On the timing of CEO stock option awards*

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Abstract

This study documents that the abnormal stock returns are negative before unscheduled executive option awards and positive afterward. The return pattern has intensified over time, suggesting that executives have gradually become more effective at timing awards to their advantage, and possibly explaining why the results in this study differ from those in past studies. Moreover, I document that the predicted returns are abnormally low before the awards and abnormally high afterward. Unless executives possess an extraordinary ability to forecast the future market-wide movements that drive these predicted returns, the results suggest that at least some of the awards are timed retroactively.

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1. Introduction

Stock options are generally granted with a fixed exercise price equal to the stock price on the award date. If executives can influence the timing of a grant, they might therefore time it to occur (i) after an anticipated future stock price decrease, (ii) after a recent price decrease that they perceive to be unwarranted by fundamentals (in which case the price would gradually increase in the future), or (iii) before an anticipated stock price increase. In any of these cases, self-serving behavior by executives should manifest itself in stock price decreases before stock option grants and/or stock price increases afterward.

Yermack (1997) examines the stock returns around 620 stock option awards to CEOs between 1992 and 1994. While the stock returns leading up to the award dates are normal, the stock returns during the 50 trading days afterward exceed those of the market by more than two percent. He interprets these results as evidence that executives opportunistically time awards to occur before anticipated stock price increases. Aboody and Kasznik (2000) investigate a sample of 2,039 scheduled option awards to CEOs between 1992 and 1996. They focus on scheduled awards to remove the possibility that the results are attributable to opportunistic timing of the awards. The abnormal returns before scheduled awards are statistically indistinguishable from zero, while the abnormal returns during the subsequent 30 days are almost two percent and statistically different from zero. They interpret these findings to suggest that executives opportunistically time the release of information around fixed option awards. Using a different data source, Chauvin and Shenoy (2001) find evidence of negative abnormal returns before 783 CEO option grants between 1981 and 1992, and these returns are actually more negative for the sample of scheduled awards than for their overall sample. However, they find little evidence of positive abnormal returns following the awards.[1]

[1] One might argue that the results in Chauvin and Shenoy (2001) are not directly comparable to those of Yermack (1997) and Aboody and Kasznik (2001). Whereas Yermack and Aboody and

The somewhat conflicting results in extant literature suggest that further analysis of the stock price returns around option awards would be fruitful. The purpose of the initial part of this study is to provide such an analysis. I gather a sample of 5,977 CEO stock option awards from 1992 through 2002, 1,668 of which I have sufficient information to classify as unscheduled and 1,426 as scheduled. The stock return pattern for unscheduled awards is strong and striking. The average abnormal return during the thirty trading days leading up to the awards is negative three percent, most of which occurs during the ten days immediately before the award. After the unscheduled awards, there is a sharp reversal; during the first ten days afterward the average abnormal return is two percent, and it is almost another two percent during the next twenty days. I document a similar pattern for scheduled awards. However, it is considerably weaker, presumably because awards that I classify as scheduled allow less leeway in setting the grant date. In particular, the abnormal stock return is roughly negative one percent during the thirty days before the scheduled awards and roughly one percent during the thirty days afterward. In the remainder of my analysis, I focus on the sample of unscheduled awards, because the main focus of this paper is the timing of awards (rather than the timing of information releases around awards).

Next, I examine whether the documented return trends arising from award timing have changed over time. The exposure of opportunistic behavior in Yermack (1997) or recent scandals such as that involving Enron might have made executives more reluctant to engage in such behavior. Alternatively, executives might have become more effective in timing the awards to their advantage. I show that the abnormal return trends around unscheduled awards have

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Kasznik compile their samples of option awards from yearly proxy statements, Chauvin and Shenoy get their sample from backfiled reports supplied by the companies shortly after reporting changes in May 1991. Thus, it is conceivable that the results in Chauvin and Shenoy suffer from sample selection bias.

intensified over time. This suggests that executives are getting better or more aggressive at opportunistically timing awards during the sample period. Thus, Yermack's exposure of award timing did little to minimize these activities. If anything, it might have had the opposite effect. The results might further explain why Yermack finds no evidence of poor stock price performance leading up to awards using a sample from 1992 through 1994, as the effect seems rather modest for this earlier period, and why Chauvin and Shenoy (2001) find scant evidence of good stock price performance after awards using a sample from 1981 through 1992.

If the distinct stock return pattern around scheduled awards is entirely attributable to executives timing awards relative to expected future price patterns, their collective ability to forecast future price movements based on inside information is striking. I propose a new hypothesis that could also explain the documented return patterns. In particular, the awards might be timed *ex post facto*, whereby the grant date is set to be a date in the past on which the stock price was particularly low. Such retroactive timing obviously requires little skill, though outsiders might perceive it to be fraudulent. In any event, it is unlikely that outsiders would ever learn of it, because the company does not publicly report the grant date until months thereafter.

To test the *ex post facto* timing hypothesis, I examine the predicted stock returns from Fama and French's (1993) three-factor model around the unscheduled awards. I find that these returns are abnormally low before the awards and abnormally high afterward. Unless executives have a superior ability to forecast future short-term market-wide movements that drive the predicted stock returns, the results indicate that at least some of the official grant dates must have been set retroactively. However, some caveats are in order. First, it is not impossible that insiders are able to predict future short-term market-wide movements, and that this explains some of my results. Indeed, Lakonishok and Lee (2001) provide evidence based on insider trading that insiders at least can forecast long-term market-wide movements, but I am not familiar with evidence that insiders can forecast short-term (such as daily or weekly) market-wide movements. Second, it is not clear that retroactive timing is in violation of the stock option plan. In fact, the

standard legal document behind the stock option plan does not specify whether a grant date can be set retroactively. Finally, my analysis is designed to uncover evidence of retroactive timing in the aggregate, and might be useless in identifying exactly which firms engage in such activities. Despite these caveats, my new evidence of self-dealing is likely to generate substantial controversy and perhaps prompt changes in both the stock option plan and how companies report their option awards.

The remainder of the paper proceeds as follows. The next section discusses potential opportunistic behavior around executive stock option awards and the predicted stock price patterns. Section 3 describes the sample. Section 4 presents empirical results. Finally, section 5 summarizes and concludes.

2. Opportunistic behavior around option awards and predicted price effects

Once a company has adopted a stock option plan (which requires a vote of approval by shareholders), the board of directors generally assigns the administration of the plan to the compensation committee. The compensation committee officially determines the size and timing of stock option grants, but there are several reasons to suggest that executives affect these decisions. First, Yermack (1997) finds that executives often propose the parameters of the stock option grant, whereas the compensation committee merely ratifies these proposals. Second, executives might influence the committees' decisions via their close friendships with individual committee members. Third, executives might influence the timing of the compensation committee meetings, which regularly coincide with the award date. (Yermack (1997) and Chauvin and Shenoy (2001) describe this process in greater detail.)

A key feature of executive option awards is that the exercise price typically equals the stock price on the day of the award. Because option values decrease with the exercise price, executives naturally prefer for the stock price to be as low as possible (and ideally lower than the

fundamental value) on the award date to increase the value of their compensation. This preference might give rise to opportunistic behavior.[2]

If the awards are unscheduled (i.e., the options are not awarded on the same date every year), executives might use their influence to time the awards on a date when the stock prices are particularly low. First, if executives perceive the current prices to be higher than the fundamental value and/or expect the prices to fall in the near future, they might try to push back the award date. For example, if they expect that the capital market will be disappointed in the current quarter's earnings, they might postpone any award until after the earnings announcement date. Such behavior should manifest itself in poor stock price performance leading up to the award dates. Second, if executives perceive recent price drops to be unwarranted, for example because of rumors about the company or its products that executives know to be false, they might promote immediate awards to take advantage of the artificially low prices. As the capital market realizes that the stock is undervalued, the price should increase. Third, if executives expect future price increases, irrespective of past price performance, they might also advocate immediate awards. An example of this would be that managers believe that the current period's earnings will pleasantly surprise the capital market when announced in the future.

[2] Zhang (2002) discusses an analogous type of opportunistic behavior around option awards, in which executives grant options to rank-and-file employees when the shares are overvalued. Such behavior, combined with the inability of rank-and-file employees to affect the timing of grants, might explain why stock prices do not fall before the option regrants in Lavelle's (2004) sample, which mostly excludes grants to top executives. Further, Huddart and Lang (2003) report that option exercises by both senior and junior employees precede negative abnormal returns, suggesting that they time option exercises to occur before poor stock performance, which is also consistent with value-maximizing behavior.

In this study I propose an alternative way of opportunistically timing the awards that does not require the ability to forecast future stock price movements. In particular, the grant date could simply be set to be a *past* date on which the market price was particularly low. A necessary condition for such retroactive timing is that the grant date precedes the decision date. Three compensation experts with whom I have been in contact say that they are aware of cases in which the grant date preceded the decision date. One expert indicated that the options involved were usually "promised" to an executive (perhaps through an employment agreement or in connection with an IPO) but not formally granted until later. Another indicated that while being on the compensation committee of a large-company board, the committee was called upon to ratify a decision made "internally" (purportedly by the Human Resource staff) to award options with a past grant date in one or two instances. There are several reasons to believe that retroactive timing occurs in practice. First, it would be a very effective and simple way of boosting the value of the awards. Second, stock option plans (which are standard legal documents) are vague as to how the grant date should be determined and do not specifically prohibit the grant date from preceding the decision date. Finally, it is difficult for outsiders to uncover such practices, because individual stock-option agreements are signed and dated by the employee-recipient but are not publicly disclosed.

Why doesn't the compensation committee instead simply boost the value of the award by either awarding more options or awarding options with an exercise price lower than the market price at the award date? Paul Dorf, Managing Director at Compensation Resources, Inc., offers several reasons. First, the number of options awarded is often determined by past awards and/or industry norms. Second, the stock option plan limits the number of options that can be awarded. Third, stockholders dislike the potential dilutive effect generated by a large number of outstanding options. Fourth, accounting rules require a charge to earnings for grants that are issued in-the-money. Fifth, stockholders are averse to the notion of issuing options "at a discount" to executives.

If the awards are scheduled, executives could instead try to control the release of information to the capital market in an effort to depress the price on the award date (see Aboody and Kasznik (2000)). However, any stock price effect is likely to be weaker around scheduled awards for two reasons. First, all of the techniques described above could be used to inflate the value of unscheduled awards, whereas the only way to inflate the value of scheduled awards is to control the information flow. Second, scheduled awards are partially predictable by the capital market, thus creating trading opportunities that, when exploited, will tend to remove any price effect. Because the focus of this study is the timing of awards rather than the timing of information releases of awards (which, incidentally, is the focus of Aboody and Kasznik (2000)), I focus on unscheduled awards. Nevertheless, I include scheduled awards in my analysis for comparison purposes.

3. Sample

Since 1992, the Securities and Exchange Commission (SEC) has required firms to disclose certain information in proxy statements about stock option grants to top executives during the fiscal year. While firms are not required to disclose the award dates, they can be inferred from the stated maturity dates in combination with information about the beginning and end of the fiscal years and the assumption that the maturities of the options are in whole years. Note that because the proxy statements are generally filed several months after the end of the fiscal year (the median is about three months afterward), it is not possible to exploit systematic stock price patterns around award dates, perhaps unless the awards are predictable.[3]

[3] For a random sample of 100 unscheduled option awards, I searched public news announcements from one month before through one month after the award date for evidence that the awards were made public, but I found no such evidence. Note, however, that effective August 29, 2002, the SEC changed the reporting regulations with respect to stock option grants. Specifically, firms

My sample of CEO stock option awards is taken from Standard & Poor's ExecuComp database. ExecuComp includes information about stock option grants from proxy statements for more than 2,000 large companies, which are or were members of the S&P 1500 (S&P 500, S&P 400 MidCap, and S&P 600 SmallCap). The initial sample contained 11,949 grants to CEOs during the fiscal years from 1992 through 2002. After having excluded observations that (a) lacked grant data, (b) were not in CRSP, (c) lacked price data in CRSP around the inferred grant date, or (d) were repricings or reloads, the sample contained 11,249 grants.[4] Next, I obtained closing prices in CRSP from two days before through two days after the inferred grant date to identify the date whose closing price matched the share price from ExecuComp. For the purposes of my study, I define this date to be the exact grant date. This leads me to a sample of 5,977 grants.[5] Following Aboody and Kasznik (2000), I define an award to be scheduled if it occurs

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must now report executive stock option grants within two business days. This is likely to affect the timing of stock option grants documented herein.

[4] Repricings occur when the exercise price of outstanding options is lowered (generally to the current market price). As with general option awards, it is in the CEO's interest that the price is temporarily low at the time of the repricings. A separate analysis reveals that the stock return pattern around the sample of excluded repricings is similar to that documented in Callaghan, Saly, and Subramaniam (2004). The returns during the months preceding the repricings are abnormally low, explaining why the options are repriced to restore their incentive effect. The returns during the days immediately after the repricings are abnormally positive, consistent with the notion that executives opportunistically time the repricing date or information releases around the repricing date.

[5] It is unclear why I am unable to identify the exact grant date for many of the observations. Perhaps the inferred date is more than a couple of days away from the exact grant date, perhaps the company did not simply use the closing price as the exercise price for the executive options,

within one week of the one-year anniversary of the prior year's award date and unscheduled if it does not occur within one week of this anniversary or if no options were awarded during the prior year. If no award information is available for the prior fiscal year, such as for those in 1992, I leave the award unclassified. This yields a final sample of 1,426 scheduled awards, 1,668 unscheduled awards, and 2,883 unclassified awards, though I exclude the scheduled awards for most of the analysis.[6]

Table 1 presents the sample of option grants to CEOs during 1992-2002 by fiscal year, calendar month, and fiscal quarter. The number of awards is considerably lower for the first couple of years, but this is at least partially due to more spotty coverage by ExecuComp during those years. Further, the number of unscheduled awards has gradually increased during the sample period, whereas the trend for scheduled awards is more stable. Option awards, especially scheduled awards, occur more frequently during the months of January, February, and December than during other months. Further, half of the scheduled option awards take place during the first fiscal quarter, whereas 43% and 48% of the unscheduled and unclassified awards, respectively, take place in this quarter.

Table 2 provides descriptive statistics for the fiscal year preceding the option awards. The sample firms are large, with an overall average book value of assets of $6.9 billion. Interestingly, firms that award options on a scheduled basis appear to be more mature than firms that award options on an unscheduled basis, as evidenced by their greater size and profitability and lower market-to-book ratio. Firms with unclassified awards resemble firms with unscheduled

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perhaps the award represents a reload, or perhaps ExecuComp made mistakes when adjusting the post-split prices reported in the proxy statements back to the actual market prices around the grants (indeed, I uncovered several such mistakes).

[6] For 65 of the 5,977 observations, I lack data to estimate the predicted returns based on the Fama and French (1993) three-factor model.

awards, consistent with the notion that a majority of the unclassified awards are actually unscheduled.

4. Empirical results

4.1 Abnormal returns around option awards

Figure 1 displays the average cumulative abnormal returns around unscheduled, scheduled, and unclassified awards.[7] I calculate abnormal returns around option awards as the difference between the stock returns of the awarding firm and the returns predicted by Fama and French's (1993) three-factor model, where the estimation period is the year ending 50 days before the award date. For the samples of unscheduled and unclassified awards, the stock prices (when adjusted for market effects) start to decline more than a month before the award – first gradually, and then more dramatically during the days immediately before the awards. However, there is a sharp reversal of the price trend on the award dates. Immediately after the awards, the prices tend to increase. The price increase is more pronounced during the first few days, but continues for at least a month. Though this pattern is also evident for scheduled awards and awards with uncertain grant dates, it is considerably less pronounced. The similarity of the patterns for unscheduled and unclassified awards suggests that unclassified awards generally are unscheduled.

4.2 Return patterns over time

An interesting question is whether the documented trends have changed in intensity over time. Executives might have become more effective in timing the awards to their advantage, especially as executive options have become increasingly more common. If so, it could explain

[7] Yermack (1997) and Aboody and Kasznik (2000) provide similar types of graphs for samples of all awards and scheduled awards, respectively.

why Yermack (1997) and Chauvin and Shenoy (2001) find weaker stock return patterns using earlier samples than this study. Alternatively, the exposure of opportunistic behavior in Yermack might have made executives more reluctant to engage in such behavior for fear of criticism by outsiders. To answer this question, I examine the return patterns for three groups based on the year of the awards. The first group consists of unscheduled awards during 1992-94 (to correspond with Yermack's sample period), while the last two groups split the remaining eight years into two four-year periods. If the awards are scheduled, the executives cannot time them to their advantage, and they are therefore excluded from this analysis. However, I include unclassified awards, because the prior evidence suggests that they are primarily unscheduled. Thus, the results for unclassified awards might validate the results for unscheduled awards.

Figure 2a shows the cumulative abnormal returns from day –30 through day +30 for the three groups of unscheduled awards, while figure 2b shows the same returns for the three groups of unclassified awards. The trends for unscheduled awards have become more distinct over time. The pattern for the first two years (which admittedly only consists of 113 unscheduled awards) is rather vague, whereas the pattern for the last four years is very strong. The pattern for the middle period falls roughly in between the patterns for the other two periods. The results for unclassified awards are very similar, thus corroborating the results for unscheduled awards. That is, the pattern for the first period is weakest and pattern for the last period is strongest.

Overall, the return trends around awards have become more pronounced during the sample period. This is consistent with the notion that executives have become more effective over time in timing the awards to their advantage. Further, it might explain, at least partially, why Yermack (1997) finds no evidence of stock price declines before awards using a sample from 1992 through 1994, and why Chauvin and Shenoy (2001) find scant evidence of good stock price performance after awards using a sample from 1981 through 1992.

4.3 Predicted returns around option awards

The sharp decline in prices immediately before unscheduled and unclassified awards followed by a sharp reversal immediately afterward suggests that executives collectively have a remarkable ability to time the awards to their advantage. One might even say that the executives' collective ability is uncanny, especially considering that the compensation committee formally makes the decisions regarding the option awards. This prompts the question as to whether some of the awards are timed *ex post facto*. That is, when the decision regarding the official award date is made, the official award date (and, hence, the exercise price of the options) might be determined to be an *earlier* date that had a particularly low price.[8] Because the terms associated with the awards are revealed much later, outsiders would not learn of this, thus preventing them from crying foul. In any event, the stock option plans that I have looked at do not explicitly prohibit such activities. The plans generally state that the exercise price should be the market price at the grant date, but do not state that the grant date cannot precede the decision date.

The hypothesis that the awards are timed *ex post facto* is novel. Unfortunately, it is not possible to ascertain from an examination of the abnormal returns whether the awards are timed proactively or retroactively. However, an examination of the predicted returns from the three-factor model might provide valuable insight. Suppose that executives have superior forecasting ability for future firm-specific price changes but not for future market-wide movements. The intuition for this is that while executives clearly possess unique information about their firms' future cash flows and imminent public announcements that is not generally available to other market participants, it is less likely that they possess unique information that pertains to the

[8] Similarly, it has recently been revealed that some mutual funds have allowed hedge funds to trade at closing prices long after the market has closed. This has allowed hedging funds to take advantage of information that has surfaced after the market closing, because this information has not yet been incorporated into the prices at which they have been allowed to trade.

overall market.[9] If so, executives might be able to time future award dates to coincide with low prices that are attributable to the arrival of firm-specific information to the market but not to overall market movements. This would manifest itself in negative abnormal returns before the awards and/or positive abnormal returns afterward. In contrast, the predicted returns from the market-model should be normal both before and after the awards. Any evidence of predicted returns that are abnormally low before awards and/or abnormally high after awards is consistent with the notion that some awards are timed *ex post facto*.[10]

Examining predicted returns from the three-factor model around awards presents unique challenges, because the they (i) tend to be positive, such that we need a benchmark other than zero, and (ii) contain both yearly and seasonal variations. To mitigate these challenges, I run a logistic regression of the occurrence of awards against prior and subsequent abnormal stock and predicted returns. This requires generation of a control sample with no awards. For each observation in the original sample (i.e., firm and award date), I generate five control observations with no awards by using the same firm combined with a random date drawn from the period from six months to one month before the award date or the period from one month to six months after the award date. Thus, the returns for the control observations effectively serve as benchmarks.

[9] Note, however, that Lakonishok and Lee (2001) report evidence that long-term market returns are higher after insiders buy stock. Thus, we cannot preclude the possibility that insiders are able to predict shorter-term market-wide movements also.

[10] One might argue that executives could time awards to occur shortly after they have observed market-wide declines, in which case the predicted returns would be negative before the awards. However, they would not benefit from this. Executives only gain from market-wide declines before awards if (a) they had the ability to predict the decline before it occurred and, therefore, postponed the award, or (b) they had a superior ability to deem the decline to be unwarranted, in which case we should also observe subsequent market-wide price increases.

By including dummy variables for the month of the observation, the regression analysis controls for seasonality in returns documented by, e.g., Keim (1983) and Reinganum (1983). Because previous results show that awards vary across the calendar months, the absence of such control variables could give rise to spurious relations between returns and the occurrence of awards. A further advantage of this analysis is that it effectively controls for firm-specific risk factors that affect stock returns, irrespective of whether these factors can be identified. As long as the risk factors are reasonably constant over time, they should be present for the original observation as well as for the associated control observations, thus largely washing out in the overall analysis.[11]

Table 3 presents the results from the regression analysis. Consistent with earlier evidence, unscheduled awards are more likely to occur after negative abnormal stock returns and before positive abnormal stock returns. The abnormal returns immediately surrounding the awards have the greatest effect on the occurrence of awards, but even abnormal returns at least a couple of weeks before or after the awards have a statistically significant effect.

The most interesting result in table 3 is that unscheduled awards are more likely to occur after dismal predicted returns and before high predicted returns. The effects of the predicted returns during the two days before and the two days after are particularly strong, with p-values less than 0.01. Unless executives could have anticipated the market-wide returns and, hence,

[11] Another potential problem is that the option grant dates might be correlated across firms, which would cause conventional standard errors to be underestimated. In my sample of unscheduled awards, I identified 576 cases where the grant date was the same as the grant date for another observation. As a benchmark, I generated 100 distributions of random grant dates with the same number of observations in each calendar year as the original sample and based on 252 trading days in a year. The average number of cases where a date was similar as another date was 502, and the maximum was 539. Thus, although 576 is statistically different from 502, it does not seem to be so high as to cause a major problem with the conventional standard error.

predicted returns from the three-factor model, the results suggest that executives time at least some of the awards *ex post facto*.

To further validate these results, I run the same regression for unclassified awards, a majority of which are likely to be unscheduled. The results are similar to those for unscheduled awards. In particular, the unclassified awards are also more likely to occur after low abnormal and predicted returns and before high abnormal and predicted returns, although the effect from the predicted returns immediately before is weaker. This lends further credence to the results for unscheduled awards and the notion that awards are timed retroactively.[12]

Finally, I run the regression for scheduled awards for comparison purposes. As expected, the results are generally much weaker than for the other award categories. However, the predicted returns during the two days afterward positively affect the probability even for scheduled awards. I conjecture that this result arises because even with grants classified as scheduled, there might some leeway with the precise date. For example, if executives have a two-week window (i.e., from one week before through one week after the anniversary) in which to make awards, one might argue that they have ample flexibility to opportunistically time those

[12] I also ran the regression for each of the years from 1994 through 2002 for unscheduled awards (I excluded 1993 due to the small number of observations), and from 1992 through 2002 for unclassified awards. The coefficient on the predicted return during the two days immediately after the option grant is of most interest given its statistical significance in table 3 and its implication about grant behavior. This coefficient is statistically significant at the one percent level for only one year (2001, which has the most observations) for unscheduled awards and for no year for unclassified awards. More importantly, it is positive for all but one year (1994, which has the fewest observations) for unscheduled awards and for all years for unclassified awards. I interpret these results as evidence that the results don't appear to be driven by just a few years, and that a large sample is needed to uncover the underlying relationships.

awards. An alternative, but related conjecture, is that many unscheduled awards just happened to occur within a week of the one-year anniversary of prior grants, in which case they are incorrectly classified here as scheduled grants. To investigate this further, I tighten the definition of scheduled to only include those that occurred within a day of the one-year anniversary of the prior grant date. If either of my conjectures is correct, any effect stemming from predicted returns should be weaker yet for this sample. Table 4 shows the results for the scheduled awards with tight schedules as well as for other scheduled awards. As expected, the effect from predicted returns is weaker for scheduled awards with tight schedules than for the others. In fact, none of the coefficients on predicted returns differ statistically from zero in the sample of scheduled awards with tight schedules. These results further corroborate my earlier results and interpretations.

Overall, the logistic regressions show that awards are timed to occur after price decreases and before price increases. Unlike prior studies, I show that overall market factors cause a portion of the price patterns. Thus, unless executives have an informational advantage in forecasting future market movements, the results suggest that the beneficial timing of the awards occurs, at least partially, because executives determine the official grant date to be a date in the past. In fact, my study does not preclude the possibility that the entire stock price pattern is due to retroactive timing, rather than proactive timing as suggested in past studies.

5. Summary and conclusion

Using a large sample of stock option awards to CEOs from 1992 to 2002, I find that the abnormal stock returns are negative before the award dates and positive afterward. While these trends are evident around both scheduled and unscheduled awards, they are much more pronounced around unscheduled awards. The return patterns around unscheduled awards appear to have intensified over time, suggesting that executives have gradually learned how to better time awards to their advantage or become more aggressive in their timing efforts. This could

explain the absence of both negative abnormal returns leading up to the awards in Yermack's (1997) sample from 1992 through 1994 and positive returns following awards in Chauvin and Shenoy (2001) sample from 1981 through 1992.

Prior studies have attributed the stock returns around unscheduled awards to executives timing awards relative to expected future price patterns. If so, the distinct stock returns documented here suggest that executives' ability to forecast future price patterns is uncanny, especially for later years. This prompts me to propose a novel alternative hypothesis that the awards are timed *ex post facto*. That is, the grant date might be set to be an earlier date with a particularly low price. I find evidence consistent with this *ex post facto* timing hypothesis. In particular, I report that predicted returns from the three-factor model are abnormally low leading up to the awards and abnormally high afterward. Unless executives have an informational advantage that allows them to develop superior forecasts regarding the future market movements that drive these predicted returns, the results suggest that the official grant date must have been set retroactively. The results are provocative and might cause some investors to cry foul. However, even though retroactive timing of executive stock option awards seems fraudulent, it is not clear that it is in violation of the stipulations in the stock option plans. Further, although I show aggregate evidence that retroactive timing occurs, it is hard, if not impossible, to prove that such timing takes place in individual cases.

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Table 1
Sample distribution across time

Distribution of the sample of option grants awarded to CEOs during the fiscal years 1992-2002 by fiscal year, calendar month, and fiscal quarter. An award is classified as scheduled if it occurs within one week of the one-year anniversary of the prior year's award date and unscheduled if it does not occur within one week of this anniversary or if no options were awarded during the prior year. If insufficient information is available to classify an award, it is left unclassified.

	Unscheduled awards (n=1,668)		Scheduled awards (n=1,426)		Unclassified awards (n=2,883)	
	Fraction of sample	Fraction of universe	Fraction of sample	Fraction of universe	Fraction of sample	Fraction of universe
Panel A: Option awards by fiscal year						
1992	0%		0%	0%	3%	22%
1993	1%	1%	2%	3%	11%	27%
1994	6%	6%	8%	7%	11%	21%
1995	9%	9%	11%	10%	8%	15%
1996	10%	10%	11%	9%	8%	15%
1997	9%	9%	9%	8%	10%	17%
1998	10%	10%	9%	8%	10%	16%
1999	11%	10%	11%	9%	12%	18%
2000	14%	13%	12%	10%	10%	16%
2001	15%	15%	12%	11%	10%	17%
2002	16%	17%	14%	13%	7%	13%
Panel B: Option awards by calendar month						
January	14%		16%		14%	
February	13%		18%		15%	
March	9%		6%		8%	
April	10%		6%		8%	
May	8%		7%		9%	
June	4%		4%		6%	
July	7%		5%		7%	
August	6%		6%		5%	
September	5%		5%		5%	
October	6%		5%		7%	
November	7%		4%		6%	
December	10%		17%		11%	
Panel C: Option awards by fiscal quarter						
Quarter 1	43%		50%		48%	
Quarter 2	23%		16%		22%	
Quarter 3	15%		10%		13%	
Quarter 4	19%		24%		18%	

Table 2
Descriptive statistics

Descriptive firm statistics for the fiscal year prior to the option awards. An award is classified as scheduled if it occurs within one week of the one-year anniversary of the prior year's award date and unscheduled if it does not occur within one week of this anniversary or if no options were awarded during the prior year. If insufficient information is available to classify an award, it is left unclassified.

	Unscheduled awards		Scheduled awards		Unclassified awards	
	Mean	Median	Mean	Median	Mean	Median
Assets ($MM)	5,757	825	9,732	1,281	6,163	749
Market-to-book ratio	2.208	1.568	1.941	1.442	2.265	1.552
Operating income / Assets	0.008	0.138	0.145	0.162	-0.174	0.145
Total debt / Assets	0.216	0.200	0.235	0.231	0.220	0.200
Cash / Assets	0.159	0.065	0.095	0.034	0.137	0.058

Table 3
Logistic regressions of awards

Logistic regressions of the choice to award options. For each observation in the original sample (i.e., firm and award date), five control observations are generated by using the same firm combined with a random date drawn from the period from six months to one month before the award date or the period from one month to six months after the award date. The dependent variable equals one for the original observations and zero for the control observations. Independent variables include abnormal stock returns and predicted returns for various periods before and after the grant dates, as well as dummy variables for the calendar month of the observation. Abnormal stock returns are estimated using the three-factor model described in Fama and French (1993), where the estimation period is the year ending 50 days before the award date. Predicted stock returns are the actual returns less the abnormal returns. An award is classified as scheduled if it occurs within one week of the one-year anniversary of the prior year's award date and unscheduled if it does not occur within one week of this anniversary or if no options were awarded during the prior year. If insufficient information is available to classify an award, it is left unclassified.

	Unscheduled		Scheduled		Unclassified	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
Intercept	-1.424	0.000	-0.792	0.000	-1.457	0.000
Abnormal return during days –30 to –10	-0.689	0.001	-0.331	0.221	-0.697	0.000
Abnormal return during days –10 to –5	-1.144	0.002	-0.496	0.344	-0.745	0.016
Abnormal return during days –5 to –2	-2.061	0.000	-0.869	0.210	-1.677	0.000
Abnormal return during days –2 to 0	-2.417	0.000	-0.904	0.274	-3.271	0.000
Abnormal return during days 0 to +2	5.322	0.000	3.339	0.000	5.606	0.000
Abnormal return during days +2 to +5	1.871	0.000	2.330	0.001	2.282	0.000
Abnormal return during days +5 to +10	1.513	0.000	1.676	0.001	1.647	0.000
Abnormal return during days +10 to +30	0.827	0.000	0.228	0.317	0.765	0.000
Predicted return during days –30 to –10	-1.087	0.001	-0.667	0.139	-0.973	0.001
Predicted return during days –10 to –5	-1.011	0.146	0.255	0.799	-1.179	0.050
Predicted return during days –5 to –2	-0.865	0.371	-1.928	0.162	-1.779	0.028
Predicted return during days –2 to 0	-3.625	0.002	-2.944	0.079	-1.087	0.268
Predicted return during days 0 to +2	3.545	0.003	4.538	0.005	4.423	0.000
Predicted return during days +2 to +5	1.361	0.152	2.855	0.034	0.498	0.534
Predicted return during days +5 to +10	1.473	0.040	-0.782	0.412	0.928	0.129
Predicted return during days +10 to +30	0.826	0.008	0.463	0.267	0.795	0.003
January dummy	0.414	0.001	0.032	0.775	0.426	0.000
February dummy	0.489	0.000	0.185	0.095	0.662	0.000
March dummy	-0.175	0.165	-1.252	0.000	-0.199	0.046
April dummy	-0.078	0.532	-1.204	0.000	-0.254	0.010
May dummy	-0.250	0.052	-1.013	0.000	-0.134	0.164
June dummy	-0.934	0.000	-1.546	0.000	-0.621	0.000
July dummy	-0.520	0.000	-1.375	0.000	-0.425	0.000
August dummy	-0.737	0.000	-1.190	0.000	-0.819	0.000
September dummy	-0.891	0.000	-1.501	0.000	-0.871	0.000
October dummy	-0.751	0.000	-1.394	0.000	-0.604	0.000
November dummy	-0.372	0.006	-1.543	0.000	-0.580	0.000
Number of observations	10,003		8,552		16,897	

Table 4
Logistic regressions of scheduled awards with fixed vs. relaxed schedule

Logistic regressions of the choice to award options. For each observation in the original sample (i.e., firm and award date), five control observations are generated by using the same firm combined with a random date drawn from the period from six months to one month before the award date or the period from one month to six months after the award date. The dependent variable equals one for the original observations and zero for the control observations. Independent variables include abnormal stock returns and predicted returns for various periods before and after the grant dates, as well as dummy variables for the calendar month of the observation. Abnormal stock returns are estimated using the three-factor model described in Fama and French (1993), where the estimation period is the year ending 50 days before the award date. Predicted stock returns are the actual returns less the abnormal returns. An award is classified as scheduled if it occurs within one week of the one-year anniversary of the prior year's award date. A scheduled award is further classified as *tight* if it occurred within one day of the one-year anniversary of the prior year's award date and *relaxed* otherwise. p-values are given in parentheses.

	Tight schedule		Relaxed schedule	
	Coeffic.	p-value	Coeffic.	p-value
Intercept	-0.758	0.000	-0.854	0.000
Abnormal return during days –30 to –10	-0.545	0.199	-0.196	0.585
Abnormal return during days –10 to –5	-0.344	0.666	-0.615	0.379
Abnormal return during days –5 to –2	-1.591	0.132	-0.051	0.957
Abnormal return during days –2 to 0	0.158	0.900	-1.751	0.119
Abnormal return during days 0 to +2	-0.552	0.646	6.886	0.000
Abnormal return during days +2 to +5	1.521	0.132	2.834	0.002
Abnormal return during days +5 to +10	1.177	0.141	1.891	0.006
Abnormal return during days +10 to +30	-0.160	0.649	0.846	0.019
Predicted return during days –30 to –10	-0.873	0.216	-0.509	0.397
Predicted return during days –10 to –5	-0.152	0.920	0.549	0.691
Predicted return during days –5 to –2	-1.124	0.586	-2.905	0.129
Predicted return during days –2 to 0	0.106	0.967	-5.193	0.025
Predicted return during days 0 to +2	4.468	0.072	5.727	0.010
Predicted return during days +2 to +5	0.833	0.688	4.994	0.006
Predicted return during days +5 to +10	-1.757	0.240	-0.240	0.850
Predicted return during days +10 to +30	1.039	0.110	0.043	0.941
January dummy	0.171	0.287	-0.085	0.601
February dummy	0.035	0.827	0.338	0.029
March dummy	-1.372	0.000	-1.122	0.000
April dummy	-1.154	0.000	-1.248	0.000
May dummy	-1.145	0.000	-0.884	0.000
June dummy	-1.468	0.000	-1.625	0.000
July dummy	-1.528	0.000	-1.259	0.000
August dummy	-1.154	0.000	-1.223	0.000
September dummy	-1.548	0.000	-1.439	0.000
October dummy	-1.493	0.000	-1.306	0.000
November dummy	-1.625	0.000	-1.450	0.000
Number of observations	4,095		4,457	

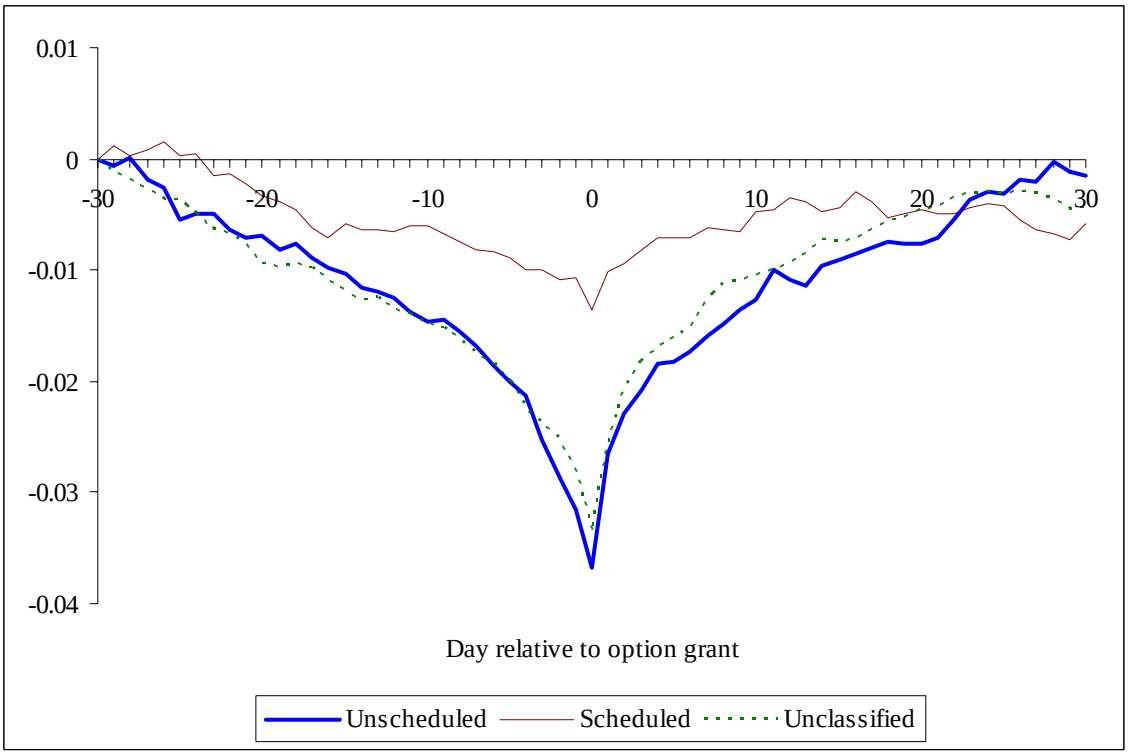
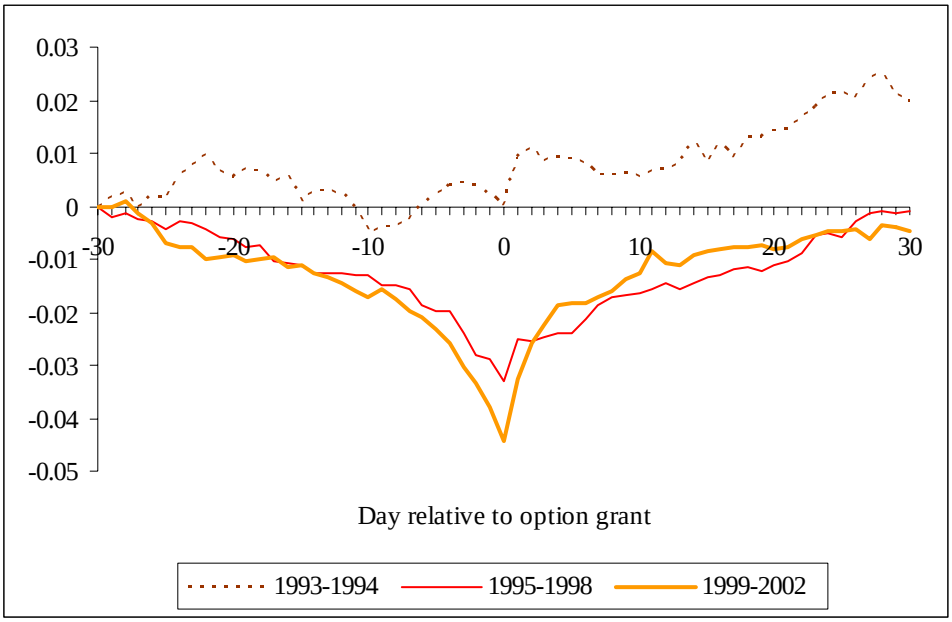
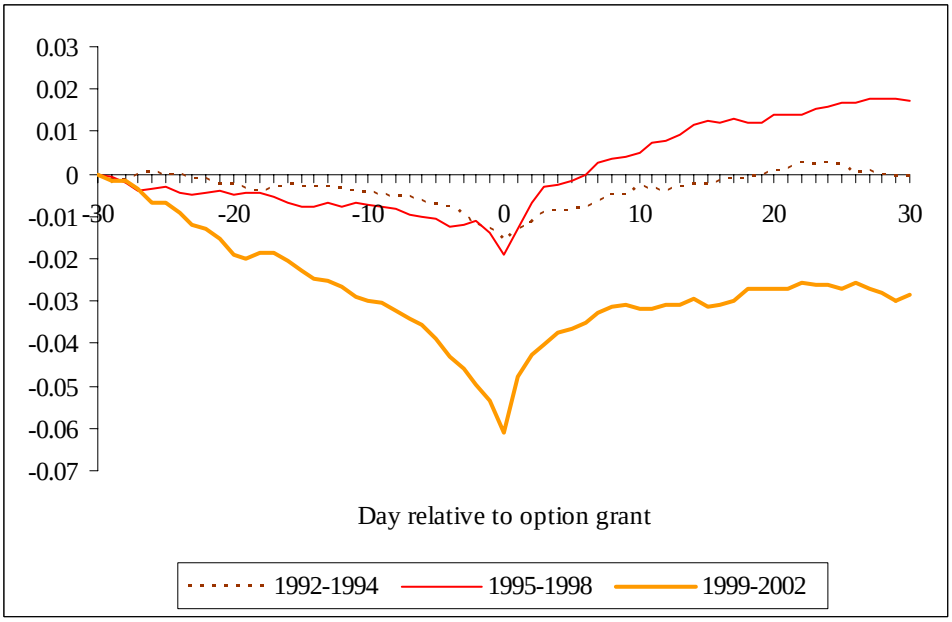


Figure 1
Cumulative abnormal stock returns around stock option grants

The figure displays the cumulative abnormal stock returns from 30 days before through 30 days after stock option grants to CEOs. Abnormal stock returns are estimated using the three-factor model described in Fama and French (1993), where the estimation period is the year ending 50 days before the award date. An award is classified as scheduled if it occurred within one week of the one-year anniversary of the prior year's award date and unscheduled if it did not occur within one week of this anniversary or if no options were awarded during the prior year. If insufficient information is available to classify an award, it is left unclassified.



a. Unscheduled awards



b. Unclassified awards

Figure 2
Cumulative abnormal stock returns around stock option grants by year

The figure displays the cumulative abnormal stock returns from 30 days before through 30 days after stock option grants to CEOs. Abnormal stock returns are estimated using the three-factor model described in Fama and French (1993), where the estimation period is the year ending 50 days before the award date. An award is classified as scheduled if it occurred within one week of the one-year anniversary of the prior year's award date and unscheduled if it did not occur within one week of this anniversary or if no options were awarded during the prior year. If insufficient information is available to classify an award, it is left unclassified.