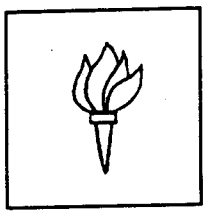

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Good Timing: CEO Stock Option Awards and Company News Announcements.

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Abstract

This paper proposes and implements a new method for investigating whether CEOs influence the terms of their own compensation. I analyze the dates of 619 stock option awards to CEOs of *Fortune 500* companies between 1992 and 1994, finding that the timing of awards coincides with favorable movements in company stock prices. Patterns of companies' quarterly earnings announcements are consistent with an interpretation that CEOs receive stock option awards shortly before favorable corporate news. I evaluate and reject several alternative explanations of the results, including insider trading and the manipulation of news announcement dates.

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Abstract

This paper proposes and implements a new method for investigating whether CEOs influence the terms of their own compensation. I analyze the dates of 619 stock option awards to CEOs of *Fortune 500* companies between 1992 and 1994, finding that the timing of awards coincides with favorable movements in company stock prices. Patterns of companies' quarterly earnings announcements are consistent with an interpretation that CEOs receive stock option awards shortly before favorable corporate news. I evaluate and reject several alternative explanations of the results, including insider trading and the manipulation of news announcement dates.

Many executive compensation studies find links between the introduction of long-term incentive plans and changes in company performance. Leading examples include Larcker (1983) (accounting-based performance plans) and DeFusco, Johnson and Zorn (1990) (stock options). However, most evidence in such studies is consistent with two interpretations. Incentive compensation might motivate managers to make superior decisions. Alternatively, managers might have influence over the terms of their own compensation, and use this power to obtain more performance-based pay in advance of anticipated stock price increases. Until recently, the limited public data about executive compensation has permitted little research that could distinguish between these alternative hypotheses.

This paper introduces a new method for investigating whether managers influence the

terms of their own compensation, based upon the dates of stock option awards received by CEOs of major U.S. companies. U.S. public corporations began reporting this information in late 1992 pursuant to reformed Securities and Exchange Commission (SEC) regulations for executive compensation disclosure (SEC (1992)). Since nearly all executive stock options are granted with fixed exercise prices equal to the stock price on the date of award, opportunistic timing of option awards around company news announcements could substantially increase CEO wealth for reasons unrelated to performance. If managers do influence the structure of their compensation contracts, I expect CEOs to receive stock option awards shortly in advance of favorable news that pushes company stock prices higher.

Results presented herein are consistent with these predictions, and data displayed in Figure 1 illustrates the main findings. The figure shows mean cumulative abnormal returns (CARs) for company stocks around the dates of 619 stock option awards to *Fortune 500* CEOs between 1992 and 1994 (calculation details appear in Section II below). Companies making stock option awards to their CEOs out-perform the market on a risk-adjusted basis by approximately 2.4% during the period beginning the day after the award and lasting approximately ten weeks (50 trading days). The abnormal returns level off and remain permanently embedded in company stock prices thereafter. These stock price increases occur even though news of CEO stock option awards remains secret until approximately three months after the end of company fiscal years -- three to fifteen months after the date of awards.[1] The

[1] Option award dates usually appear for the first time in corporate proxy statements, but there are some narrow exceptions. Occasionally, news reports describe the compensation packages awarded to new CEOs hired from outside the company (see, e.g., New York Times (1995)). Also, companies submitting new stock option plans for shareholder approval sometimes describe proposed awards under those plans in documents filed with the SEC, and CEOs' employment contracts sometimes include guarantees of stock option awards in the future. However, all three of these

pattern of abnormal returns is consistent with CEOs receiving stock option awards shortly in advance of unrelated favorable news. Detailed analysis in Section III of companies' quarterly earnings announcements provides further evidence supporting this interpretation.

Many companies explain their use of stock options as devices for aligning the long-term interests of stockholders and managers, and companies sometimes receive praise from institutional investors for strengthening managers' incentives after shifting their mix of pay toward options. The results herein belie these interpretations, for they suggest that CEOs who receive stock options benefit from an upward stock price "bounce" shortly after the award date, making the options resemble low-risk devices for increasing managerial wealth. The findings are especially surprising because managerial manipulation of option award dates could be avoided by trivial changes in firms' stock option plans. For example, plan rules could require options to be awarded on fixed dates each year (a constraint which appears frequently in option plans for boards of directors), or not within a certain interval around quarterly earnings or dividend announcements.

Section IV considers but rejects a range of alternative explanations for the patterns observed in the data. Insider trading by CEOs or others could account for the rise in stock prices in the aftermath of CEO option awards, but an analysis of daily trading volume around the dates of CEO stock option awards does not support this possibility. Corporations and stockholders may acquiesce in CEOs' manipulation of the dates of stock option awards as an indirect method of permitting insider trading by top managers, in line with the controversial recommendations of

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cases occur only rarely, and the latter two require CEO option awards to be disclosed long in advance, which would not produce a pattern of returns consistent with Figure 1.

some theorists. However, such a policy would seem to contravene federal laws and possibly expose managers and directors to legal liability. Firms might award stock options shortly before favorable news announcements as an indirect method of granting options with in-the-money exercise prices, but the availability of less noisy contracting alternatives and the paucity of options granted out-of-the-money appear to undermine the likelihood of this explanation. Similarly, a company could award stock options in advance of favorable news as a strategy for achieving net income tax savings between the firm and the CEO, but related empirical research has found that tax considerations do not explain cross-sectional patterns of CEO stock option awards. CEOs may manipulate news announcements to maximize the value of their options instead of influencing their boards of directors to choose favorable option award dates. However, such a strategy, which would involve delaying announcements of favorable news and rushing forward adverse news, appears to be contradicted by studies of how managers behave when releasing good and bad corporate announcements.

The remainder of this paper is organized as follows. Section I describes the procedures followed by companies in awarding stock options to CEOs and reviews related literature on opportunistic managerial behavior in response to compensation parameters. Section II presents the basic results showing an association between CEO option award dates and favorable movements in company stock prices. Section III contains an analysis of corporate earnings and dividend announcements. Data about these announcements is consistent with the hypothesis that managers receive stock options shortly before the release of favorable news. Section IV explores possible alternative explanations for the results, with close attention to the empirical and theoretical literature on insider trading. Section V contains conclusions.

I. The Stock Option Award Process

Stock options provide the lion's share of performance-based incentive compensation received by CEOs (Jensen and Murphy (1990)), although recent studies have found low, or nonexistent, connections between option-based incentives and the agency and financial contracting costs faced by individual corporations (Matsunaga (1995); Mehran (1995); Yermack (1995)). For most CEOs, stock options are awarded once each year by a compensation committee of the board of directors, acting under the authority of periodic shareholder votes[2] (occasionally CEOs receive multiple awards). Aspects of the U.S. tax code cause most stock options to have similar features; for example, nearly all have terms of ten years and exercise prices equal to the stock price on the date of the award (see Scholes and Wolfson (1992) and Matsunaga, Shevlin, and Shores (1992) for discussions of tax issues). However, compensation committees exercise discretion over the size and frequency of CEO stock option awards, and these parameters have varied substantially across companies and over time.

Over the last decade companies have awarded increasing amounts of stock options to top executives. Approximately two-thirds of all CEOs now receive stock option awards in a given year, and the estimated award-date value of these options now represents about one-third of total CEO compensation (Yermack (1995)). The increasing size and frequency of CEO option awards has attracted attention from shareholder activists and government authorities such as the SEC, the Financial Accounting Standards Board (FASB), and the U.S. Congress, all of which recently

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[2] These votes usually occur every five years at annual shareholder meetings. Little suspense surrounds the outcome: in a sample of 367 incentive compensation plan votes (including stock options) analyzed by Brickley, Bhagat, and Lease (1985), all 367 were approved, and the authors report that the New York Stock Exchange's proxy specialist had no knowledge of an executive compensation plan ever being rejected by stockholders.

promulgated regulations that encourage shareholder scrutiny of executive pay.

The SEC's expansion of executive compensation disclosure requirements in 1992 (SEC (1992, 1993a, and 1993b)) greatly increased public information about compensation committees and top managers' pay. Among other data, companies' annual proxy statements now report exact dates of managers' stock option awards, the key variable in this paper. The documents also must include compensation committee reports, which describe the criteria for top managers' pay and disclose conflicts-of-interest held by committee members. The widely-understood intent of these measures has been "to put stockholders in charge of monitoring executive compensation," according to Karmel (1994). With similar motives, Congress in 1993 enacted §162(m) of the Internal Revenue Code, limiting the tax deductibility of executive compensation unless the pay results from a performance-based plan administered by a committee of independent directors.

Board compensation committee reports in annual proxy statements, as well as re-alignments of compensation committees to comply with the new tax code provision, revealed numerous instances where CEOs appeared to have direct or indirect influence upon the contracting process for their own pay. Many companies openly acknowledged in proxy statements that managers helped structure their own compensation, including the timing of stock option awards, with the role of board committees apparently limited to ratifying management proposals. For example, Federal Paper Board stated in 1993 that its stock option committee ". . . reviews management's proposals on the grants of options to officers and key employees . . ." Similarly, Intel Corp.'s 1994 proxy statement reported that during the prior year, ". . . stock options for the executive officers were granted upon recommendation of management . . ." Western Digital Corp., describing the role of its compensation committee, wrote in its 1994

proxy statement, ". . . taking into account the recommendations of management, the Committee determines the employees to whom options will be granted, [and] the timing and manner of the grants of options."

In addition to these acknowledgements of direct management participation in setting the terms of compensation, many proxy statements suggested the presence of conflicts of interest in the contracting process. As discussed below, a handful of *Fortune 500* companies reported having CEOs who served as members of their own compensation committees. Numerous companies had pairs of CEOs who sat on each other's compensation committees -- in effect, two people responsible for establishing each other's pay (Cowan (1992)). Scores of corporations reported that outside directors who served on compensation committees benefitted from personal consulting contracts or from the diversion of company business to their principal employers. In addition to these channels for CEOs to bestow favors upon those directors who set their compensation, the process for recruiting and re-appointing members of the board itself had long been understood to fall under the CEO's control in most companies.

The central hypothesis of this paper is that CEOs exert influence over their compensation committees in these and other ways, and that they exploit this power to increase the value and lower the riskiness of their compensation. The suggestion that managers manipulate the compensation contracting process to appropriate value from stockholders, despite the availability of low-cost preventive measures, is similar to the conclusion of Blanchard, Lopez-de-Silanes and Shleifer (1994) in their study of the dispositions of cash windfalls realized by eleven public companies. After finding that large fractions of the cash windfalls are diverted to higher executive compensation, the authors argue that failings of corporate governance systems often

lead to compensation systems in which "managers grab whatever profits they can get away with."

This research complements a line of previous papers which have found that managers behave opportunistically, and not necessarily in shareholders' interests, in response to the structure of their compensation. Healy (1985) shows that companies' accounting policies are influenced by managerial compensation, as firms are more likely to accrue discretionary expenses during years in which their operating income exceeds the upper limits or falls below the lower limits of managers' accounting-based bonus plans. Lambert, Lanen and Larcker (1989) find that firms pay lower dividends than expected after the adoption of executive stock option plans, and Jolls (1995) finds that managers holding large numbers of options tend to substitute stock repurchases for dividend payments as a means of distributing free cash flow. Dechow and Sloan (1991) find that managers reduce research and development spending as they near expected retirement, apparently to maximize bonus payments tied to accounting earnings.

In all of these studies, the authors find evidence that managers manipulate some parameter of the firm's operating strategy in order to increase compensation. Arguably, these actions might be in shareholders' interests or carry only small costs, since shareholders choose not to bear the cost of writing and enforcing contract terms to prevent the managers' behavior (Jensen and Meckling (1976)). In contrast, the findings of this study involve no manipulation of corporate strategy, only an opportunisitic choice of stock option award dates that leads to a transfer of wealth from stockholders to managers. Moreover, the practice could be eliminated at almost no cost, by using off-the-shelf contracting terms that require stock options to be awarded on fixed dates each year, or not within a certain interval around regularly scheduled corporate news releases (such as earnings or dividend announcements).

II. Stock Option Awards and Stock Price Movements

To study whether top managers' stock option awards occur at favorable times, I use data from the first two annual proxy statements filed by *Fortune 500* companies in compliance with the SEC's 1992 reformed executive compensation disclosure rules. The April 1993 *Fortune 500* list serves as the basis for the sample. For each company, I collect information about stock options awarded to the CEO; when more than one person holds the CEO position during a fiscal year, I collect data for the person in office the longest. Excluding a handful of observations with data problems,[3] the sample includes 619 CEO stock option awards made in the 1992-93 and 1993-94 fiscal years, with some companies accounting for multiple awards. Although corporations are not specifically required to disclose dates of stock option awards, many report the information voluntarily, and it can always be inferred from required disclosures of awards' expiration dates and durations. In 46 cases companies list a Saturday or Sunday as the stock option award date; I count these awards as having been made on the previous Friday, since the closing Friday stock price must have been the basis for setting the option's exercise price.

A. Stock Price Movements

A straightforward test of whether CEOs receive stock options at favorable times comes from studying movements in company stock prices around option award dates. The hypothesis of this study implies that CEOs receive stock options shortly before favorable news pushes stock

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[3] A small number of companies reported only the month and not the exact date of stock options' expirations, technically violating the SEC's rules. A few other firms made option awards during periods when their stock was not traded, such as initial public offerings, reorganizations, and switches between stock exchanges. I did not gather data for "reload" option awards that some companies automatically make to their CEO when existing options are exercised. I also omitted a small number of events involving the re-pricing or exchange of older options.

prices higher. The corresponding null hypothesis is that stock prices exhibit no significant movement after option awards are made. The awards themselves should have no immediate impact on stock prices since the public does not learn of them until proxy statements are filed several months after a fiscal year ends.

For each stock option award, I use daily stock return data from the CRSP database to estimate abnormal stock returns around the award date. Following the widely-used event study methodology of Dodd and Warner (1983), I define each day's abnormal return *(AR)* as:

$$AR_{it} = R_{it} - \hat{R}_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i Market_t \qquad (1)$$

Market is the yield on CRSP's dividend-inclusive, value-weighted index for the NASDAQ or NYSE/AMEX file. The subscripts i and t indicate companies and days, respectively. The α_i and β_i market model parameters are estimated from regressions of R_{it} against $Market_t$ using one year of daily trading data prior to the event period surrounding each stock option award.[4]

I use daily abnormal returns to form cumulative abnormal returns (CARs) over an event period beginning five trading days prior to each stock option award and lasting until 150 trading days thereafter. The five-day lead time is used to illustrate that the cumulation of positive CARs begins exactly on the option award date. For the sample of 619 stock option awards, I average together the CARs for each day, testing their significance with Z-statistics calculated according to Dodd and Warner (1983). Table I presents average CARs over the course of the event period;

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[4] Some investigators estimate market model parameters with data obtained both before and after the event period. That approach would be problematic with this paper because many awards occurred in 1994, and the CRSP database does not yet include the necessary 1995 observations. Results are insensitive to using CRSP's equal-weighted market index in place of the value-weighted index.

the same data are displayed in Figure 1 above. Note that the sample declines from 619 to 606 over the event period, mostly due to the unavailability of 1995 trading data in the CRSP database; this data is necessary to calculate long-term CARs for awards made after May 1994.

As predicted, company stock prices begin rising immediately after CEOs receive stock option awards, and companies out-perform the market on a risk-adjusted basis by about 2.4% over the ten weeks or 50 trading days. Average CARs grow in a steady pattern over this period, suggesting that good news events for sample firms follow an approximately uniform distribution over ten weeks after a CEO receives stock options. According to two-tailed hypothesis tests, the average CAR has magnitude of approximately 0.5% and is significantly greater than zero at the 5% level after five trading days; the magnitude is close to 1.0% and the significance level drops below 1% on the tenth trading day after the typical CEO stock option award.

After approximately 50 trading days or ten weeks, the average CAR levels off near 2.4%. As shown by the data in Table I and the illustration in Figure 1, this abnormal stock return appears to remain permanently embedded in stock prices, as the CARs after 100 and 150 trading days remain at approximately the same level.

While the data are consistent with the arrival of "good news" shortly after CEOs receive stock options, I do not find a corresponding pattern of "bad news" in advance of option awards. I examine CARs in advance of option award dates for various event periods between one month and one year. I find average CARs in the range of approximately -0.5% to +0.5%, depending on the event period studied, and most of the estimates are not statistically significant. This finding is not surprising; CEOs should be far more interested in receiving option awards before an expected increase in stock prices than after an expected decrease, since the former case implies a

rapid increase in option values while in an efficient market the latter case has no implication for options' future values.

The rise in company stock prices after CEO stock option awards almost certainly does not represent a reaction by investors to news of the awards themselves, since this information is rarely disclosed until companies file proxy statements several months after each fiscal year. It is possible that buying occurs by insiders, such as members of boards of directors, who have immediate knowledge that CEOs have received stock options, but this conjecture is not supported by an analysis of trading volume in Section IV.A below. Moreover, the pattern of abnormal returns does not resemble the results of most event studies -- especially those of insider trading such as Meulbroek (1992) -- which typically show stock prices experiencing a "run-up" in advance of, and not after, important news announcements. If insiders did attempt to exploit information about CEO option awards, one would expect many to know of the awards in advance and to buy stock before the award dates.

B. Increases in Option Book Values

An alternative method of illustrating how rapidly company stock prices rise just after stock option awards comes from examining the book value over time of CEO option awards. An option's book value is defined as the greater of zero or the stock price minus an option's exercise price. As shown by Table II, 58.6% of CEO option awards have positive book value after one month, and the fraction is barely higher at 60.6% after one year. The gain in book value on the portfolio of CEO stock options in this study was 4.8% after one month, or an average of just over $100,000 per award. After one year, the figures were 16.8% and just over $360,000,

respectively. These data imply that the book value of CEO stock options rises at a rate four and a half times faster over the first month of the year than over the next 11 months. The dollar value of these gains is significant compared to the average cash salary of $633,000 received by all *Fortune 500* CEOs in the 1993-94 fiscal year.

C. Predictable and Unpredictable Award Schedules

Some companies grant stock options in predictable patterns, with CEOs receiving awards at approximately the same time each year. However, I find that this practice does not help explain the pattern of stock returns observed after option awards. I segment my sample of 619 awards into two groups. The first group includes all pairs of option awards made by a company in consecutive fiscal years, with the award pair separated by at least 11 months but no more than 13 months; 352 of the 619 awards fall into this category. The second group includes all other awards. I measure CARs for each sub-sample over the 20 trading days following the award date. Each sub-sample exhibits positive and significant CARs. The latter sub-sample, representing awards that appear to follow a less fixed schedule, has higher average CARs -- 1.9% vs. 1.0% -- suggesting that CEOs may have more success in timing the awards if the company has no regular schedule for granting options. However, the difference between these sub-sample CARs is not statistically significant (T = 1.21), so I cannot conclude that CEOs benefit from any less of a positive stock price "bounce" if their option awards follow an apparently regular schedule. Similarly, I find no systematic connection between the magnitude of CARs and the month within a fiscal year that a stock option award is made.

D. Awards to CEOs Who Serve on Their Own Compensation Committees

Indirect evidence that CEOs influence compensation committees to award stock options at favorable times emerges from analyzing cases in which CEOs personally serve on their own compensation committees (or similar groups, such as stock option committees, that have authority to approve option awards). I identify 13 option awards within my sample made under these conditions. Since these CEOs have a direct voice in structuring their compensation, one would expect them to receive stock options at especially opportune times. Table III lists the 13 stock option awards made to CEOs serving on their own compensation committees, and the table also shows that in many cases, favorable news announcements occur soon after the award. While not every option award is followed by important news, in nine of 13 cases companies experience positive abnormal stock returns over the subsequent four weeks (20 trading days). The average 20-day CAR following the awards is a startlingly high 9.3%, significant at the 1% level.

I extend the analysis in Table III to other variables associated with board structure, but I do not find significant associations. I regress the size of the 20-day CAR following CEO stock option awards against such variables as the percentage of the board comprised of outside directors, the percentage of directors appointed by the current CEO, and the fraction of common stock owned by board members other than the CEO. I study the same variables with respect to the board's compensation committee. Regression estimates do not suggest a significant association between any of these variables and stock returns following CEO option awards.

III. Stock Option Awards and Earnings and Dividend Announcements

Companies' quarterly earnings and dividend announcements provide convenient data for

further testing the hypothesis that CEO stock option awards are timed to anticipate significant corporate news. Unlike some events which might take executives by surprise (such as tender offers or management changes), earnings and dividend news is almost certainly known by CEOs before its announcement, which would appear to be a necessary condition for opportunistically timing stock option awards around news releases.

For each CEO stock option award, I obtain data about the earnings and dividend announcements that occur before and after the option award date. Bloomberg Financial Markets and *The Wall Street Journal Index* serve as sources for earnings announcement dates, while dividend declaration dates are reported by CRSP and Bloomberg. The same sources, as well as Compustat, provide data about the size of each quarterly dividend and net income. I treat a small handful of earnings and dividend announcements made during a weekend as having occurred on the following Monday, since the first investor reactions to the news would have occurred then.

A. Earnings Announcements

Figure 2 illustrates the timing of CEO stock option awards relative to companies' quarterly announcements of earnings. Strikingly, the most frequent day for CEOs to receive stock option awards occurs one day in advance of earnings announcements, and the next-most popular day is the exact date of announcements. This pattern may be partly explained by the requirement that boards of directors (or their compensation committees) approve stock option awards, as many companies might have practices of announcing quarterly profits just after board meetings. However, the data are also consistent with some coordination between option awards and the release of earnings news.

If CEOs controlled the timing of these events, one would expect significant differences in earnings announced before and after stock option awards. In particular, favorable earnings announcements should occur after stock option awards. Adverse announcements, if they occur at all around the time of stock option awards, should happen before the awards are made.

Table IV presents data summarizing all quarterly earnings announcements before and after CEO stock option awards (the table excludes 32 cases in which CEOs receive stock option awards on the exact day of earnings announcements). The table presents CARs around earnings announcements, calculated with the market model methodology described in Section II. The event period for these abnormal returns runs from the day before to the day after the announcement date; I use a three-day window because of the possibility of advance leakage of some earnings news, as well as the practice by some companies of releasing earnings news after the stock market closes on the announcement day. The table also reports mean and median earnings changes on a dollar basis, calculating these statistics across equal-weighted portfolios of the sample companies. Portfolios are formed by assuming that an equal dollar value of stock is purchased in each company on the date of the CEO stock option award.[5]

Summary statistics in Table IV provide evidence that CEOs receive stock option awards after poor earnings announcements and in advance of good earnings news. Mean and median changes in earnings are negative for announcements before stock option awards and positive for

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[5] This approach to calculating descriptive statistics about company earnings avoids problems posed by earnings per share data, which frequently includes negative or outlier values that confound the calculation of percentage changes. The equal dollar approach also assures that all sample companies contribute evenly to the calculation of descriptive statistics, which is not the case when one forms portfolios by assuming that an equal number of shares of stock are purchased in each company. See Ikenberry and Lakonishok (1993), who discuss these methodological issues and provide references to related studies.

subsequent announcements. The difference in central tendencies of the distributions is significant at the 1% level according to the Wilcoxon rank-sum test, while the difference is means is significant at 11%. The frequency of earnings increases is 46% for announcements before stock option awards and 58% for subsequent announcements; the difference between these numbers is significant at levels below 1%. Abnormal stock returns, reflecting investor reactions to earnings news, follow essentially the same pattern. Average abnormal returns are close to zero and insignificant for all earnings announcements before stock option awards, but positive and significant at the 1% level for earnings announcements after awards. The difference in average abnormal returns is positive and significant at the 1% level.

A similar analysis appears in Table V, which examines the abnormal returns for earnings announcements occurring within specific intervals around stock option awards. The first segment of the table shows that in the 61 cases when CEOs received stock options within five days prior to earnings announcements, those announcements were accompanied by average abnormal returns of 2.36%, significant at the 1% level. For the 69 option awards which occurred within five days after earnings news, the corresponding average abnormal returns were an insignificant -0.18%. Very similar patterns of abnormal returns occurred for option awards within 10 and 20 days of earnings announcements, as shown in the next two segments of Table V. Differences in abnormal returns are significant across all three sub-samples, and differences in the frequency of earnings increases are also significant in two out of three sub-samples. The magnitude of differences in abnormal returns across sub-samples declines as the interval around stock option awards is widened; this is consistent with an increasingly close timing between option awards and earnings news as the news increases in importance.

A further test of this relation comes from comparing the importance of earnings announcements (as measured by abnormal stock returns) with the time elapsed between awards and the nearest announcements. Managers should want to receive options just before especially good "surprises" in earnings, and should feel increasingly indifferent about awards' timing if earnings news is fully expected by investors. I therefore expect that for awards occurring before earnings announcements, a negative association will exist between announcement CARs and the time between awards and announcements. Conversely, for awards made after earnings announcements I do not expect a significant association between the announcement CAR and the time between announcements and awards.

Table VI presents an OLS regression analysis, with the number of trading days (absolute value) between stock option awards and prior and succeeding earnings announcements as the dependent variables, and the earnings announcement CAR as the explanatory variable. I exclude 32 awards made on announcement dates. Stock option awards made before earnings announcements occur increasingly close to the announcement day if the earnings news contains a large positive surprise, as indicated by the negative and significant coefficient on the abnormal stock return variable on the right side of Table VI. When awards are made after earnings announcements, no significant association is found in the regression. I conclude not only that CEO stock option awards occur in advance of favorable earnings news, but also that the timing of awards occurs closer to more important positive announcements.

B. Dividend Announcements

I study dividend announcements by repeating the analysis used for earnings

announcements. A priori, I expect to find less dramatic results, because about one-sixth of my sample companies do not pay dividends, and because the large majority of dividend announcements reflect zero change from the prior announcement. Figure 3 illustrates the timing between stock option awards and dividend announcements. The coordination between dividend declarations and stock option awards is extremely close, since both events usually require meetings of boards of directors. However, a dramatic difference exists between the number of option awards made one day before dividend announcements (77) and the number made one day later (11).

Summary statistics about abnormal returns surrounding dividend announcements and the frequency of dividend increases and decreases appear in Table VII. Though differences in key variables are not statistically significant, data about dividend announcements are not inconsistent with the hypothesis that opportunistic timing occurs between CEO stock option awards and company news releases. Dividend announcements following stock option awards are accompanied by higher abnormal stock returns than announcements before option awards. Dividend increases are slightly more likely to occur after option awards than before, while the reverse is true of dividend decreases.

IV. Discussion

The results presented in Sections II and III suggest that CEOs benefit from favorable timing of stock option awards relative to corporate news announcements. The results appear more striking when contrasted with studies of legal insider stock trades around news announcements. Several investigations have found that executives do not succeed in timing

stock trades to exploit contemporaneous news. Givoly and Palmon (1984) examine insider trading around news announcements by 68 American Stock Exchange companies and find no evidence of greater inside purchases before favorable news or greater selling before adverse news. Elliott, Morse and Richardson (1985) study insider trading around nearly 4,000 news announcements by New York and American Stock Exchange firms. They also find no consistent evidence that executives trade opportunistically around public announcements. In contrast, CEOs in my sample appear to receive stock option awards before positive earnings announcements and not until after negative earnings announcements.

While the evidence presented above appears to offer a prima facie case that managers influence the terms of stock option awards to their financial advantage, numerous alternative explanations are possible. The following sub-sections evaluate five such theories, including insider trading by those with knowledge of CEO stock option awards; acquiescence by directors and shareholders in the opportunistic timing of option awards as a surrogate form of insider trading by executives; deliberate awards of stock options by boards in advance of good news in order to circumvent legal restrictions against in-the-money options; the use of expected upward movements in option values as a form of tax arbitrage between executives and firms; and the possibility that executives manipulate the timing of news announcements rather than the timing of option awards. For a variety of empirical, institutional, and legal reasons discussed below, none of these alternative theories appears persuasive.

A. Insider Trading on Knowledge of CEO Option Awards

One possible explanation for abnormal stock returns following CEO stock option awards

could be news of the awards leaking to some investors around the award dates. If informed investors (including members of the board or CEOs themselves) believed that greater CEO incentives would lead to better management, they might attempt to capitalize on news of CEO stock option awards by purchasing stock either legally or illegally, thereby pushing prices higher.

As mentioned earlier, a reason to doubt the importance of this insider trading explanation is that abnormal stock returns do not begin to cumulate until *after* the award dates of CEO stock options (see Figure 1 and Table I). Many insiders with access to knowledge of CEO stock option awards would almost certainly know of the awards in advance, and if they considered this knowledge important enough to buy stock, they would undoubtedly buy as soon as possible, causing abnormal returns to begin *before* the option award date.

Nevertheless, the insider trading hypothesis seems compelling enough to warrant further investigation. One cannot reliably test the hypothesis by using standard SEC data about officer and director stock purchases around the dates of CEO stock option awards. As shown above, corporations often release significant news (such as earnings and dividend changes) very close to the days on which CEOs receive options. Since insiders have at least a ten-day grace period in which to report stock purchases, any significant pattern of insider purchases near the dates of CEO stock option awards could easily be attributed to other news announcements.

An alternative test for the presence of insider trading has been used by Meulbroek (1992), who estimates a market model of trading volume around insider trading events. In her study of 131 episodes of insider trading, Meulbroek finds that volume in a firm's stock is 93% higher than expected on days in which the SEC identifies a case of insider trading. Moreover, her study documents a link between this increased volume and the magnitude of abnormal stock price

movements. Muelbroek estimates that abnormal volume of 100% on an ordinary trading day leads to expected abnormal stock returns (absolute value) of 0.55%, while abnormal volume of 100% on days with insider trading leads to expected abnormal stock returns of 1.38%. These results imply that uninformed traders recognize purchases by insiders and bid stock prices higher or lower in response.

I follow Muelbroek's approach for analyzing trading volume by using a market model for volume. This regression analysis, an extension of work by Ajinkya and Jain (1989), is similar to the market model for abnormal stock returns:

$$\begin{aligned}\log(v_{it}) = {} & \alpha_i + \beta_i \log(v_{mkt}) + \lambda_1 \log(v_{it-1}) + \lambda_2 \log(v_{it-2}) \\ & + \eta_1 Mon_{it} + \eta_2 Tue_{it} + \eta_3 Wed_{it} + \eta_4 Thu_{it} + \phi_1 Holiday_{it} + \phi_2 Holiday_{it-1} \\ & + \rho_i Earnings_{it} + \delta_i Dividend_{it} + \gamma_i Option\ Award_{it} + \epsilon_{it}\end{aligned} \qquad (2)$$

In the specification of the model, v_t represents daily trading volume in a company's stock, while v_{t-1} and v_{t-2} are lags added to the model to reduce serial correlation of the residuals.[6] The v_{mkt} term is total volume for the New York, American or NASDAQ exchange, as appropriate. *Mon, Tue, Wed* and *Thu* are day-of-the week dummies, and *Holiday* is a dummy variable equal to one for days preceding three-day holiday weekends and Fridays following Thanksgivings. *Earnings, Dividend,* and *Option Award* are dummy variables equal to one during the event periods surrounding earnings announcements, dividend announcements, and CEO stock option awards, respectively. I estimate the model for a variety of event periods, as discussed below.

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[6] Because the model is estimated separately for each CEO stock option award and the results then aggregated, it is not straightforward to conduct a hypothesis test for serial correlation. However, it is highly suggestive to observe that in the basic specification of the model, the mean estimated first-order residual autocorrelation coefficient rises from 0.008 to 0.319 if the two lagged volume terms are excluded. The magnitude and significance of coefficient estimates appears unaffected by inclusion of the lagged volume terms.

I run the market model regression separately for each of the CEO stock option awards, using daily volume data from 50 trading days before until 50 days after each award date as the sample. I drop from the analysis five option awards for which the three events of an earnings announcement, dividend announcement, and CEO stock option award occur simultaneously. I use dummy variables for observations where the CEO stock option award occurs on the same day as either an earnings or dividend announcement, so that data around those events can contribute to estimates of the coefficients on the *Earnings* or *Dividend* dummy variables. Regressions over the sample therefore yield approximately 500 estimates of the ρ, δ and γ parameters, which measure the abnormal trading volume on days around earnings announcements, dividend announcements, and CEO stock option awards, respectively. The arithmetic mean of the individual estimates serves as the overall estimator of each parameter. Standard errors are calculated following Dodd and Warner's (1983) method of aggregating standardized prediction errors.

Table VIII presents results of estimating the model with four alternative specifications of the event periods around earnings announcements, dividend announcements, and CEO stock option awards. When each event period is restricted to a single day, abnormal volume is estimated at 37.5% on days with earnings announcements, 7.1% on days with dividend announcements, and -1.0% on days with CEO stock option awards. Only the earnings and dividend announcement abnormal volumes are statistically significant. When the window is widened to include the day before and after each event, abnormal volume is estimated as 19.1%, 0.8%, and 0.7% per day, respectively, with only the earnings-related volume having statistical significance. Other estimates are shown with increasingly wider event periods surrounding CEO

stock option awards; these estimates are representative of the results of analyzing numerous event windows around the option award dates. The estimated abnormal trading volume surrounding CEO stock option awards, while sometimes statistically significant, always falls within the approximate range of plus or minus 1.0% of usual daily volume. The cumulative abnormal volume surrounding CEO option awards never approaches the levels needed to explain the abnormal stock returns of approximately 2.5% that cumulate after the option award date. I conclude that volume evidence does not support conjectures that insider trading around the dates of CEO stock option awards accounts for the CARs observed during these periods.

B. Shareholder Acquiescence in Surrogate Insider Trading by CEOs

Although the above evidence gives little indication that insider trading takes place around the dates of CEO stock option awards, the profits earned by CEOs due to the favorable timing of these awards makes them resemble a surrogate form of insider trading, albeit without the ordinary requirements of disclosure or risks of detection and prosecution. Some scholars have suggested that shareholders may encourage insider trading by managers for incentive reasons. Since managers must generate favorable corporate news in order to profit from the timing of stock option awards, shareholder acquiescence in managers' manipulation of option award dates could also be loosely related to the Fama (1980) "ex-post settling up" theory of compensation, under which superior managerial performance is rewarded after-the-fact with pay increases.

Manne (1966) and Carlton and Fischel (1983) are leading exponents of legal insider trading theories, which rest upon assumptions about managerial risk-bearing and the costs of renegotiating compensation contracts. The theories hold that allowing managers to choose

secretly when to buy and sell stock will increase their incentives to pursue valuable corporate opportunities and generate positive news on which they can trade. Such arrangements could reduce the costs of writing compensation contracts and protect managers against unfairness in the ex-post settling up process. Further, the willingness of managers to work under such a regime might serve as a valuable signal about their risk preferences.

Many writers have attacked these theories, arguing that permitting insider trading would allow executives to subvert market mechanisms which set wages competitively (Ross (1979)), encourage destructive managerial behavior tied to short-selling, undermine public confidence in the securities markets, and inefficiently reward managers who have fortuitous access to certain information (see, e.g., Brudney (1979)). This study has some relevance for the latter argument, since CEOs appear to receive stock-based compensation shortly in advance of stock price increases tied to earnings and other announcements. To the extent that stockholders intend other compensation arrangements to reward managers for the effort which produced the positive earnings news, the resulting "bounce" in stock option values appears to represent a windfall obtained only because of CEOs' advance knowledge of corporate news and its release date.

Even if stockholders acquiesce in the opportunisitic timing of CEO stock option awards, considering it an implicit form of compensation, such arrangements would contravene the spirit and possibly the letter of the federal securities laws' proscription of insider trading and securities fraud. Under the "disclose or abstain" doctrine, company executives who have knowledge of significant future news announcements may not acquire stock until the news is disclosed;

otherwise they face penalties under Rule 10b-5 of the Securities Exchange Act of 1934.[7] Whether this doctrine would apply to a CEO who influences his board to grant stock options in advance of favorable news represents a novel legal issue. However, there is little question that Congress and the SEC have sought zealously in recent years to expand the scope of prohibited actions and penalties that fall under the purview of insider trading laws. Congressional acts in 1984 and 1988 substantially raised penalties for insider trading, and Meulbroek (1992) documents the increasing frequency of civil prosecutions by the SEC.

Along with its possible conflict with insider trading laws, CEO control over stock option award dates would also appear to contravene the spirit of Congress's and the SEC's recent efforts to limit managerial influence over companies' compensation contracting procedures. As discussed in Section I above, the SEC since 1992 has expanded disclosure requirements for executive compensation, required disclosure of conflicts-of-interest held by those involved in setting CEO compensation policies, and required companies to publish essays explaining the structure of top managers' contracts, while Congress in 1993 enacted §162(m) of the Internal Revenue Code to limit the tax deductibility of executive compensation unless the compensation committee is composed entirely of independent directors.

C. Awarding In-the-Money Options

An overwhelming majority of executive stock options are granted at-the-money (including 95% of the awards studied for this paper), presumably because of the unfavorable

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[7] Penalties can include disgorgement of three times the executive's estimated trading profits, as well as large fines and criminal sanctions. The disclose or abstain principle was established by *In the Matter of Cady, Roberts & Co.*, 40 S.E.C. 907 (1961). Clark (1986) and Meulbroek (1992) provide introductions to insider trading regulation.

treatment accorded in-the-money options by tax and accounting regulations. Executives receiving in-the-money options cannot take advantage of several types of income tax savings (see Section IV.D below), and firms must recognize an immediate expense on their income statements equal to the difference between the options' exercise price and the stock's market value at the time of award.

However, at-the-money options have no special benefits from the viewpoint of compensation theorists. Numerous papers have concluded that the optimal exercise price for an option varies across executives and companies, depending on such variables as the CEO's personal wealth, the amount of this wealth already tied to the company's stock price, and the risk aversion of the CEO and outside shareholders (see the discussion of options' incentive effects in Lambert, Larcker, and Verrecchia (1991)). In-the-money options provide higher pay-performance sensitivities to CEOs compared to at-the-money options, since the association between changes in an option's value and changes in stock price asymptotically approaches one as an option moves further into-the-money.

Corporations may want to obtain the incentive benefits of in-the-money options without incurring their tax and accounting penalties. A firm could conceivably do so by awarding at-the-money options to a CEO at a favorable time, just before the public disclosure of good news which should push the company's stock price higher and move the options into-the-money.

While this conjecture seems theoretically elegant, several institutional realities appear to render it implausible as an explanation for the favorable timing of option awards documented above. First, well-known alternatives such as restricted stock or phantom stock could accomplish the goal of awarding tax-deferred, equity-based compensation with greater sensitivity

to the value of the firm, without the unavoidably large errors which would occur in attempting to estimate the impact of forthcoming news announcements upon the value of already-awarded options. Second, if companies really did give great thought to the optimal exercise prices of executive options, one would expect to observe a nontrivial fraction of options being awarded out-of-the-money, since these are not penalized by tax or accounting regulations. However, this occurs very infrequently. Finally, one would also expect to observe at least some lobbying by major companies and compensation consultants for Congress and the FASB to relax the tax and accounting penalties associated with in-the-money options. However, the issue seems to have stirred no attention at all among these groups, even though executive stock options have emerged in recent years as a major topic of debate for them.

D. Minimizing Net Tax Expenses

When awarded in compliance with the Internal Revenue Code, stock options offer the possibility of a net tax savings to an executive and his company compared to the taxes associated with ordinary cash compensation. If a firm pays compensation in stock options instead of cash, it suffers a cash flow penalty since it cannot obtain a tax deduction for the compensation expense. However, the executive is able to delay personal taxes on this income until he sells the stock acquired from exercising his options, and if he waits a suitable amount of time, he pays taxes at the marginal rate for capital gains instead of earned income. The present value of these savings will generally exceed the immediate tax cost to the corporation,[8] enabling the firm to pay

[8] This summary explanation does not do justice to the complexities of the tax laws surrounding executive stock options. For example, it is sometimes efficient for the executive to renounce the options' tax-favored status before exercising them. For a fuller treatment, see Scholes and Wolfson (1992).

the CEO lower total compensation. This effect could be increased if both parties were aware that the options were likely to rise in value due to impending good news.

Again, institutional realities appear to rule out this explanation for the favorable timing of CEO stock option awards. As noted above, reliance upon the future path of a company's stock price as an element in a tax-efficient compensation scheme appears fraught with uncertainty and is likely dominated by other schemes, such as pensions and deferred compensation. Moreover, the importance of tax considerations in the stock option award process appears to have diminished markedly in recent decades. While early research such as Holland and Lewellen (1962) attributes the initial spread of stock options to the vast differences in personal tax rates for earned income and capital gains in the 1950s and 1960s, those differences have narrowed considerably (and at times disappeared) in the 1980s and 1990s. Both Matsunaga (1995) and Yermack (1995) do not find a relation between firms' relative tax positions and their use of stock options for executive compensation, and Matsunaga et al. (1992) find that a significant number of firms and executives forego the tax benefits of stock options altogether by not awarding or exercising them in compliance with the Internal Revenue Code.

E. Managerial Manipulation of News Releases

Much of the preceding text argues that CEOs influence the timing of stock option awards in order to capitalize on movements in stock prices tied to expected news announcements. An equivalent scheme would be for CEOs to manipulate the timing of company news announcements in order to maximize the value of stock options that they expect to receive from their firms on certain dates. These two explanations do not seem entirely different, as each

implies that managers become enriched at shareholders' expense by controlling some sequence of corporate events. However, the alternative theory does not cast aspersions upon board of directors compensation committees, since it carries no implication that the committees fall under the influence of the executives whose contracts they negotiate.

Further analysis of the data in this study, as well as the results of other papers, appears to contradict the alternative theory that managers manipulate the dates of news announcements instead of the dates of stock option awards. Such a strategy would require CEOs to delay announcements containing good news until after stock option awards occur, and rush forward announcements of bad news so that company stock prices fall in advance of (and not after) option awards. A long line of studies has found that managers behave in the opposite way, announcing favorable news quickly and delaying adverse news. See Kross and Schroeder (1984) and Penman (1984) (earnings announcements) and Kalay and Lowenstein (1986) (dividend announcements).

I test the conjecture that CEOs delay favorable earnings announcements and rush forward adverse announcements by analyzing the sample of quarterly earnings announcements gathered for Section III.A of this study. I assume that the abnormal stock return surrounding an earnings announcement represents the strength of good or bad news conveyed by the announcement. I use this stock return as an explanatory variable in a regression with the dependent variable equal to the number of days from the end of a fiscal quarter until each earnings announcement:

$$\begin{pmatrix} \textit{days after end of quarter} \\ \textit{to earnings announcement} \end{pmatrix}_i = \alpha' \begin{pmatrix} \textit{fiscal quarter} \\ \textit{dummy variables} \end{pmatrix}_i + \beta \begin{pmatrix} \textit{quarterly earnings} \\ \textit{announcement CAR} \end{pmatrix}_i + \epsilon_i \qquad (3)$$

CARs surrounding earnings announcements are measured from the day before until the day

following the announcement, as done in Section III above. I assume all fiscal quarters end on the last trading day of a calendar month. The sample includes approximately 1,200 observations, representing the earnings announcements before and after each stock option award (only one observation is included for each of the 32 option awards made exactly on the day of an announcement). If announcements are manipulated by managers in order to increase option values, the β regression coefficient should have a positive estimate, implying that good earnings news is delayed and adverse news is announced quickly.

I do not detect any significant association between the timing of earnings announcements and their associated abnormal stock returns, as the β coefficient is estimated as -5.21 with a t-statistic of -1.36. The negative β estimate, though not statistically significant, accords with the studies cited above that have found companies announce favorable news quickly and adverse news slowly. The results show no meaningful change if the model is extended to include two interaction terms between the CAR variable and dummy variables for whether stock option awards are made to the CEO within a certain interval before and after each earnings announcement.

V. Conclusion

This paper proposes and implements a new method for investigating corporate managers' influence over the terms of their own compensation. In analyzing the dates of 619 stock option awards to CEOs of *Fortune 500* companies between 1992 and 1994, I find that the timing of awards has significant associations with contemporaneous movements in company stock prices. Stocks experience an average cumulative abnormal return of approximately 2.4% in the 50

trading days following CEO option awards, even though news of the awards is kept secret until several months after a fiscal year ends. The average book value of CEO stock options increases in the first month after award at a rate four and a half times faster than during the remainder of the first year. Analysis of corporate earnings announcements supports an interpretation that CEOs receive stock option awards shortly in advance of favorable corporate news. The timing of CEO stock option awards appears even more successful than the timing of ordinary stock trades by corporate insiders as analyzed in past studies. While several alternative theories could plausibly explain these results, they appear to be refuted by institutional and empirical evidence as well as legal constraints.

The findings of this paper suggest an alternative interpretation of executive compensation studies that find a connection between the introduction of long-term compensation plans and improvements in company performance. While many have concluded that these studies illustrate a cause-and-effect relationship between incentive compensation and superior managerial decisions, this research supports an opposite view. Managers who become aware of impending improvements in corporate performance may seek more incentive pay in order to capitalize on investors' expected reactions to news of the improvements. Under this interpretation, stock options appear to serve as low-risk devices for increasing managerial wealth, instead of incentives for encouraging managerial risk-taking and effort.

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Figure 1
Stock Returns Following Receipt of Stock Options by CEOs.

Cumulative abnormal stock returns (CARs) for Fortune 500 companies awarding stock options to their CEOs between 1992 and 1994. Average CARs are calculated for an event period around the dates of 619 CEO stock option awards. It is important to recognize that news of option awards almost never becomes public until company proxy statementes are filed approximately three months after the fiscal year in which an award occurs. Sample selection and CAR calculations are described more fully in the text, and Table I reproduces the data shown in this figure.

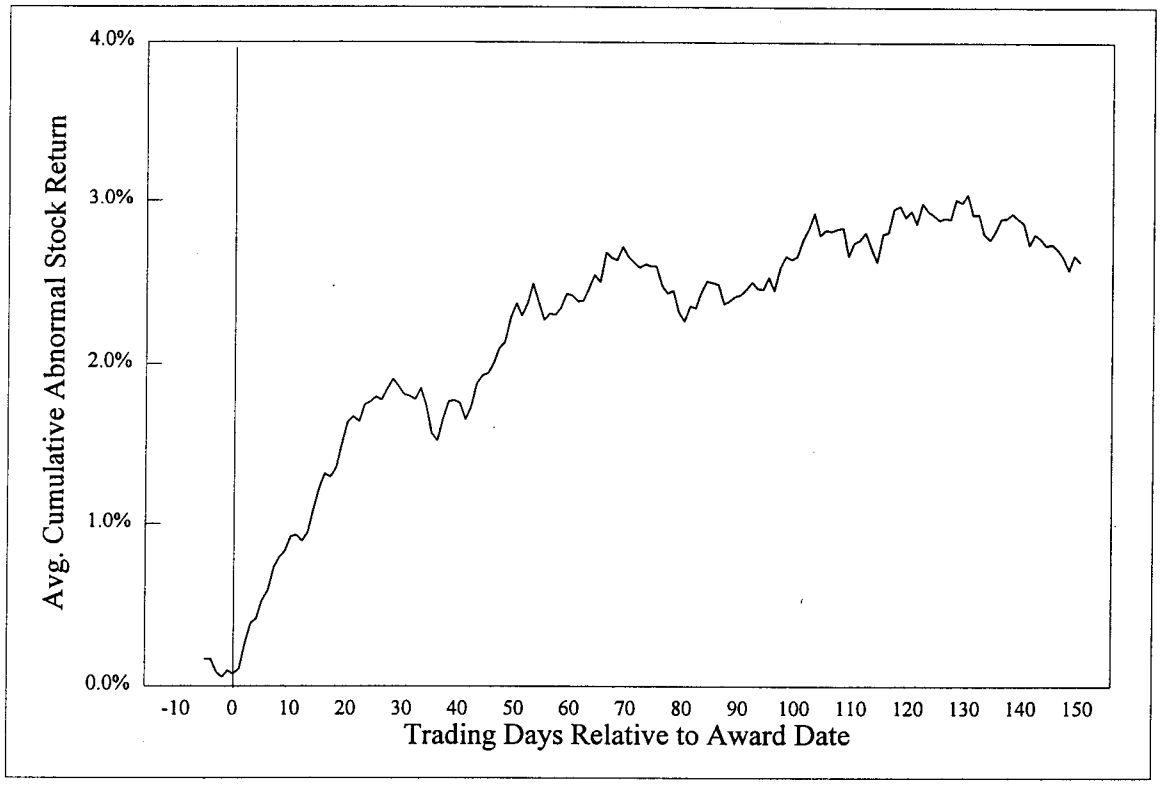

Table I
Stock Returns Following Receipt of Stock Options by CEOs.

Cumulative abnormal stock returns (CARs) for Fortune 500 companies awarding stock options to their CEOs in fiscal years beginning in 1992 and 1993. Average CARs are calculated for an event period around the dates of 619 CEO stock option awards. CARs and Z-statistics are calculated from Dodd and Warner's (1983) market model methodology, assumptions for which are given in the text. The data below are also displayed in Figure 1.

The sample includes all firms listed in the 1993 Fortune 500 ranking of U.S. manufacturing and mining companies. Dates for CEO stock option awards were obtained from the first two proxy statements filed by each firm in compliance with the SEC's reformed rules for executive compensation disclosure, which became effective in late 1992. CARs were calculated using the CRSP database.

Days Relative to Award Date	Sample Size	Average CAR	Z-Statistic
-5	619	0.17%	1.57
-4	619	0.17%	1.12
-3	619	0.09%	0.50
-2	619	0.06%	0.18
-1	619	0.10%	0.38
0	619	0.07%	0.25
1	619	0.11%	0.41
2	619	0.26%	1.22
3	619	0.38%	1.62
4	619	0.41%	1.49
5	619	0.52%	1.97 **
6	619	0.58%	1.97 **
7	619	0.72%	2.29 **
8	619	0.79%	2.38 **
9	619	0.83%	2.45 **
10	619	0.92%	2.63 ***
.	.	.	.
15	619	1.22%	3.09 ***
.	.	.	.
20	619	1.64%	3.78 ***
.	.	.	.
30	618	1.82%	3.66 ***
.	.	.	.
40	618	1.76%	3.29 ***
.	.	.	.
50	617	2.37%	4.05 ***
.	.	.	
100	613	2.65%	2.95 ***
.	.	.	
150	606	2.62%	1.88 *

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table II
Book Values of CEO Stock Option Awards.

Book values for a sample of 619 stock option awards to CEOs of Fortune 500 companies made between 1992 and 1994. Book value is defined as the greater of zero or the difference between the underlying stock price and an option's exercise price. Data is reported for stock option book values one month and one year after award.

The first row of the table shows the fraction of options with positive book values. The second section shows the percentage excess of stock price above exercise price for those options with nonzero book values. The third section shows mean gains in book value realized across the entire portfolio of CEO stock options after one month and one year. Gains are expressed as both a percentage of option exercise prices and as raw dollar values per award. The fourth section shows what fraction of the first year's book value gains occur during the first month after the award date.

Dates and exercise prices of CEO stock option awards are obtained from company proxy statements, and stock price data is obtained from CRSP and Bloomberg Financial Markets. Eleven of the 619 stock option awards were made in-the-money (with exercise prices below stock price on the award date), while 17 awards were made completely out-of-the money.

	After One Month	After One Year
Fraction of CEO stock options in-the-money	58.6%	60.6%
(stock price above exercise price)		
Book value of in-the-money options		
(excess of stock price above exercise price)		
Mean	8.2%	27.7%
Median	5.8%	18.1%
Book value appreciation across portfolio of CEO stock options		
(excess of stock price above exercise price, average)	4.8%	16.8%
(average dollar value per award, average, 000)	$101.0	$363.1
Fraction of first year's portfolio gains realized after one month		
(gains measured on percentage basis)	28.6%	100.0%
(gains measured on dollar basis)	27.8%	100.0%

Table III
Option Awards to CEOs Serving on Their Own Compensation Committees.

Stock option awards received by CEOs who serve as members of their board of directors compensation committees. The table lists the date of each stock option award and significant news announcements that occurred shortly thereafter. In all cases, options were granted with exercise price equal to the stock's market price. The right column lists abnormal stock stock returns for each company over the 20 trading days beginning with the award date, calculated following the market model approach of Dodd and Warner (1983).

The observations represent a subsample of the 619 CEO stock option awards made in the 1992-93 and 1993-94 fiscal years by Fortune 500 companies. CEOs who received stock options while serving on their own compensation committees (or similar board of directors groups) were identified from corporate proxy statements, which also served as the source for dates and exercise prices of each option award. News reports were extracted from the Nexis database, and abnormal stock returns were calculated from the CRSP database.

Company	CEO	Award Date	Subsequent News	Abnormal Stock Returns Over 20 Days Following Award
Dexter Corp.	K. Grahame Walker	Apr. 24, 1992	Division sold (May 19)	-3.3%
Great American Mgt.	Samuel Zell	Dec. 16, 1992	None	-0.3%
Hudson Foods	James T. Hudson	Oct. 5, 1992	Analyst raises earnings estimate (Nov. 5)	16.7%
Kimball International	Douglas A. Habig	Aug. 26, 1993	None	-2.2%
Nucor	F. Kenneth Iverson	Feb. 28, 1992	Dividend increased (Mar. 16)	-4.3%
		Aug. 31, 1992	None	6.2%
		Feb. 28, 1993	Dividend increased (Mar. 12)	1.0%
		Aug. 31, 1993	Prices increased; competitors match (Sep. 16)	12.5%
Reliance Electric	John C. Morley	Dec. 16, 1993	New product demonstration (Jan. 10)	11.8%
Tandem Computers	James G. Treybig	Apr. 26, 1993	Division sold (May 10); Analyst recommends stock (May 14)	18.3%
		Sep. 8, 1993	Analyst recommends stock (Oct. 4); New product announcement (Oct. 6)	27.5%
Total Petroleum N. A.	Daniel L. Valot	Dec. 11, 1992	Analyst recommends stock (Jan. 8)	37.3%
		Dec. 11, 1993	Dividend reinstated (Dec. 14)	0.1%
			Mean	**9.3%**
			T-Statistic	**2.78**

Notes: Several companies published disclaimers about the CEO's role on the compensation committee. Dexter Corp.'s CEO served in an ex-officio, non-voting capacity. Reliance Electric's CEO resigned from the committee in the middle of the year and purportedly had no role in deliberations over his own pay. Total Petroleum delegated CEO compensation issues to the entire board except for the CEO. However, its compensation committee apparently did set the dates for CEO stock option awards, since all other top officers received awards at the same time.

Figure 2
Timing of CEO Stock Option Awards and Earnings Announcements.

Frequency distribution of CEO stock option award dates relative to the dates of companies' nearest quarterly earnings announcements. The sample consists of 619 stock option awards to CEOs of Fortune 500 companies between 1992 and 1994. Dates for CEO stock option awards appear in company proxy statements. Earnings announcement dates were obtained from Bloomberg Financial Markets, The Wall Street Journal Index, and miscellaneous press sources. The data displayed below reflect only those dates when U.S. stock exchanges are open for trading. A small number of awards that occur more than 40 trading days from any earnings announcement are omitted.

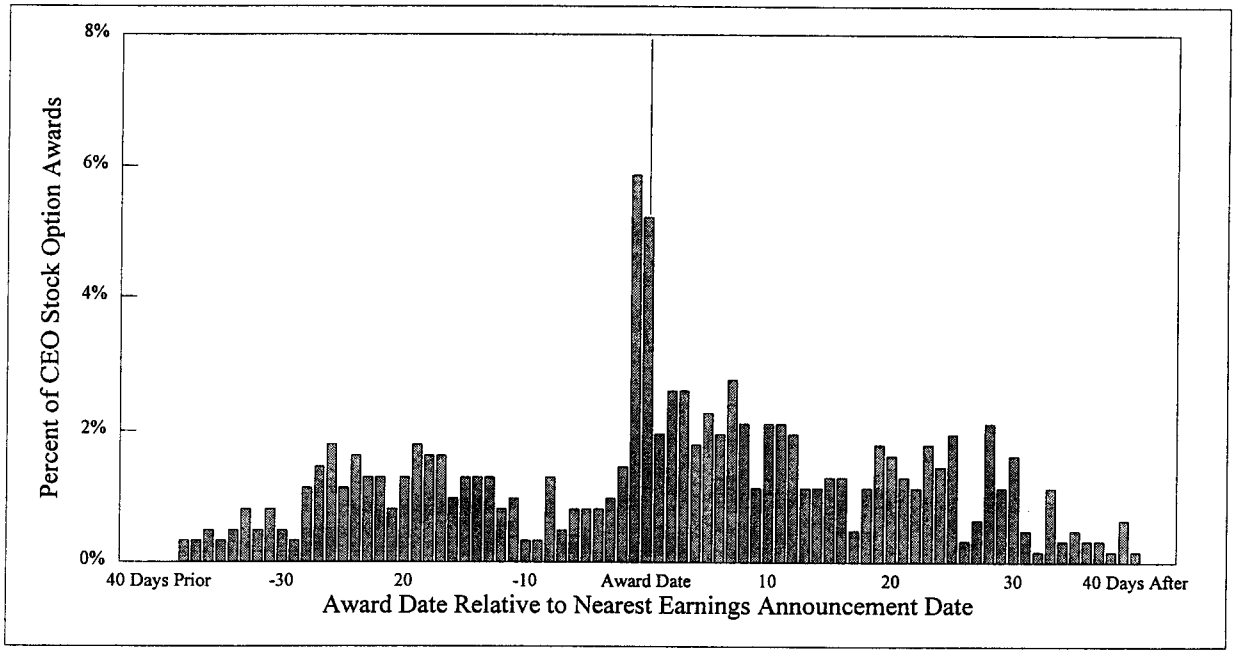

Table IV
Earnings Announcements Before and After CEO Stock Option Awards.

Descriptive data about company announcements of quarterly net income, for those announcements preceding and following the award of stock options to company CEOs. Abnormal stock are presented on a cumulative basis for the period beginning one trading day before and ending one day after each earnings announcement. A market model methodology, described more fully in the text, is used to calculate abnormal stock returns. Data for changes in quarterly earnings are calculated on a dollar basis across the sample of companies, based on an assumption that $1,000 is invested in each company's stock on the date of each CEO stock option award.

The entire sample consists of 619 stock option awards to CEOs of Fortune 500 companies between 1992 and 1994, but the analysis excludes 32 cases in which CEOs receive stock option awards exactly on the days of earnings announcements. Earnings data were obtained primarily from Bloomberg Financial Markets and The Wall Street Journal Index, while dates of CEO stock option awards were obtained from company proxy statements. The abnormal stock return is unavailable for one earnings announcement made in 1995.

	Prior Earnings Announcements	Subsequent Earnings Announcements	Difference
Observations	587	586	
Abnormal stock return (day before to day after announcement)			
Mean	0.12%	0.66%	0.54%
T-statistic	0.84	5.04 ***	2.77 ***
Change in quarterly earnings per $1,000 invested			
Mean	($6.19)	$3.27	$9.46
T-statistic	-1.50	0.79	1.61
Median	($0.34)	$1.13	$1.47
Wilcoxon rank-sum statistic			3.89 ***
Frequency of increases	46.2%	58.1%	11.9%
T-statistic			4.12 ***

*** Significant at 1% level.

Table V
Abnormal Stock Returns for Earnings Announcements Within Short Intervals Around CEO Stock Option Awards.

Abnormal stock returns surrounding company announcements of quarterly earnings, for those announcements within short intervals around the dates of stock option awards to company CEOs. Abnormal stock returns are presented for the period beginning one trading day before and ending one day after each earnings announcement. A market model methodology, described more fully in the text, is used to calculate abnormal stock returns. T-statistics for abnormal stock returns are based upon the methods of Dodd and Warner (1983).

The entire sample consists of 619 stock option awards to CEOs of Fortune 500 companies between 1992 and 1994. Earnings data were obtained primarily from Bloomberg Financial Markets and The Wall Street Journal Index, while dates of CEO stock option awards were obtained from company proxy statements.

Earnings Announcements Within 5 Trading Days of CEO Stock Option Awards

	Obs.	Abnormal Stock Return	T-Statistic	Frequency of Earnings Increases	T-Statistic
Announcements after awards	61	2.36%	4.85 ***	57.4%	
Announcements before awards	69	-0.18%	-0.24	42.0%	
Difference		2.54%	2.89 ***	15.3%	1.75 *

Earnings Announcements Within 10 Trading Days of CEO Stock Option Awards

	Obs.	Abnormal Stock Return	T-Statistic	Frequency of Earnings Increases	T-Statistic
Announcements after awards	81	1.93%	4.42 ***	51.9%	
Announcements before awards	131	-0.19%	-0.48	45.0%	
Difference		2.12%	3.60 ***	6.8%	0.96

Earnings Announcements Within 20 Trading Days of CEO Stock Option Awards

	Obs.	Abnormal Stock Return	T-Statistic	Frequency of Earnings Increases	T-Statistic
Announcements after awards	161	1.38%	4.54 ***	55.3%	
Announcements before awards	217	0.47%	2.19 **	45.6%	
Difference		0.91%	2.44 **	9.7%	1.86 *

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table VI
Timing of CEO Stock Option Awards as a Function of Earnings News.

Coefficient estimates for regressions of the time between CEO stock option awards and quarterly company earnings announcements, against the abnormal stock returns surrounding those announcements. The full sample consists of 619 stock option awards to CEOs of Fortune 500 companies between 1992 and 1994. Observations are excluded for 32 stock option awards that occur exactly on the dates of earnings announcements, and the abnormal stock return is unavailable for one announcement made in early 1995.

Abnormal stock returns are calculated on a cumulative basis for the period beginning one trading day before and ending one day after each earnings announcement. A market model methodology, described more fully in the text, is used to calculate abnormal stock returns. Announcement dates were obtained primarily from Bloomberg Financial Markets and The Wall Street Journal Index, and dates of CEO stock option awards were obtained from company proxy statements. The number of days used to measure the dependent variables include only trading days when U.S. stock exchanges are open.

Dependent variable:	Days since last earnings announcement		Days until next earnings announcement	
	Coefficient	**T-Statistic**	**Coefficient**	**T-Statistic**
Intercept	31.07	36.06 ***	34.15	44.01 ***
Abnormal stock return (day before to day after announcement)	-27.41	-1.62	-38.50	-2.49 **
Sample size		587		586
R-squared		0.0045		0.0105

*** Significant at 1% level
** Significant at 5% level

Figure 3
Timing of CEO Stock Option Awards and Dividend Announcements.

Frequency distribution of CEO stock option award dates relative of companies' nearest quarterly dividend announcements. The sample consists of 619 stock option awards to CEOs of Fortune 500 companies between 1992 and 1994, although approximately one-sixth of those observations are excluded for companies paying zero dividends. Dates for CEO stock option awards appear in company proxy statements. Dividend announcement dates were obtained from CRSP, Bloomberg Financial Markets, and press sources. The data displayed below refelct only those days when U.S. stock exchanges are open for trading. A small number of awards that occur more than 40 days from any dividend announcement are omitted.

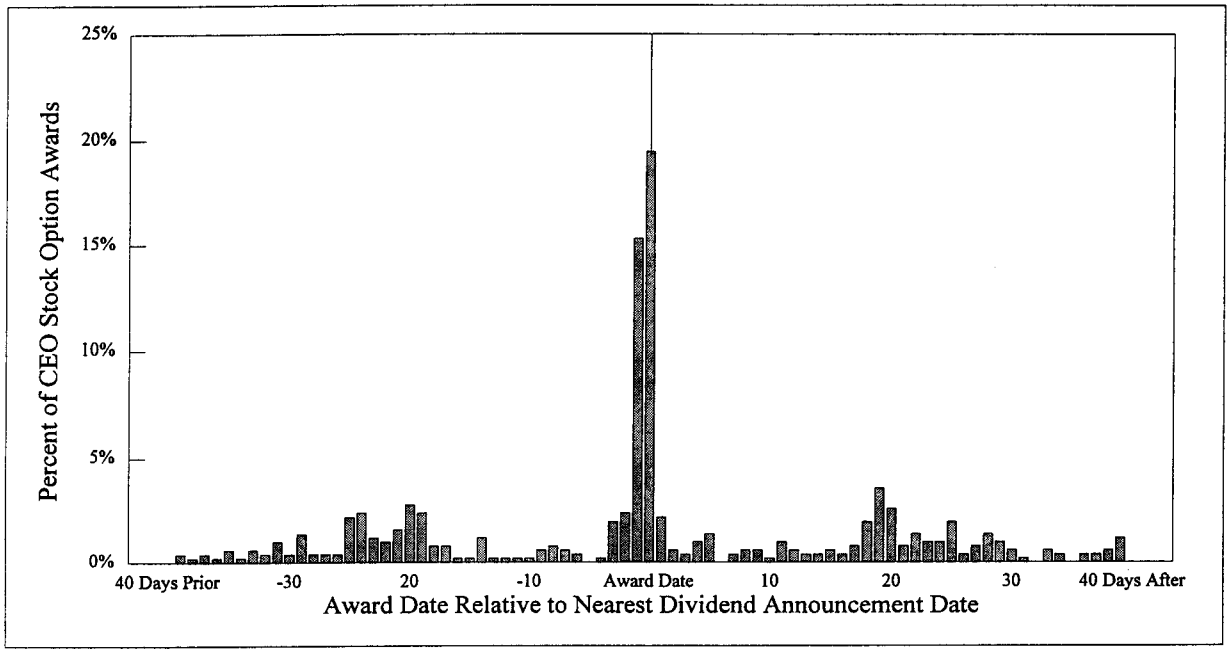

Table VII
Dividend Announcements Before and After CEO Stock Option Awards.

Descriptive data about company announcements of quarterly dividends, for those announcements preceding and following the award of stock options to company CEOs. Abnormal stock are presented on a cumulative basis for the period beginning one trading day before and ending one day after each dividend announcement. A market model methodology, described more fully in the text, is used to calculate abnormal stock returns.

The entire sample consists of 619 stock option awards to CEOs of Fortune 500 companies between 1992 and 1994, but the analysis excludes companies paying zero dividends and 98 cases in which CEOs receive stock option awards exactly on the days of dividend announcements. Dividend data were obtained primarily from Bloomberg Financial Markets and CRSP, while dates of CEO stock option awards were obtained from company proxy statements. The abnormal stock return is unavailable for one dividend announcement made in 1995.

	Prior Dividend Announcements	Subsequent Dividend Announcements	Difference
Observations	417	416	
Abnormal stock return (day before to day after announcement)			
Mean	0.28%	0.51%	0.24%
T-statistic	1.74 *	3.62 ***	1.10
Frequency of increases			
Mean	15.1%	15.6%	0.5%
T-statistic			0.19
Frequency of decreases			
Mean	1.7%	1.4%	-0.2%
T-statistic			-0.28

*** Significant at 1% level.
** Significant at 5% level.
* Significant at 10% level.

Table VIII
Abnormal Trading Volume Around CEO Stock Option Awards.

Coefficient estimates for a model of abnormal trading volume surrounding the dates of CEO stock option awards. Estimates are from a log market model of trading volume similar to that used by Muelbroek (1992). The model includes controls for market volume, two days of lagged company trading volume, days of the week, and holidays The sample includes daily volume data surrounding 619 awards of stock options to CEOs of Fortune 500 companies between 1992 and 1994. The market model regression is estimated separately for each award, using 50 leading and 50 trailing days of data. Individual coefficient estimates are averaged to produce the estimates in the table, with standard errors obtained from a method similar to that of Dodd and Warner (1983). Dates on which stock option awards coincide with either earnings announcements or dividend announcements do contribute to the estimates below, due to the use of dummy variables in the regression model.

The table reports estimated abnormal trading volume for event periods surrounding awards of CEO stock options (for which no public announcements occur), as well as event periods surrounding quarterly dividend and quarterly earnings announcements. Abnormal volume is reported as an average per day for each event period, and results appear for four alternative sets of event periods. Abnormal volume estimates should be interpreted as percent deviations from normal trading volume.

	Type of Event	Event Period	Daily Abnormal Volume	T-Statistic	
Model 1	CEO stock option awards	event day only	-1.0%	-0.27	
	Dividend announcements	event day only	7.1%	3.26	***
	Earnings announcements	event day only	37.5%	18.80	***
Model 2	CEO stock option awards	[-1, 1]	0.7%	0.83	
	Dividend announcements	[-1, 1]	0.8%	0.87	
	Earnings announcements	[-1, 1]	19.1%	15.22	***
Model 3	CEO stock option awards	[-10, 10]	1.1%	1.97	**
	Dividend announcements	[-1, 1]	0.5%	0.86	
	Earnings announcements	[-1, 1]	20.0%	15.92	***
Model 4	CEO stock option awards	[-5, 50]	-0.7%	-3.63	***
	Dividend announcements	[-1, 1]	1.8%	1.58	
	Earnings announcements	[-1, 1]	19.9%	15.80	***

*** Significant at 1% level

** Significant at 5% level