and options granted on dates far away from earnings announcements in the pre- and post-SOX periods. We expect the stock price behavior to change from pre-SOX to post-SOX for the latter group but not for the former group. Second, we investigate the distribution and magnitude of negative and positive earnings surprises around the option grant dates. The good-timing hypothesis suggests that CEOs increase the value of their options by delaying good news and rushing forward bad news. If good-timing of earnings disclosures persists in the post-SOX period, we expect earnings surprises in the post-SOX period to be negative on average before the grant date and positive afterward. Third, we compare the price behavior around earnings announcements in the quarters with and without option grants. If option grant dates are likely to

be related to earnings announcement dates, the good-timing mechanism leads us to predict that stock returns before earnings announcements in the quarter with option grants will be lower than those in the quarter without option grants. In contrast, stock returns after earnings announcements in the quarter with option grants will be expected to be higher than those in the quarter without option grants.

For the first test, we partition our sample based on how close the option grant date is to the earnings disclosure date and whether the option granted is scheduled or unscheduled. These two classification criteria are motivated by the following intuition. First, if CEOs desire to manipulate earnings announcements to influence the stock price and gain a lower exercise price for their options, the option grant date must be feasibly close to the earnings announcement date for them to benefit from such manipulation. Second, if an option is scheduled, it would be more difficult for CEOs to backdate the options. Thus, we expect that the greater the number of days between option grant dates and the nearest earnings announcement dates, the more likely it is that the trough pattern will be caused by backdating rather than by good-timing, and vice versa.

For the purpose of classification, we create a dummy variable, GOODTIME, with a value of “1” if this day difference is less than or equal to 10 calendar days and “0” if this day difference is more than 10 but less than 45 calendar days (half quarter). Thus, the GOODTIME = 1 group includes firms that are more likely to be engaged in good-timing, whereas the GOODTIME = 0 group includes firms that are more likely to backdate.⁷ We then partition the sample into

⁷ The choice of a 10-day cutoff window is based on both the distribution of the option grant dates relative to the nearest quarterly earnings announcement dates as reported in Aboody and Kasznik (2000) and our own unreported analysis for the Thomson Financial sample. Figure 2 of Aboody and Kasznik (2000) reveals that the scheduled CEO options are awarded more frequently during the period five days before to 15 days after earnings announcements. Our own analysis for both scheduled and unscheduled option grants shows that the distribution of day difference is less skewed and that the peak remains around the earnings announcement date. In addition, we directly use the number of days between the two events as an independent variable in our multivariate regression. Our regression analysis provides supporting evidence for all three hypotheses, thus mitigating our concern of the discontinuity issue with using a 10-day cutoff window in this test.

scheduled and unscheduled groups. Grants are classified as scheduled ($SCHEDULE = 1$) if they occur within one week of the one-year anniversary of prior grants (Aboody and Kasznik 2000; Heron and Lie, 2007; Collins et al. 2007). We take advantage of the information on annual board meeting dates available in the IRRC Directors database and augment our scheduled sample with the options granted within one week of the annual board meeting date. This augmentation is based on the argument that options granted around annual board meeting dates are unlikely to be subject to backdating even if they are beyond the one-week window of the one-year anniversary of prior grants.

For the second test, we define earnings surprise as the actual quarterly earnings (EPS) minus the consensus earnings forecasts (AF) scaled by the stock price at the earnings announcement dates. In other words:

$$SURPRISE = \frac{EPS - AF}{P} \quad (1)$$

Such a definition is consistent with the analyst forecast errors (except for the sign) defined in Aboody and Kasznik (2000).⁸ Actual earnings and earnings announcement dates are extracted from the IBES database, and the consensus earnings forecast is the median of analyst forecasts.

For the third test, we define earnings announcements in the quarter with option grants as those announcements in which there is at least one option grant within 45 calendar days before and after the announcements. We define the remaining earnings announcements as in the quarter without option grants.

Panel A of Table 4 presents the results from the first test. We estimate the value-weighted-market-returns-adjusted cumulative abnormal returns for the window of 30 trading days before

⁸ Unlike Aboody and Kasznik (2000), we do not compare the magnitude of analyst forecast optimism in the month around option grant dates because the incentives for providing optimistic research have been substantially mitigated due to the global settlement and regulations (see, for example, Kadan, Madureira, Wang, and Zach 2007).

and after the option grant date in both the pre-SOX and post-SOX periods. If there is no backdating or good-timing, there should be no statistical difference between the cumulative abnormal returns in the window from day -30 to -1, $CAR[-30,0)$,⁹ and the cumulative abnormal returns in the window from day 0 to day 29, $CAR(0,30]$. Indeed, for the scheduled option grants we find that in the pre-SOX period, although the difference between $CAR [0,30)$ and $CAR[-30,0)$ for the $GOODTIME = 1$ group is higher than the difference for the $GOODTIME= 0$ (1.07 vs. 0.55), neither difference is statistically significant. The same pattern can be observed for the post-SOX period. These results are consistent with the argument that scheduled option grants are less likely to be subject to backdating.

Our major findings come from the results for the group of unscheduled option grants as shown in the last three columns of Panel A, Table 4. First, in the pre-SOX period, the differences between $CAR[0,30)$ and $CAR[-30,0)$ are statistically significant at 4.57% and 6.45% for the $GOODTIME = 0$ and $GOODTIME = 1$ groups, respectively. Importantly, $CAR[-30,0)$ is significantly negative for the $GOODTIME = 1$ group, and the difference between $CAR[0,30)$ and $CAR[-30,0)$ for $GOODTIME = 1$ is significantly higher than that for the $GOODTIME = 0$ group. We interpret the deeper trough pattern for the $GOODTIME = 1$ group as follows: CEOs play the game of timing earnings disclosures around options grant dates to increase their option value, or, if they backdate the options in the meantime, the backdated grant dates, coincidentally, are very close to the earnings announcement dates. Turning to the results in the post-SOX period, the difference between $CAR[0,30)$ and $CAR[-30,0)$ for the $GOODTIME = 0$ group is no longer significant, but the difference for the $GOODTIME = 1$ group is still statistically significant at the 1% two-tailed significance level, although the magnitude is smaller (3.31%) than that in the pre-

⁹ We use the notation $[a, b)$ to indicate an interval from a to b that is inclusive of a but exclusive of b . For example, $[-30,0)$ indicates an interval between day -30 and day 0, including day -30 but not day 0.

SOX period (6.45%). This finding supports our conjecture that while SOX curbs the opportunity for backdating, good-timing persists after SOX. The results presented from our first test thus support Hypothesis 2.

Panel B of Table 4 presents the results from our second test for the distribution of positive earnings surprises within the window from 30 trading days before option grant dates to the option grant dates and the window from option grant dates to 30 days after the option grant dates. We examine the magnitude of earnings surprise and the percentage of positive earnings surprise in these two windows.¹⁰ For the scheduled grants, the mean earnings surprise is negative in window [-30,0) and positive in window [0,30) in the pre-SOX period, and the percentage of positive earnings surprise is about 5.0% lower in window [-30,0) than that in window [0,30). Our evidence is consistent with the existence of a good-timing mechanism for scheduled option grants identified in Aboody and Kasznik (2000). The results for unscheduled option grants in the pre-SOX period are similar. Although the magnitudes of earnings surprise across the two windows are almost the same, the percentage of positive earnings surprises is significantly lower (3.9%) in window [-30,0) than that in window [0,30).

We now turn to the distribution of earnings surprises for scheduled and unscheduled option grants in the post-SOX period. For unscheduled grants, the mean of earnings surprise in the window before the option grants is negative, and it is positive afterward, with the difference being statistically significant at the 10% two-tailed significance level. In addition, the percentage of positive earnings surprise in window [-30,0) is now 7.6% lower than that in window [0,30), and the difference is statistically significant. For scheduled grants, the difference in the mean earnings surprises and the percentage of positive earnings surprise across the two windows are statistically

¹⁰ 30 trading days approximately equal 42 calendar days. We replicate the tests using 30 and 45 calendar days and find the results to be robust.

insignificant and similar to the case in the pre-SOX period. The above evidence is consistent with our conjecture that once the opportunity of backdating is reduced, managers might resort to good-timing as an alternative device to manipulate the market reaction to impending news and gain lower option-exercise prices, especially for unscheduled option grants.

To further our understanding of the role of good-timing in option grants, we next examine the timing of earnings disclosure relative to CEO option grant dates. Both Yermack (1997) and Aboody and Kasznik (2000) show that the most frequent option award date is the day prior to the earnings announcement, while the next-most-frequent award date is the announcement date. We replicate the frequency distribution of the earnings announcement dates relative to the scheduled and unscheduled option grant dates, and the distribution in Figure 2 shows that the peak of earnings announcement date is around the option grant date both pre- and post-SOX. Unreported estimates show that about 72% (78%) of earnings announced on option grant dates are positive surprises in the pre- (post-) SOX period.

Finally, we compare the abnormal stock returns around earnings announcements for the quarters with and without option grants, as illustrated by the “Grant” and “NoGrant” curves in Figure 3, respectively.¹¹ Panel A of Figure 3 presents the results for the pre-SOX period. We find that the pre-earnings-announcement stock returns are lower in the quarter with option grants than those in the quarter without option grants, while the pattern for the post-earnings-announcement stock returns across the two types of quarters is reversed. Similar patterns across the two groups continue to exist in the post-SOX period. The evidence strongly suggests that managers manipulate the timing of earnings disclosures to match the times of option awards in both the pre- and post-SOX periods.

¹¹ Note that unlike the prior two tests, day 0 in this test is the earnings announcement date, not the option grant date.

Taken together, the results from the tests presented in this subsection provide consistent evidence that good-timing jointly exists with backdating in the pre-SOX period and that, more importantly, good-timing continues to exist in the post-SOX period despite the oversight inherent in SOX. Thus our results support Hypothesis 2.

4.4. Reporting Lag, Dating Game, and Good-timing (Hypothesis 3)

In the above subsection, we show that earnings announcement dates and option grant dates are clustered together and that this pattern persists even in the post-SOX period when backdating is less likely to happen due to the tightened reporting requirement for stock option grants. We next take one step further and consider the following scenario: if managers do not comply with SOX and delay the filing of Form 4 after SOX, they might still be able to backdate their options despite the shorter look-back period. If this happens, we ask whether the clustered observations identified above are simply due to managers manipulating market reactions to earnings disclosure and picking the dates near earnings announcements as the backdated option grant dates to report to the SEC.

We are interested in further exploring the relation between reporting lags and both the good-timing game and the dating game.¹² In related studies, both Heron and Lie (2007) and Narayanan and Seyhun (2007) show that some firms filed Form 4 late post-SOX. They find that the trough pattern of stock returns exists for those grants violating the filing requirements and conclude that the additional filing days allow managers to either backdate or forward-date their option grants depending upon the stock price movement. While Narayanan and Seyhun (2007) argue that almost all dating games will lead to a reporting lag, we argue that a good-timing mechanism can

¹² Admittedly, under the enhanced scrutiny of the SEC and the common belief that backdating an option is illegal if it is not approved by, or disclosed to, the shareholders, or correctly accounted for accounting and tax purposes, one question remains—why would managers take the risk of getting caught for late filings if they are able to actively manipulate market expectations of the stock price through the timing of information disclosure? The answer depends upon the utility function that is assumed for managers and is ultimately an empirical issue that is beyond the scope of this study.

also generate the link between the reporting lag and the trough pattern of stock returns around grant dates post-SOX. This happens because playing the good-timing game of earnings disclosures is likely to prevent executives from filing Form 4 on time. For example, under the insider trading restrictions, executives would prefer to receive options on a day different from the major corporate event date such as earnings announcement date to avoid being accused of trading on material inside information. If only backdating exists post-SOX, we expect to find no association between the reporting lag and earnings announcements. We proceed to test whether earnings announcements cluster around option grants with the reporting lag greater than two days. In contrast to Narayanan and Seyhun (2007), who use the reporting lag as a proxy for the likelihood of the dating game, we propose an alternative explanation as stated in Hypothesis 3— that is, if the clustering of earnings announcements and option grant dates exists, the reporting lag is more likely to be the proxy for good-timing rather than backdating or forward-dating.

To test this hypothesis, we first examine the stock returns around the grant dates for the option grants with filing lags greater than two days in the $GOODTIME = 1$ and $GOODTIME = 0$ groups, respectively. If the good-timing of earnings disclosure has little impact on the trough pattern of stock returns around grant dates, we expect to observe no difference across the two groups. Figure 4 presents the results for scheduled, unscheduled, and pooled samples in the post-SOX period, respectively. Both Panels A and B show that a significant trough pattern exists only in the $GOODTIME = 1$ group, in which option grant dates are close to the nearest earnings announcement dates. Visual examination of figure 4 suggests that in the post-SOX period, when firms file Form 4 late, the timing of earnings announcements has a significant impact on the stock price pattern observed around option grant dates. Heron and Lie (2007) and Narayanan and Seyhun (2007) also examine the relationship between stock returns and the reporting lag. Two differences between our study and theirs are that we separate option grants close to earnings

announcements from those that are not close and separate scheduled and unscheduled option grants, which they do not. We present the results for the pooled sample in Panel C. We find no obvious trough pattern for the GOODTIME = 0 group and a trough pattern for the GOODTIME = 1 group. Taken together, our results suggest that when the option grant date is far away from an earnings announcement date, firms are less likely to backdate their options.

We next formally test the difference between the abnormal returns in the period from 30 trading days before to 30 trading days after grant dates for grants with reporting lags greater than two days. We compare the difference in the CARs across the two windows and the two GOODTIME groups, and the results are presented in Table 5. For the pooled sample, CAR[-30,0) for the GOODTIME = 1 group is significantly lower than that for the GOODTIME = 0 group by 2.52%, while CAR[0,30) for the GOODTIME = 1 group is significantly higher than that for the GOODTIME = 0 group by 2.67%. In addition, the difference in CARs between window [-30,0) and window [0,30) is significant only for the GOODTIME = 1 group. This pattern carries over to the unscheduled option grants and becomes even stronger. These results suggest that good-timing dominates backdating among option grants with a reporting lag longer than two days in the post-SOX period. Thus, our evidence supports Hypothesis 3—that is, the reporting lag is an indicator of good-timing rather than a dating game. In the multivariate analysis in next section, we further show that when there is no control for earnings information the reporting lag is significantly positively associated with abnormal returns after the option grant date. However, the association disappears after earnings information is controlled for.

In summary, our collective evidence from the univariate analysis thus far supports the three hypotheses proposed in Section 2. We now proceed to multivariate analysis to further explore how the interrelationship between the dating game and the timing of earnings disclosure has changed as a result of SOX regulation.

4.5. Multivariate Analysis of the Likelihood of Backdating and Good-timing

In this subsection we explore how the factors discussed so far affect the pattern of stock returns around the grant dates pre- and post-SOX, controlling for the magnitude of earnings surprises, firm size, stock volatility, and firm industry variables, which prior studies suggest are associated with the likelihood of backdating. Several recent studies argue that option backdating is likely to exist in small firms with high stock volatility in high-technology industry (Bebchuk et al. 2006; Walker 2006, Heron and Lie 2007). In addition, over 60% of 136 firms implicated as of December 31, 2006 by the SEC or the U.S. Justice Department for option backdating are technology firms. Thus, we estimate the following regression models for our analysis in the pre- and post- SOX periods, respectively:

$$CAR = \beta_0 + \beta_1 SCHEDULE + \beta_2 FORM + \beta_3 TIMEDIFF + \beta_4 SURPRISE + \beta_5 MV + \beta_6 VOLATILITY + \beta_7 HITECH + \gamma \quad (2)$$

or

$$CAR = \beta_0 + \beta_1 SCHEDULE + \beta_2 REPORTLAG + \beta_3 TIMEDIFF + \beta_4 SURPRISE + \beta_5 MV + \beta_6 VOLATILITY + \beta_7 HITECH + \gamma \quad (3)$$

The dependent variable is cumulative abnormal returns (CAR) in 30 trading days either before or after the option grant dates. *SCHEDULE* is defined the same as in Section 4.3. Other independent variables are defined as follows. *TIMEDIFF* is the number of days between the option grant date and the nearest earnings announcement date.¹³ *SURPRISE* is earnings surprise, defined as the actual quarterly earnings minus consensus earnings forecasts in IBES scaled by the stock price at the earnings announcement date. *MV* is the firm's market value at the earnings announcement date. *VOLATILITY* is the historical volatility of stock returns within the year preceding the option grant date. *HITECH* is an indicator variable for a high-technology firm as

¹³ Only those option grants with at least one earnings announcement within 45 days before and after the option grant date retain in our analysis.

defined in Chen, DeFond, and Park (2002). Regression equation (2) is used to test the association for the option grants pre-SOX. *FORM* is used only in equation (2) as the indicator variable equal to “1” if an option grant is reported to the SEC on Form 4 and “0” if reported on Form 5. Equation (3) is used to test the association post-SOX. Because Form 5 is eliminated post-SOX, we replace the variable *FORM* with *REPORTLAG*, which is defined as the natural logarithm of one plus the number of days between the reported option grant date and the SEC filing date post-SOX.¹⁴

Consistent with the findings in prior research on the trough pattern of stock returns around the option grant dates and our hypothesis 2, we expect to find $CAR[-30,0)$ to be negative and $CAR[0,30)$ to be positive, or, at the minimum, we expect $CAR[-30,0)$ to be smaller than $CAR[0,30)$. We also make several other predictions with respect to the signs of the coefficients. First, if backdating dominates good-timing, we expect the coefficient for *SCHEDULE* to be positive in the $CAR[-30,0)$ regression or/and negative in the $CAR[0,30)$ regression because the scheduled option grants are less likely to be backdated. Second, we expect the coefficient on *FORM* to be positive in the $CAR[-30,0)$ regression or/and negative in the $CAR[0,30)$ regression. This is likely to happen because the SEC allows firms to file Form 5 up to 45 days after the firm’s fiscal year end, which is a much longer window than for Form 4, thus giving firms more flexibility to backdate their options. However, if good-timing of earnings announcements has a significant impact, the coefficient for *TIMEDIFF* should be positive in the $CAR[-30,0)$ regression or/and negative in the $CAR[0,30)$ regression because the stock returns before (after) option grant dates should be more negative (positive) when earnings announcements and option grant dates are close to each other. Third, the coefficient for *SURPRISE* is expected to be positive in both the $[-30,0)$ and $[0,30)$ windows because stock price would react positively to good earnings news.

¹⁴ We take the logarithm because the distribution of the reporting lag is skewed. We add one to keep the observations with zero reporting lag — i.e., when the grant date and filing date occur on the same day.

Finally, in the post-SOX period, if the reporting lag is an indication of a dating game as suggested by Heron and Lie (2007) and Narayanan and Seyhun (2007), we should expect the coefficient on *REPORTLAG* to be significantly negative in the $CAR[-30,0)$ regression and positive in the $CAR[0,30)$ regression.

Table 6 summarizes the results for both the pre-SOX and post-SOX periods. We find that, in the pre-SOX period, the cumulative abnormal return is negative at -0.79% in the 30 trading days preceding the option grant date and positive at 3.07% in the 30 trading days following the option grant date, confirming the existence of the trough pattern of stock returns. The post-SOX cumulative abnormal returns in the 30 trading days preceding and following the option grant date are 0.87% and 1.92%, respectively, which suggests that the trough pattern of stock returns disappears and is replaced with only a small kink after SOX. We interpret our results as evidence consistent with prior findings that backdating is significantly curtailed after SOX.

We first regress abnormal returns on the *SCHEDULE* and *FORM* variables for the pre-SOX period only (Models 1 and 3 in Table 6). We find that the coefficient for *FORM* is significantly positive in the $CAR[-30,0)$ regression and the coefficient for *SCHEDULE* is significantly negative in the $CAR[0,30)$ regression at the conventional 5% and 1% two-tailed significance levels, respectively. Our evidence supports the conjecture in Hypothesis 1 that scheduled option grants and option grants recorded on Form 4 are less likely to be backdated. These two coefficients remain significant after controlling for earnings information and other control variables in the full models (Models 2 and 4). From the full models, we can see that the *TIMEDIFF* is insignificant in both the $CAR[-30,0)$ and $CAR[0,30)$ regressions, suggesting that backdating dominates good-timing in the pre-SOX period. However, the timing of the earnings information is not negligible given the significantly positive coefficient for *SURPRISE* in both regressions. These findings are not surprising because backdating is an ex-post tactic that uses the benefit of hindsight. On the

other hand, good-timing is an ex-ante tactic that requires reasonably good foresight with regard to market reactions to the news release, which means that executives are therefore more likely to be engaged in backdating under the relaxed regulation scrutiny before August 29, 2002.

For the post-SOX period, we again first regress abnormal returns on the *SCHEDULE* and *REPORTLAG* variables only (Models 5 and 7). The coefficients for both *SCHEDULE* and *REPORTLAG* are insignificant for the $CAR[-30,0)$ regression, while the coefficients are significant for the $CAR[0,30)$ regression. At first sight, these results accord with the findings in Heron and Lie (2007) and Narayanan and Seyhun (2007) that the options grants with larger reporting lags have higher positive abnormal returns after the grant date in the post-SOX period. However, further analysis shows that it is the timing of earnings disclosure and earnings surprises that drive such an association. As shown in last column of Table 6 (Model 8), after controlling for earnings information the coefficients for *SCHEDULE* and *REPORTLAG* in the $CAR[0,30)$ regression become insignificant, and the coefficients for *TIMEDIFF* and *SURPRISE* in the regression are significantly negative and positive, respectively, at the 1% two-tailed significance level. No variables are significant in the $CAR[-30,0)$ regression (Model 6).

Thus, our analysis suggests there is no significant difference in the stock returns across scheduled and unscheduled option grants post-SOX. Instead, we find that the closer the earnings announcement date is to the option grant date (the smaller the *TIMEDIFF*), the higher is the CAR after the option grant. These results strongly support our Hypothesis 2, i.e., while SOX mitigates backdating, it does not stop executives from timing earnings disclosures around option grant dates to increase their option value. Furthermore, the result that the coefficient for *REPORTLAG* becomes insignificant once the earnings information is controlled for lends support to our Hypothesis 3, which states that the reporting lag is likely to be an indication of good-timing rather than backdating.

There is no significant association between the abnormal returns and firm size and industry classification in the S&P1500 firms. However, stock price volatility is associated positively with CAR [0,30), which is consistent with the argument in prior studies that backdating is more likely to occur in firms with higher volatility.

5. Additional Analyses

5.1. Analysis of Firms that Violate the SEC's Two-Day Filing Rule

What type of firms has the intent and ability to engage in late filing strategy? In Hypothesis 3, we argue that post-SOX reporting lag may be an indicator of good timing. However, one of the concerns is that if earnings announcement dates are sticky, especially if firms voluntarily disclose their earnings announcement dates in advance, firms are left with little flexibility to engage in the timing strategy. To address this concern, we identify firms that violate the SEC's two-day filing rule and classify them as the Violation sample. We then investigate whether these firms' actual earnings announcement dates in the option grant quarters are different from those in the previous fiscal quarters. We define a new variable, DELAY, as the difference of (earnings announcement date – fiscal quarter ending date) between current and previous quarters. If the earnings announcement dates are sticky, we expect the value of DELAY to be close to zero. In addition, we regress the reporting lag (which is the number of days between option grant date and the SEC filing date) on DELAY, after controlling for other variables used in previous regressions shown in Table 6.

Panel A of Table 7 presents the descriptive statistics for the variables in interest. The median value for DELAY is two days, suggesting that for most of the firms, the earnings announcements are sticky. However, with mean value 5.4 days and standard deviation 26.23, there is still ample room for firms to engage in good timing. Compared with the descriptive statistics for Sample 3 in Table 3, Violation sample firms have similar market value but higher

market to book ratio. The mean earnings surprise is negative in the quarter with option grants. Among the Violation sample 28% are scheduled option grants and 29% are from high-tech industry.

Panel B of Table 7 provides the results of regressing reporting lag on DELAY and other control variables. Multiple regression analysis shows that the reporting lag is negatively associated with both the size of earnings surprise and the firm's market value. That is, negative (positive) earnings surprise is associated with longer (shorter) reporting lag, while smaller (larger) firms have longer (shorter) reporting lag. Thus, our results suggest that small firms with bad news are more likely to engage in the good-timing practice.

5.2 Possible-Forward-Dating, No-Dating-Game, and Possible-Backdating

Narayanan and Seyhun (2007) propose the concept of forward-dating as an alternative dating game that will also increase the option value independent of managers' performance. The idea is that if the stock price has been falling prior to the grant date, backdating clearly will not generate a maximum value to the options because the stock price on the misreported date will not be the local minimum. In such a case, executives would rather wait to see how the stock price will move afterward. If the price continues to fall, executives would choose a future date when the stock price is anticipated to reach a local minimum as the reported grant date. In previous section, we show that the option grants filed to the SEC more than two days after the award dates are from small firms with negative earnings surprises. We now extend our analysis to investigate whether these firms are likely involved in forward-dating.

We conduct two sets of tests, both of which include only those option grants awarded within the period one month before to one month after the annual board meeting date. We classify those options awarded on any date within one month (31 days) but after three days following the annual board meeting dates as the Possible-Forward-Dating (PFD) group and those granted more than

three days before the board meeting dates as the Possible-Back-Dating (PBD) group. The No-Dating-Game (ND) group consists of options awarded within the period three days before to three days after annual board meetings. The first two columns of Panel A of Table 8 presents the numbers of option grants and the percentages of the PFD, ND, and PBD groups, respectively, in the post-SOX period.¹⁵

In our first test, we compare the cumulative abnormal returns around option grant dates across the three groups and report the results in Columns 3 to 5 in Panel A of Table 8. For the PFD sample, we would expect the stock price to drop before the grant date, but instead the stock price increases in both periods. This suggests that we find no evidence of forward-dating in the post-SOX period. Turning to the difference between PBD and PFD, we find that the abnormal returns for the PBD group before (after) the grant date are always lower (higher) than those for the PFD group. We interpret these results as evidence that backdating or good-timing dominates forward-dating.

In our second test, we examine the relationships among earnings announcement dates, option grant dates, and the SEC filing dates for the three groups. Panel B of Table 8 shows how these three dates are interrelated for the PFD, ND, and PBD groups, respectively. Columns 2 and 3 of Panel B show the difference in the number of days between the earnings announcement date and the option grant date. The mean and median values of the day difference between the earnings announcement and option grant date for the PBD group are only 0.1 and 0.5 day, respectively. This indicates that earnings announcement and the option grant almost occur on the same date.

¹⁵ We are conscious that this classification is ad hoc. In addition, this sample accounts for only a small portion of the Thomson Financial sample because the board meeting dates are clustered in late spring. Nonetheless, our objective is simply to generate three groups that are more likely to have forward-dating, no-dating-game, and backdating patterns, respectively.

Moreover, the percentage of positive surprises is 64.7% post-SOX.¹⁶ Compared with the percentages of positive surprises for other two groups (ND and PFD), the number suggests that managers are more likely to pick the earnings announcement date with negative surprises as the option grant date in the post-SOX period. Columns 4 and 5 of Panel B show the mean and median of the difference in the number of days between firms' SEC filing dates and the option grant dates across all three groups. Not surprisingly, the reporting lag is the longest for PBD group. The median reporting lag is two days for PFD and ND grants and three and half days for PBD grants. This indicates that most of the firms in our subsample follow the new two-day filing requirement. However, the mean reporting lag is much longer than two days, which suggests that some firms might have reported the option grant with a long delay, particularly for the firms in PBD group.

The evidence in this subsection suggests that forward-dating game is not validated in the post-SOX period, but we should interpret the evidence cautiously give the small sample size.

6. Concluding Remarks

We attempt to distinguish between the effects of opportunistic backdating of option grants and opportunistic timing of earnings disclosures on abnormal stock returns around CEOs' stock option grants for S&P1500 firms. Consistent with our conjecture that a longer reporting lag provides more flexibility for firms to backdate, we find that, prior to the reporting rule change in the Sarbanes-Oxley Act of 2002, backdating is more prevalent for firms filing Form 5 to the SEC than for firms filing Form 4. We also confirm the findings in previous studies that SOX has greatly curtailed option backdating. More importantly, we present the first direct evidence that good-timing of earnings disclosures not only persists but becomes even stronger post-SOX. Our results suggest that once the opportunity of backdating is greatly diminished, good-timing becomes more attractive and serves as a substitute device that managers use to manipulate the

¹⁶ A similar analysis for PBD group in pre-SOX period indicates the percentage of positive surprises is 88.5%.

market expectations around grant dates via earnings information announcements. In contrast to the argument in concurrent studies that attributes the trough pattern of stock returns post-SOX to evidence of the dating game, we thus provide an alternative explanation for what drives the trough pattern of stock returns around option grant dates post-SOX. In addition, we find that the reporting lag in the post-SOX period is an indicator of good-timing rather than backdating or forward-dating. Our results are robust to controlling for the magnitude of earnings surprise, firm size, stock-return volatility, and firm industry variables.

Taken together, our evidence suggests that good-timing of earnings disclosure is an important driving force of the abnormal stock return patterns around CEO stock option grants, especially in the post-SOX period. In view of these findings, our study extends and reconciles two streams of the literature—the good-timing hypothesis proposed by Yermack (1997) and Aboody and Kasznik (2000) and the backdating hypothesis advanced by Lie (2005) and Narayanan and Seyhun (2007). It does so by showing how the effect of backdating is confounded by the good-timing of earnings disclosure, and how the new regulation on option grant reporting affects the dynamics across the two types of games.

Our study contributes to the executive compensation literature by providing direct evidence consistent with CEOs opportunistically timing both option grants and earnings announcements to increase personal gains from their stock option compensation. While we do not investigate whether and how these manipulation activities destroy shareholder value, our findings suggest that underestimating the effect of good-timing both pre- and post-SOX can lead to an overestimate of the prevalence of backdating in the economy as a whole. We contribute also to the disclosure literature by presenting evidence of the impact of regulation restrictions on corporate disclosure behavior and insider trading. Our findings suggest that SOX does not stop executives

from strategically reporting bad news before the option grant and good news after the option grant. These conclusions merit further attention.

In response to the widespread revelation of fraudulent stock option backdating, the SEC adopted new disclosure rules on executive compensation on July 26, 2006 (Cox 2006). More specifically, the new rules pertaining to option grants require companies to disclose the following: (1) the grant date fair value under the Statement of Financial Accounting Standard No. 123 R (SFAS 123R); (2) the SFAS 123R grant date; (3) the closing market price on the grant date if it is greater than the exercise price of the option; (4) the date the compensation committee or full board of directors took action to grant the option if that date is different than the grant date; and (5) a complete quantitative and narrative disclosure of a company's executive compensation plans and goals. The new rules were complemented by additional accounting guidance on these subjects and became effective on November 7, 2006. Yet, while these accounting and disclosure rule changes will make it easier to detect and punish backdating abuses going forward, uncovering and preventing the timing of corporate news disclosures around grant dates by executives in order to increase their compensation remain a challenge.

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TABLE 1
Sample Selection Procedures

	Number of Observations
(1) Unique option grant records in Thomson Financial Insider database up to November 11, 2005.	81,421
(2) Option Grant dates after imposing the cleaning criteria.	19,898
(3) Combine with the observations in IRRC Directors database.	6,661
(4) Sample 1: Option grant dates reported on Form 5	1,780
Sample 2: Option grant dates reported on Form 4 pre- SOX	3,374
Sample 3: Option grant dates reported on Form 4 post-SOX	1,507

Data on the CEO option grant dates are extracted from the Thomson Financial Insider database. IRRC Directors database consists of S&P1500 firms (active and inactive).

TABLE 2
Distribution of Stock Option Grant Dates and Firm's Fiscal Year End

	Sample 1		Sample 2		Sample 3		Fiscal Year End	
	Number	% total	Number	% total	Number	% total	Number	%
<i>January</i>	234	13.15	502	14.88	181	12.01	88	5.4
<i>February</i>	182	10.22	551	16.33	266	17.65	25	1.5
<i>March</i>	151	8.48	304	9.01	143	9.49	75	4.6
<i>April</i>	103	5.79	288	8.54	113	7.50	15	0.9
<i>May</i>	139	7.81	290	8.60	115	7.63	26	1.6
<i>June</i>	125	7.02	174	5.16	65	4.31	87	5.3
<i>July</i>	123	6.91	218	6.46	89	5.91	26	1.6
<i>August</i>	78	4.38	190	5.63	76	5.04	23	1.4
<i>September</i>	123	6.91	136	4.03	76	5.04	98	6.0
<i>October</i>	131	7.36	196	5.81	106	7.03	37	2.3
<i>November</i>	110	6.18	174	5.16	94	6.24	21	1.3
<i>December</i>	281	15.79	351	10.40	183	12.14	1,118	68.2
Total	1,780	100.0	3,374	100.0	1,507	100.0	1,639	100.0

TABLE 3
Descriptive Statistics

PANEL A: Sample 1 (Firms filing Form 5)

	Number	Mean	Stddev	Q1	Median	Q3
MV	1,742	3,570	9,357	320	892	2,391
TA	1,742	5,638	21,748	293	868	2,953
MV_BV	1,742	4.62	45.38	1.51	2.31	3.90
ROA	1,742	-0.01	0.27	0.01	0.03	0.07
GROWTH	1,742	0.38	2.05	0.03	0.13	0.35
LTD_BV	1,742	1.10	9.28	0.01	0.32	0.90
XPRICE	1,952	24.38	16.67	12.50	21.26	32.20
#SHARES	1,952	157,186	773,915	20,000	50,000	143,265

PANEL B: Sample 2 (Firms filing Form 4 pre SOX)

	Number	Mean	Stddev	Q1	Median	Q3
MV	3,302	5,305	14,824	385	1,012	3,523
TA	3,302	8,437	34,472	406	1,119	4,127
MV_BV	3,302	5.03	50.81	1.52	2.33	3.80
ROA	3,302	0.02	0.19	0.01	0.04	0.08
GROWTH	3,302	0.23	2.26	0.02	0.11	0.27
LTD_BV	3,302	0.74	6.83	0.05	0.37	0.80
XPRICE	3,767	29.56	25.11	14.22	24.44	38.00
#SHARES	3,767	144,911	700,371	18,750	50,000	125,000

PANEL C: Sample 3 (Firms filing Form 4 post SOX)

	Number	Mean	Stddev	Q1	Median	Q3
MV	1,477	5,560	14,115	660	1,627	4,569
TA	1,477	10,259	57,657	545	1,541	5,051
MV_BV	1,477	3.28	9.65	1.67	2.35	3.56
ROA	1,477	0.02	0.20	0.01	0.04	0.08
GROWTH	1,477	0.16	0.50	0.02	0.10	0.21
LTD_BV	1,477	0.69	3.41	0.01	0.33	0.75
XPRICE	1,590	27.34	18.68	13.62	24.25	37.46
#SHARES	1,590	144,574	1,699,688	15,000	37,745	95,000

Variable Definitions:

MV: The firm's market value at the end of the fiscal year in which the option is granted (Compustat Data199 multiplied by Data25), in millions.

TA: Total assets in millions (Data6).

MV_BV: The market value divided by the common equity (Data60), excluding negative value of equity.

ROA: The ratio of income before extraordinary items (Data18) to total assets.

GROWTH: The percentage change in net sales (Data12) from prior year.

LTD_BV: The ratio of the long-term debt (Data142) to the common equity, excluding the negative value of equity.

XPRICE: The exercise price of the options granted.

#SHARES: The number of shares granted.

TABLE 4*Cumulative Abnormal Returns and Distribution of Earnings Surprises around Option Grant Dates*

Panel A: Evidence from cumulative abnormal returns

	Scheduled			Unscheduled		
	CAR[-30,0)	CAR[0,30)	Difference	CAR[-30,0)	CAR[0,30)	Difference
Pre-SOX:						
GOODTIME = 0	1.07	1.62	0.55	-0.53	4.04	4.57 ^{***}
GOODTIME = 1	-0.15	0.92	1.07	-2.06	4.39	6.45 ^{***}
Difference	-1.22	-0.70		-1.53 [*]	0.35	
Post-SOX:						
GOODTIME = 0	0.96	0.87	-0.09	1.97	1.61	-0.36
GOODTIME = 1	0.29	1.43	1.14	1.00	4.31	3.31 ^{***}
Difference	-0.67	0.56		-0.97	2.70 ^{***}	

Panel B: Evidence from earnings surprises

	Scheduled			Unscheduled		
	Window [-30,0)	Window [0,30)	Difference	Window [-30,0)	Window [0,30)	Difference
Pre-SOX:						
Mean Surprises	-0.12	0.02	0.14	-0.80	-0.67	0.13
% Positive Surprises	63.1	68.1	5.0	65.2	69.1	3.9 [*]
Number of Grants	358	264		1,059	1,049	
Post-SOX:						
Mean Surprises	0.03	0.02	-0.01	-0.38	0.03	0.41 [*]
% Positive Surprises	75.0	71.6	-3.4	67.2	74.8	7.6 ^{**}
Number of Grants	180	116		384	353	

CAR [-30,0) and CAR[0,30) are the cumulative abnormal returns in the 30-trading-day window before and after the option grant date, respectively. Abnormal returns are calculated as the difference between raw returns and value-weighted market returns. GOODTIME is a dummy variable with a value of “1” if the day difference between earnings announcements and option grants is less than or equal to 10 calendar days and “0” if this day difference is more than 10 but less than or equal to 45 calendar days. Earnings surprise is equal to the actual quarterly earnings (EPS) minus the consensus earnings forecasts (AF) scaled by the stock price at the earnings announcement dates. Surprise is multiplied by 100. Scheduled option grants are those granted either within one week of the one-year anniversary of prior grants or within one week of the annual board meeting date. *, **, and *** indicate the 0.1, 0.05, and 0.01 (two-tailed) significance levels, respectively.

TABLE 5

Cumulative Abnormal Returns Around the Option Grant Dates for Grants with Reporting Lags Greater Than Two Days in the Post-SOX Period

	Scheduled			Unscheduled			Pooled Sample		
	CAR [-30,0)	CAR [0,30)	Diff	CAR [-30,0)	CAR [0,30)	Diff	CAR [-30,0)	CAR [0,30)	Diff
GOODTIME = 0	1.04	-1.15	-2.29	3.25	2.60	-0.60	2.81	1.85	-0.96
GOODTIME = 1	1.11	2.53	1.42	-0.17	5.63	5.80***	0.29	4.52	4.23***
Difference	0.07	3.68**		-3.42*	3.03**		-2.52*	2.67**	

See Table 4 for the definition of the classifications. *, **, and *** indicate the 0.1, 0.05, and 0.01 (two-tailed) significance levels, respectively.

TABLE 6*Multivariate Analysis of the Likelihood of Good-Timing in the Pre- and Post-SOX Periods*

Dependent Variable	Pre-SOX				Post-SOX			
	CAR[-30,0)		CAR[0,30)		CAR[-30,0)		CAR[0,30)	
Mean (%)	-0.79		3.07		0.87		1.92	
	Models							
Indep. Variables	1	2	3	4	5	6	7	8
Intercept	-2.21*** (-4.04)	-1.40 (-0.44)	3.60*** (6.19)	1.81 (0.54)	1.39 (1.38)	-8.41 (-1.20)	0.82 (1.17)	0.40 (0.08)
SCHEDULE	0.51 (0.70)	0.44 (0.60)	-2.54*** (-3.29)	-1.88** (-2.44)	-0.85 (-0.72)	-0.72 (-0.59)	-1.57* (-1.90)	-0.62 (-0.76)
FORM	1.94*** (3.00)	1.88*** (2.90)	0.06 (0.09)	0.47 (0.69)				
REPORTLAG					-0.19 (-0.36)	-0.15 (-0.27)	1.08*** (2.85)	0.57 (1.52)
TIMEDIFF		0.02 (0.87)		-0.007 (-0.31)		0.01 (0.22)		-0.09*** (-3.44)
SURPRISE		54.29** (2.04)		62.26** (2.24)		21.30 (0.72)		65.82*** (3.29)
MV		-0.02 (-0.10)		-0.31 (-1.45)		0.57 (1.33)		-0.18 (-0.63)
VOLATILITY		-1.91 (-1.21)		12.79*** (7.73)		2.47 (0.73)		13.95*** (6.12)
HITECH		0.30 (0.37)		0.41 (0.49)		1.22 (0.90)		-0.60 (-0.66)
Adj. R-Sq	0.25%	0.31%	0.29%	3.07%	-0.13%	-0.25%	0.92%	7.10%
# of Observations	3,054		3,054		1,056		1,056	

Variable definitions:

CAR[-30,0) and *CAR[0,30)*: Cumulative abnormal returns in the 30-trading-day window before and after the option grant date, respectively. Abnormal returns are calculated as the difference between raw returns and value-weighted market returns.

SCHEDULE: Indicator variable, "1" if the option is awarded within one week of the anniversary date of the prior year's grant date or within three days of the annual board meeting date, and "0" otherwise.

FORM: Indicator variable, "1" if the option grants are reported to the SEC on Form 4 and "0" if reported on Form 5 pre-SOX.

REPORTLAG: The natural logarithm of one plus the number of days between the option grant date and the SEC filing date post-SOX.

TIMEDIFF: The number of days between the earnings announcement date and the option grant date.

SURPRISE: Actual quarterly earnings minus consensus earnings forecasts in IBES scaled by the stock price at earnings announcement date.

MV: The firm's market value at the earnings announcement date.

VOLATILITY: Historical volatility of stock returns within the year preceding the option grant date.

HITECH: High-technology firm dummy as defined in Chen et al. (2002).

The numbers in parentheses are the t-statistics. *, **, and *** indicate the 0.1, 0.05, and 0.01 (two-tailed) significance levels, respectively.

TABLE 7
Analysis of Firms Violating the SEC's Two-Day Filing Rule

Panel A: Descriptive statistics

	# of obs	Mean	Stddev	Q1	Median	Q3
REPORTLAG	419	37.51	144.16	4	4	5
DELAY	419	5.41	26.23	1	2	5
MV	419	5,283	11,343	668	1,500	4,469
TA	419	6,611	23,471	568	1,592	4,763
MV_BV	417	4.04	6.01	1.79	2.49	4.00
ROA	419	0.04	0.11	0.01	0.04	0.09
GROWTH	416	0.14	0.23	0.04	0.11	0.20
LTD_BV	387	0.73	1.36	0.02	0.33	0.82
XPRICE	419	28.12	17.92	14.6	25.51	38.11
VOLATILITY	419	0.42	0.22	0.27	0.37	0.50
TIMEDIFF	419	18.13	13.35	6	16	29
SURPRISE	418	-0.0005	0.013	0.00	0.0004	0.0015
SCHEDULE	419	0.28	0.45	0	0	1
HITECH	419	0.29	0.45	0	0	1

Panel B: Regression analysis with the reporting lag as the dependent variable

	Coefficient	t-statistic
INTERCEPT	4.50 ^{***}	6.13
DELAY	-0.0008	-0.36
SCHEDULE	0.028	0.22
TIMEDIFF	-0.004	-1.03
SURPRISE	-0.099 ^{**}	-2.18
MV	-0.152 ^{***}	-3.30
VOLATILITY	-0.305	-0.95
HITECH	0.050	0.36
Adj. R-Sq		3.26%
# of Obs.		419

DELAY is defined as the difference of (earnings announcement date – fiscal quarter ending date) between current and previous quarters. See Table 6 for the definition of other variables. *, **, and *** indicate the 0.1, 0.05, and 0.01 (two-tailed) significance levels, respectively.

TABLE 8

Analysis of Possible-Forward-Dating, Possible-Backdating, and No-Dating-Game Grants in Post-SOX period

Panel A: Returns around option grant dates

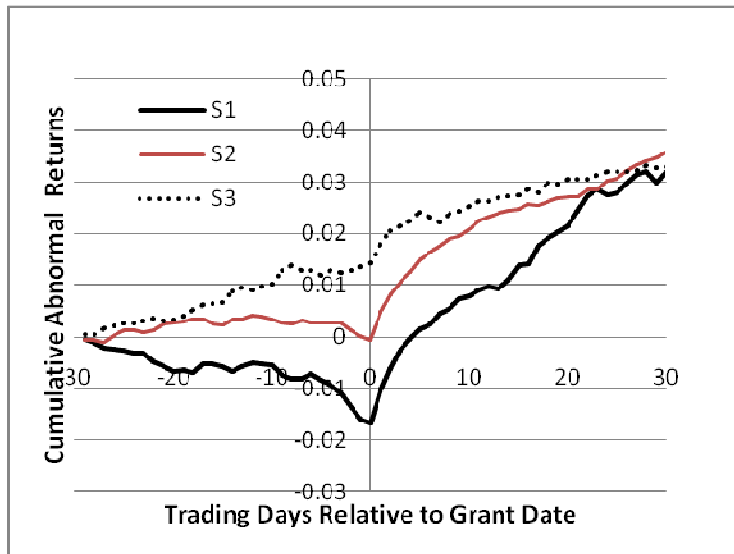
	Distribution of Option Grants		Returns around Option Grant Dates		
	# obs	percentage	CAR[-30,0)	CAR[0,30)	Diff
PFD	42	24.1%	4.02	4.49	0.47
ND	94	54.0%	0.80	1.74	0.94
PBD	38	21.8%	-1.29	2.49	3.78
Difference between PBD and PFD			-5.31*	-2.00	

Panel B: Relations among earnings announcement date, option grant date, and the SEC filing date

	Earnings announcement date – Option grant date		SEC filing date – Option grant date		% of positive surprises
	Mean	median	mean	median	
Form 4, Post-SOX:					
PFD	-15.2	-22	3.2	2	71.8
ND	-9.1	-8	7.2	2	66.2
PBD	-0.1	-0.5	8.3	3.5	64.7

The three groups are defined as follows. Possible-Forward-Dating (PFD) consists of those options granted at least three days after but within one month (31 days) following the annual board meeting date. Possible-Backdating (PBD) consists of the options granted at least three days before the annual board meeting date. The options granted within the three-day window before and after the annual board meeting date are classified as No-Dating-Game (ND). Panel A shows the numbers and percentages of the three groups, and the CAR around the option grant dates. Panel B provides the interrelationships among the earnings announcement date, the option grant date, and the SEC filing date for the three groups. * and ** indicate the 0.1 and 0.05 (two-tailed) significance levels, respectively.

Panel A: Cumulative abnormal returns for IRRC sample



Panel B: Cumulative abnormal returns for Thomson Financial Insider Filings sample

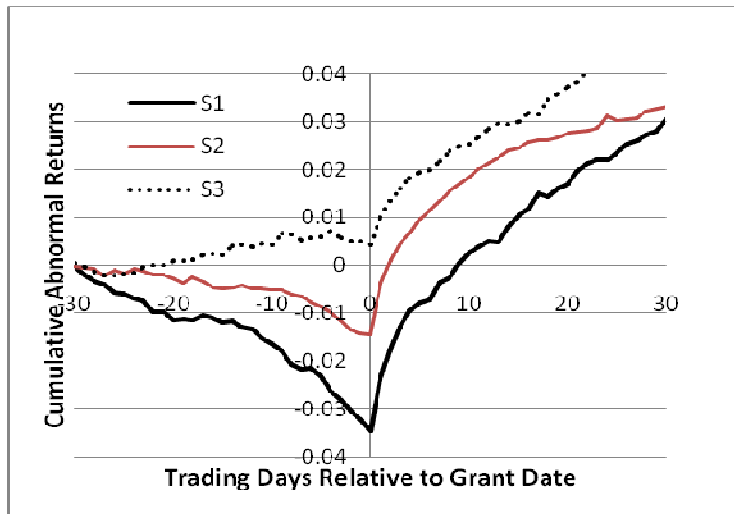


FIG. 1. The stock returns around option grant dates for the samples that are classified based on the forms filed with the SEC. Panels A and B show the cumulative abnormal returns for the S&P 1500 firms from the IRRC sample and the Thomson Financial sample—i.e., all CEO option grant dates available in the Thomson Financial Insider database. S1, S2, and S3 stand for CEO option grants reported on Form 5, Form 4 in the pre-SOX period, and Form 4 in the post-SOX period, respectively. The abnormal return represents the difference between the value-weighted market returns and raw returns.

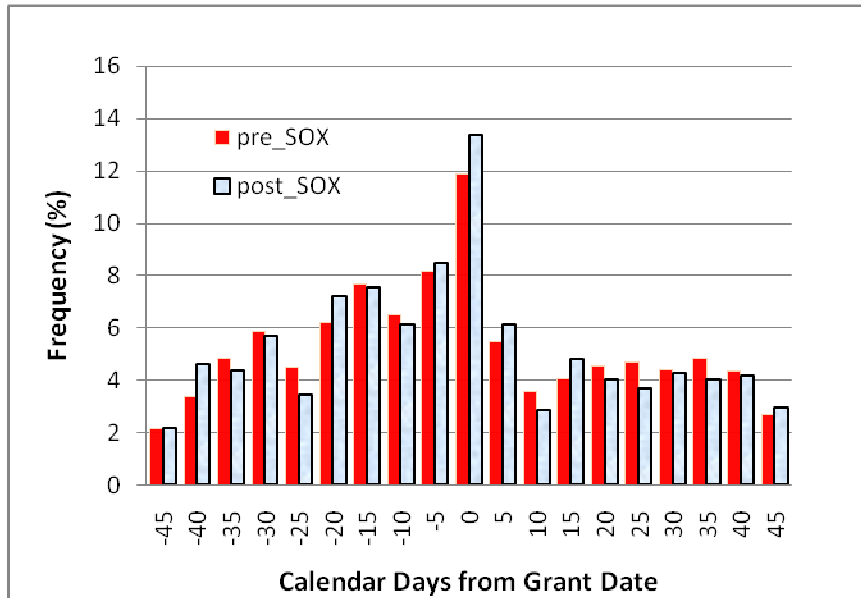


FIG. 2. Frequency distribution of earnings announcements around option grant date. The sample consists of both scheduled and unscheduled CEO option grants in the IRRC and Thomson Financial Insider databases from 1996 to November 11, 2005.

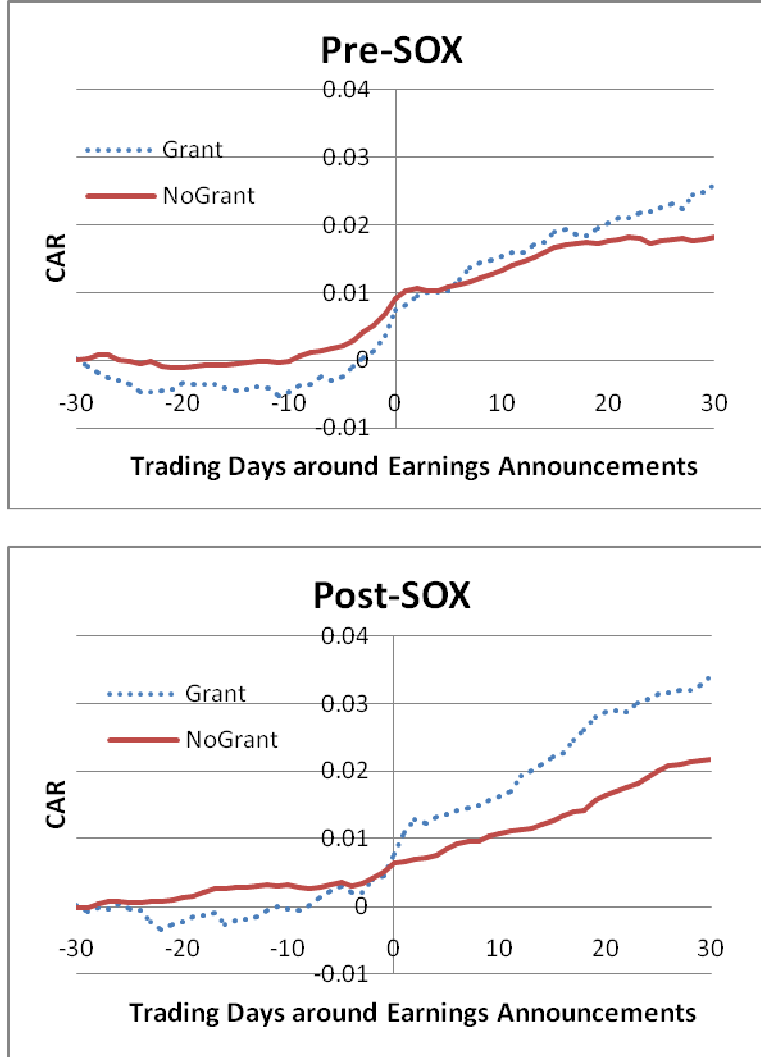
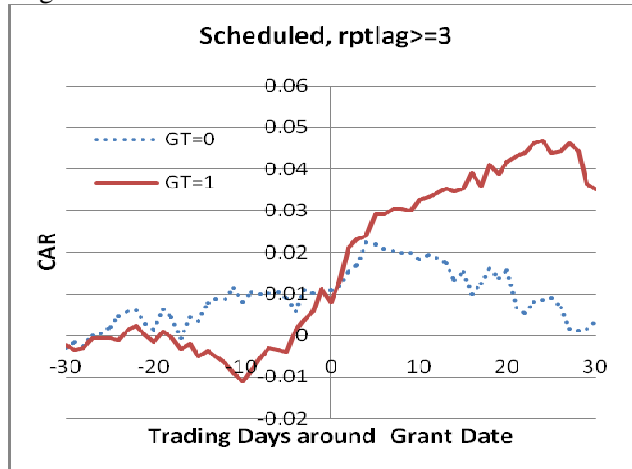
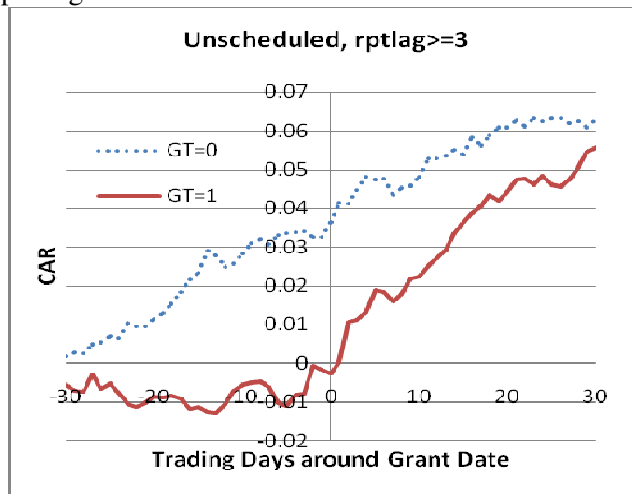


FIG. 3. — Stock returns around earnings announcement dates for the quarters with and without option grants. Earnings announcements in the quarter with option grants, denoted by “Grant,” are defined as those announcements in the quarter in which there is at least one option grant within 45 calendar days before and after the announcement. The remaining earnings announcements are defined as in the quarter without option grants and are denoted by “NoGrant.”

Panel A: Scheduled option grants



Panel B: Unscheduled option grants



Panel C: Pooled option grants

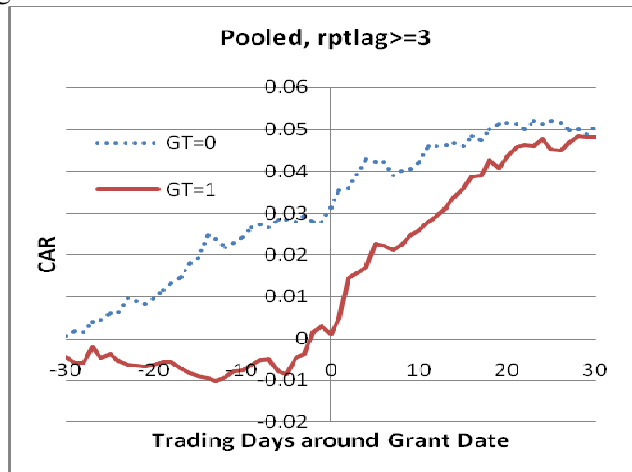


FIG. 4. — Cumulative abnormal returns in the window (-30, 30) around the option grant dates for the options filed three days or longer after the grants ($rptlag \geq 3$) in the post-SOX period.