

How stockholders view option repricing: Evidence from ‘6 and 1’ option exchanges

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Abstract

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JEL classification: G30, G32, J33, J38

Keywords: Option repricing, employee stock options, option based compensation

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1. Introduction

Resetting the terms of employee stock option holdings (or option repricing) generally follows a steep decline in stock price. In recent years however, there has been a marked decline in repricing activity despite significant declines in the market. Several papers document that in lieu of repricing, firms have started making refresher grants to employees holding underwater options (Ittner, Lambert, and Larker (2003), Murphy (2003), Hall and Knox (2005), Chidambaran and Prabhala (2004)). Chidambaran and Prabhala (2004) document that repricing costs are modest, 72% of repriced options accrue to non-executive employees, firms generally grant fewer options than are cancelled, and often restart the vesting period. They conclude that making refresher grants is inferior to repricing, benefits neither stockholders nor employees, and is an example of governance gone awry.

The decline in repricing activity is arguably a consequence of intense criticism of the practice from a variety of sources. It has been suggested that repricing is antithetical to the whole idea of incentive creation, and is designed to benefit corporate employees at the expense of the firm's stockholders (Reda and Reifler (1998), Reingold (1998), and Schellhardt (1999)). Perhaps responding to such criticism, the FASB in 1998 started requiring repricing firms to recognize the estimated value of repriced grants as an expense, leading to a sharp decline in traditional repricings (Carter and Lynch (2003)). Voting advisories issued by Institutional Shareholder Services also recommend voting against repricings, and in 2003 the New York Stock Exchange started requiring listed firms to seek

shareholder approval before initiating repricings. As documented in Chidambaran and Prabhala (2004), the number of repricings fell precipitously after 1998, and has become almost non-existent today.

The argument on the other side is that repricing is necessary to maintain and create incentives to perform, and is important for employee retention. The academic literature has documented that repricing is consistent with efforts at improving incentives (Acharya, John, and Sundaram (2000), Brenner, Sundaram, and Yermack (2000), Stern (2000), Carter and Lynch (2001), Chidambaran and Prabhala (2003), Chen (2004)) and reducing employee turnover (Kole (1997), Core and Guay (2001), Carter and Lynch (2004), Oyer and Schaefer (2005)).

In this paper I provide evidence on how stockholders view the repricing of underwater employee stock option holdings. While the literature has documented that repricing is consistent with efforts at improving incentives and reducing employee turnover, the reality is that such benefits are achieved at some cost to the firm's stockholders. Since repricing in any form replaces underwater options with options that are at-the-money, the practice can be thought of as providing eligible employees a 'raise' that comes out of the stockholders' pocket. The net impact of repricing employee option holdings on a firm's stockholders is thus an empirical issue, and one that I address in this paper.

The paper contributes to the literature in two ways. First, I document the impact of repricing announcements on the price of a firm's stock. If critics of repricing underwater option holdings are correct and repricing works to benefit corporate employees at the

expense of stockholders, one can expect to observe a negative price response to such announcements. On the other hand, improved incentives and declines in employee turnover following repricing can be expected to enhance corporate performance, and these benefits should be priced into the stock at the time of the repricing announcement. An examination of the stock price response to repricing announcements thus provides an excellent setting in which to examine whether or not repricing employee holdings of underwater options works to the benefit or the detriment of corporate stockholders.

Second, I use a set of explanatory variables to examine the extent to which the observed price response is correlated with the firm's growth prospects, its level of employee turnover, availability of financing, and the quality of corporate governance. In addition, I explore possible relationships between the observed price response and characteristics of a firm's existing employee stock option (ESO) program, and whether or not executives and board members are eligible to participate in the option exchange.

My empirical work is based on a sample of 80 firms that announced '6 and 1' option exchange programs over the years 2000 through 2004. This variant of the traditional approach to repricing ESOs has become popular in the last several years, largely due to a change in the accounting treatment of option expenses in 1998, when the FASB ruled that firms which repriced ESOs would have to recognize an expense equal to the estimated value of the repriced options. However, no expense must be recognized if the firm first cancels outstanding out-of-the-money options, and then makes new option grants at least six months and one day after the cancellation date. This favorable accounting treatment of so called '6 and 1' option exchange programs led to a steep decline in traditional repricings

and increases in the number of firms that followed the ‘6 and 1’ approach to repricing ESOs.

From the perspective of this paper, ‘6 and 1’ option exchanges have two advantages over a sample of traditional repricings. First, ‘6 and 1’ exchanges are often announced at the time of Board approval, making it possible to do an analysis of the stockholder’s view of option repricing. Such analysis is not possible in the traditional approach to repricing, because the relevant information is made public only in proxy filings which generally occur at different points in time after the repricing event.

Second, several papers report that managers time option grants and option repricing to precede ‘good news’, and that repricing firms experience price increases in the period following the repricing date (Callaghan, Saly and Subramaniam (2002), Chauvin and Shenoy (2001), Aboody and Kasznik (2000), and Yermack (1997)). Such managerial timing can make it difficult to interpret the findings of an event study on repricing announcements, because a positive price response could in principle reflect either a reaction to the repricing news or an expectation that managers expect price to increase in the near-term.¹

In ‘6 and 1’ exchanges however, the managerial propensity to time the repricing to precede good news is minimized, because the exercise price for the new options is set at least six months and one day after the date when old options are cancelled. The market’s expectation for near-term price changes is thus likely to be non-positive at best, and work

¹ Heron and Lie (2005) examine the price behavior around option grants before and after August 29, 2002, when the SEC started requiring firms to report option grants within 2 days, and find that the price pattern is much weaker after the new reporting requirement and non-existent for firms that report option grants within

to bias downwards the observed price reaction to the '6 and 1' exchange announcement. The price reaction to announcements of '6 and 1' option exchanges thus provide a conservative estimate of the incremental value that investors believe will be created by the repricing activity.²

Consistent with Carter and Lynch (2004a) I find that firms announcing '6 and 1' option exchange programs are predominantly in the high-technology sector, are relatively small, and are facing financial stress (declining stock price, operating losses, and negative retained earnings). They also have relatively high employee turnover and large values of market-to-book ratios, but have experienced poor stock price performance in the period preceding the repricing announcement. These data are consistent with the proposition that repricing ESOs is designed to reduce employee turnover and improve incentives in the face of financial stress, so that the firm's growth potential may be realized.

I find that repricing announcements generate a positive price response on average; however, the observed price response is positive for only 51 percent of the sample firms, indicating that this news is not positively received by stockholders of a large proportion of the sample firms. My cross-sectional analysis reveals several interesting relationships. First, the observed price reaction is increasing in the firm's Tobin' Q ratio, the level of

one day of the grant date. They conclude that the abnormal price pattern found in earlier studies is attributable to backdating of option grant dates.

² Carter and Lynch (2004a) find no evidence of stock price declines (on average) in the period between option cancellation and the new grant date. In contrast, Ciccotello, Grant and Wilder (2005) examine a sample of '6 and 1' option exchanges in 2001, and find a 6-month market adjusted cumulative abnormal return (CAR) of -16% for firms that included officers and directors in the exchange. Given that these are relatively small firms, I use the equally-weighted market index and find a market adjusted CAR of 0.09% for 120 trading days following the announcement. In addition, the CAR is +5.27% (-0.13%) for firms that include (exclude) officers and directors in the option exchange. However, for the sub-set of 19 firms with below median values of board and executive ownership and above median percentages of insider directors,

employee turnover in the year preceding the repricing announcement, and the extent to which existing option holdings are out-of-the-money. These findings confirm the intuitive expectation that stockholders of cash constrained firms that have good growth prospects but currently have ESOs that are deep underwater and where employee turnover is high view repricing as a value enhancing change in compensation policy. Second, I find that option exchanges that exclude board members and senior executives generate a significantly larger price response, suggesting that stockholders believe employee turnover, as opposed to option-based incentives for executives and board members, to be the critical problem at these firms. Third, I find that the price reaction is increasing in board and executive equity holdings, and in the degree of board independence, indicating that option exchanges enhance value only at firms with effective equity based incentives and monitoring by the board of directors. Finally, an analysis of various sub-samples of firms yields no case in which the option exchange announcement yields a significant negative price reaction on average.

Given the timing differences between ‘6 and 1’ exchanges versus ‘traditional’ repricings, a natural question is the extent to which findings from a sample of ‘6 and 1’ exchanges can be generalized across different types of ESO repricing. While it is impossible to answer this question definitively, it seems evident that agency related concerns are potentially greater in ‘6 and 1’ exchanges than in traditional repricings, because in the former management has an incentive to take actions that lead to lower stock prices in the period before new options are granted. Since the price reaction to the option

the post-announcement CAR is -21%, confirming the intuition that investor are unlikely to expect significant price increases in the period following the announcement of the option exchange.

exchange announcement will reflect this (negative) possibility, a finding that stockholders respond positively to ‘6 and 1’ exchanges can be used to infer that a comparable event study on traditional repricing announcements, if one could be designed, would yield stockholder gains of at least an equal magnitude. Consistent with this expectation, Grein, Hand, and Klassen (2003) report a statistically significant abnormal return of 6.7% for a sample of Canadian firms that made ESO repricing announcements over the years 1994-2001.³

The rest of the paper is organized as follows. The next section contains a brief review of the literature on repricing ESOs and outlines the main hypotheses tested in the paper. Sample characteristics and details of the empirical methodology are contained in section 3, followed by a description of the empirical findings. The last section contains concluding comments.

2. Literature and testable hypotheses

While critics of repricing ESOs argue that replacing underwater options with new options that are at-the-money should reduce stockholder wealth, several recent papers suggest otherwise. Acharya, John, and Sundaram (2000) present a two-period principle-agent model that captures the impact of information revelation in the interim period between the inception and culmination of a compensation contract. They find that a

³ Given that the sample used by Grein, Hand, and Klassen (2003) represents traditional repricings, the observed price reaction may reflect the effects of both repricing and an expectation that stock price will increase in the future. While this makes it difficult to determine what proportion of the observed price reaction reflects the repricing effect, their finding of a large positive price reaction is consistent with investors taking a positive view of the firm’s repricing activity. In addition, Kato et al. (2005) find a significant price response of approximately 2% to announcements of employee stock option grants in Japan, confirming that stockholders have a positive view of option-based compensation. While U.S. and Japanese firms differ in numerous ways, the incentive properties of option-based compensation would

flexible policy that allows for "reincantivization" in response to new information is almost always superior to a policy of pre-commitment, which rules out resetting option terms.

Chen (2004) provides an empirical analysis of firms that restrict repricing compared with firms that do not. He finds that maintaining flexibility is better for firms with better internal governance, more powerful stock-based incentives, and less stockholder scrutiny. He also finds that firms that restrict repricing face higher executive turnover following price declines, but award unusually large numbers of new options. These findings are consistent with the argument that repricing reduces costs arising from executive turnover.

Chidambaran and Prabhala (2003) examine a sample of firms that repriced their executive stock options, and find no evidence that repricing reflects managerial entrenchment or ineffective governance. Consistent with Carter and Lynch (2001), they find that repricers tend to be smaller, younger, rapidly growing firms that experience a shock to growth and profit, and are concentrated in the technology, trade, and service sectors. These firms also have smaller boards and relatively high CEO turnover rates, but 40% of the sample firms exclude the CEO in the repricing; firms that include the latter in the repricing experience lower CEO turnover following the repricing. Carter and Lynch (2001) also report that the likelihood of repricing increases as options become more out-of-the-money, and find no evidence that repricing is related to agency problems. The findings of these papers support the conclusion that repricing is designed to restore incentives and

appear to be similar across counties. Consequently, the finding that option grants elicit a positive price response suggests that investors should also have a favorable view of repricing underwater options.

reduce turnover, and are not a consequence of agency problems or poor monitoring at repricing firms.

Brenner, Sundaram, and Yermack (2000) and Chance, Kumar, and Todd (2000) report that repricing firms reduce strike prices by an average of 40%; option maturity is also extended. Further, while repricing has only a small impact on ex-ante option values, the ex-post gains can be substantial; the latter is consistent with the restoring incentives argument for repricing. Consistent with Carter and Lynch (2001), repricing is found to be negatively related to firm performance.

Carter and Lynch (2004) examine the repricing-employee turnover relationship using a sample of firms that repriced ESOs in 1998 and a set of comparable firms with out-of-the-money options that did not reprice. They find repricing reduces overall employee turnover, but not executive turnover. Together with Kole (1997), and Oyer and Schaffer (2005), these findings provide support for the proposition that repricing ESOs helps reduce the costs associated with high levels of employee turnover in the face of declining stock prices.

Carter and Lynch (2004a) provide a comparative analysis of 168 firms offering '6 and 1' option exchanges and 149 firms that repriced stock options over the period January 1, 2000 through June 30, 2002. They report that firms choose the '6 and 1' route if they are more concerned about expense recognition, have better corporate governance and their managers have negative expectations about future stock prices. Firms that choose '6 and 1' exchanges over this time period are significantly larger than those using traditional repricing and less likely to have reported losses. They also find no evidence that managers

who choose '6 and 1' exchanges engage in activities designed to lower stock price prior to granting replacement options.

2.1 Testable Hypotheses

The literature suggests that repricers tend to be small, high growth firms that have experienced a decline in profitability and a substantial fall in their stock price. Repricing underwater options held by employees is designed to improve incentives and also reduce turnover. I use these findings to develop five testable hypotheses regarding the relationship between a set of firm characteristics and the expected impact of repricing announcements on stockholder wealth; these are outlined next.

Growth opportunities

Repricing ESOs should improve incentives (Acharya, John, and Sundaram (2000), Core and Guay (2001), Chen (2004)), increasing the likelihood of stockholders realizing the potential benefits from growth opportunities. I expect a positive relationship between the price response and a measure of the firm's growth opportunities.

Employee turnover

Repricing ESOs should reduce employee turnover, which reduces associated costs and (perhaps) improves morale (Kole (1997), Core and Guay (2001), Chidambaran and Prabhala (2003), Carter and Lynch (2004), Oyer (2004), Oyer and Schaefer (2005)). Since turnover related costs should be increasing in the amount of turnover, I expect a positive relationship between the price response and a measure of employee turnover prior to the repricing announcement.

Financing availability

Repricers tend to be firms that have good growth opportunities but face financing constraints (Carter and Lynch (2001), Core and Guay (2001), Chidambaran and Prabhala (2003)). Repricing generally follows a steep decline in stock price, making it difficult to access the equity market for external funds; high levels of existing debt should make external financing even more difficult to obtain. Since availability of financing is important for firm survival and growth, firms with low leverage can be expected to benefit more from improved incentives and reduced employee turnover. In addition a higher operating margin increases the likelihood that the firm will be able to generate internal funds to meet future financing requirements. I therefore expect a negative relationship between the price reaction and the firm's pre-announcement level of debt, and a positive relationship between the price reaction and the firm's operating margin.

Governance and incentives

Brenner, Sundaram, and Yermack (2000) and Chance, Kumar, and Todd (2000) find that repricing firms in their samples have more inside directors, and having executives on the compensation committee increases the likelihood of repricing. In a much larger sample, Carter and Lynch (2001) find no relationship between proxies for governance quality and the likelihood of repricing. I assume that firms with better governance and managerial incentives are less likely to implement policies that are detrimental to stockholder interests, and expect a positive relationship between the price response and proxies for the quality of internal governance and managerial incentives.

Eligibility constraints

Option grants to non-executive employees are more likely to be about reducing turnover than about incentives, particularly in cash constrained firms (Yermack (1995), Core and Guay (2001), Oyer and Schaefer (2005)). Further, Carter and Lynch (2004) find that repricing leads to declines in employee, but not executive turnover. Given these findings, and also that repricing executive option holdings can raise serious agency issues in investors' minds, I expect a negative relationship between the price reaction and board members/executives being eligible to participate in the option exchange.

I utilize an event study framework to conduct statistical tests of these hypotheses. The sampling procedure, summary statistics on the sample firms, and details of the empirical methodology are presented in the next section, followed by the empirical findings.

3. Sample characteristics and empirical methodology

I search *Lexis/Nexis* using variants of the keywords “employee option exchange program” to identify firms that announced plans to exchange underwater option holdings for new options. This search yielded a total of 103 option exchange announcements over the years 2000-2004. I dropped 11 firms where cancelled options were to be exchanged for restricted stock or cash, and 10 firms for which the option exchange announcement coincided with other news relating to earnings and/or restructuring plans. One additional firm was dropped because stock price data are not available in the CRSP files and one

because the announcement occurred on Sept 17, 2001.⁴ This left a sample of 80 option exchange announcements, and my empirical work is based on this sample.⁵

As shown in Panel A of Table 1, there is a jump in the number of option exchange announcements following the steep market decline in the year 2000. My sample contains one announcement in 2000, followed by 32 (30) announcements in 2001 and 2002, 17 in 2003 and 2 in 2004. The industry distribution of announcing firms, given in Panel B of Table 1, is similar to that reported in Carter and Lynch (2004a); the most frequently represented industries are Business Services (SIC code 73) and Electrical & Electronic Equipment (SIC code 36), which together constitute over 75 percent of the sample firms.

I use the CRSP and Compustat files, and SEC filings (proxy, 10-K, 20-F) for the end of the fiscal year preceding the option exchange announcement to obtain information on firm characteristics; in cases where a filing is not available I use the filing from the previous fiscal year to obtain the required information. I also use tender offer filings detailing the proposed option exchange, but only in cases where the filing is made no later than the date of the wire report.

Summary statistics on a variety of sample characteristics are presented in Table 2; Panel A contains information on several financial characteristics and employee turnover.

⁴ I exclude daily returns for the period September 1 through September 30, 2001 from the analysis.

⁵ Carter and Lynch (2004a) use *LexisNexis* and SEC filings to obtain a sample 168 '6 and 1' option exchanges over the period January 1, 2000 through June 30, 2002; they note that a wire announcement could be identified for only 47 of these firms. Given that the empirical methodology used in this paper is an event study, I restrict my sample to cases in which the firm announced board approval of an option exchange program and the announcement was reported over the news wires. In addition, my analysis only utilizes information that is publicly available at the time of the public announcement of the exchange offer; information contained in tender offer filings with the SEC is used only in 41 cases where the filing date is the same as the announcement date (n=40) or occurs on the day before the wire story (n=1). Of the remaining 39 firms, 29 made the tender offer filing at least several days after the wire story, and no tender offer filing could be found for 10 firms.

For several variables the median value for all firms in the announcing firm's industry (defined using the two-digit SIC code) are also reported in Panel A. Firms announcing '6 and 1' option exchanges are relatively small on average (average market value of equity \$2,713 million, average total assets \$1,607 million), but are larger than the median sized firm in their industry. Of the 80 sample firms, 63 (or 78.75 percent) have negative retained earnings, and sample firms' retained earnings are significantly smaller than the industry median. Leverage, measured as the ratio of total debt to the market value of equity, is 0.80 on average compared to an industry median of 0.45; the difference is not statistically significant. Of the 80 sample firms, 52 (or 65 percent) experienced operating losses in the year preceding the option exchange announcement; sample firms have operating margins that are significantly lower than the industry median.

I use a simple measure of Tobin's Q, computed as [(market value of equity + book value of debt) / (book value of assets)] to proxy for a firm's growth opportunities.⁶ The average value of this ratio is 2.04 for the sample firms compared to an industry median of 1.66; the difference in Q-ratios is not statistically significant, and 70% of the sample firms have a Q-ratio greater than 1.

Following Carter and Lynch (2004) I use the sum of options forfeited or cancelled, or that expired in the fiscal year preceding the exchange announcement as a proxy for employee turnover; this measure is scaled by the number of options outstanding at the start of the fiscal year preceding the announcement. This measure of employee turnover has a

⁶ Tobin's Q has been widely used to proxy for firm value and growth opportunities (see for example Bebchuk and Cohen (2005), Gompers, Ishii, and Metrick (2003), Holderness, Kroszner, and Sheehan (1999), Yermack (1996), and Denis (1994). Chung and Pruitt (1994) report that at least 96.6% of the variability in Tobin's Q (based on Lindenberg and Ross (1981)) is explained by this simple measure of Q.

mean value of 0.19, and is over 50% larger than the average turnover of 0.12 reported by Carter and Lynch (2004). This difference suggests that '6 and 1' option exchanges in recent years follow substantially higher levels of employee turnover than option repricing did in 1998. Finally, on average the firm's stock price on day $t = -5$ (relative to the wire date $t = 0$) was 66.68% lower than the high over the previous 250 days; 79 of the 80 sample firms experienced price declines.

These data confirm that '6 and 1' option exchanges are predominantly made by firms experiencing financial stress; a declining stock price and high leverage, combined with continuing operating losses suggests that these are firms facing a high probability of financial distress. Exchanging underwater options for new, at-the-money options is a mechanism by which employees can be given a "raise" with high upside potential, without creating an immediate cash outflow that the firm cannot afford. The fact that a large proportion of repricing firms have a Q-ratio greater than 1 suggests that stockholders may in fact approve of the repricing activity, to the extent that it provides these firms with an opportunity to retain valued employees and be able to benefit from growth opportunities.

Summary statistics on executive and board security ownership and several board characteristics are presented in Panel B of Table 2. Board members and corporate executives own an average of 20.46% of the firm's common stock. The average board size is 7.19, and 25% of board members are insiders. In 38 of the 80 sample firms the CEO is also chairman of the board.

Information on characteristics of the firm's existing option based compensation is presented in Panel C of Table 2. I use the variable *Option Use* to proxy for the extent to

which firms use option based compensation, where *Option Use* is measured as the number of options held by employees as a percentage of outstanding shares; this variable is estimated at the end of the fiscal year preceding the option exchange announcement. *Option Use* has a mean value of 0.23, confirming that repricing firms make substantial use of option grants as an element of employee compensation. The variable *OOM* (out-of-the-money) serves as a proxy for the magnitude by which the firm's outstanding options are out-of-the-money; *OOM* is computed as the weighted average exercise price of all outstanding options less the firm's stock price, divided by the weighted average exercise price. In computing *OOM* I use the stock price five days before the option exchange announcement and the weighted average exercise price at the end of the fiscal year preceding the announcement. This variable has a mean value of 61%, and the weighted average exercise price is greater than the stock price for 92.5% of the sample firms.

Since some firms did not specify eligibility details and the swap ratio of new options to old options in the wire story, and did not file a tender offer with the SEC until a later date, information on these variables is available for only a sub-set of the sample firms. As shown in Panel D of Table 2, 35 of the 80 firms announced plans to exchange each cancelled option for one new option, while 40 firms planned an exchange ratio of less than one. Board members and corporate executives are eligible to participate in the exchange program in 25 of the announced plans.⁷

⁷ Summary statistics on several sample characteristics in Carter and Lynch (2004a) include average total assets: \$1,681million, Tobin's Q: 2.17, proportion of firms with negative retained earnings: 77.2, board size: 7.35, percentage of board members who are insiders: 22.8 and percentage of shares held by directors and executives: 22. These data confirm that firms in my sample are very similar on average to those examined by Carter and Lynch (2004a), confirming that the sub-set of firms that publicly announced an option exchange program is not materially different from the larger sample of firms that executed '6 and 1' programs but did not make a public announcement.

Daily abnormal returns are estimated using the methodology described in Dodd and Warner (1983). I designate the date of the wire report as day $t = 0$ in event time, and treat the two-day window $t = (0, 1)$ as the announcement period. In one instance the firm made the tender offer filing on the day before the wire story; in this case I specify the filing date as the event date. Market model coefficients are estimated using daily returns data for the 200-day period $t = (-210, -11)$ in event time, with the CRSP equally weighted index serving as the market proxy. Daily abnormal returns are averaged in event time to obtain average abnormal returns (AAR) for the period $t = (-10, +10)$, and cumulative average abnormal returns (CAAR) are obtained by summing the AARs over various intervals. Test statistics are based on standardized values of daily abnormal returns, and are estimated using the procedure described in the literature.

4. Empirical results

4.1 Event study results

Event study findings for the full sample of 80 announcements are given in Panel A of Table 3. CAAR values for the pre-announcement period $t = (-10, -1)$ and the post-announcement window $t = (+2, +10)$ are both positive, but neither is statistically significant. The AAR is -0.17% on day $t = 0$, and 2.10% on day $t = +1$; the latter is statistically significant at the 1 percent level (t-statistic 2.66). The CAAR for the two-day announcement period $t = (0, 1)$ is 1.94%, and is statistically significant at the 10 percent level (t-statistic 1.78); however, the observed two-day CAAR is positive for 41 (or just over 50%) of the sample firms. These findings confirm that while the announcement of an option exchange program generates a non-negative price response on average, there is considerable dispersion

in the distribution of the two-day announcement period CAAR (-20.94% to 36.23%). The latter suggests the need for an analysis of the cross-section of estimated abnormal returns, and I report on this next.

As outlined in section 2, I hypothesize that repricing option grants may be well received by corporate stockholders if the firm has good growth prospects (high Tobin's Q), and if it helps alleviate problems caused by high employee turnover. The stockholder response to the repricing announcement may also be influenced by the incentive/governance characteristics of the firm, financing availability, the extent of options use by the firm, and/or by the structure of the exchange program. I first examine these possibilities by analyzing the price response in sub-samples of announcements, where median values of the variables are used to form sub-samples. The selected variables of interest are *Tobin's Q* , *Employee Turnover*, *Board & Executive Ownership*, *Percentage of Board Members who are Insiders*, *CEO is Chair*, *Board Size*, *Leverage*, *Operating Margin*, *Option Use*, *OOM*, *Board/Executives Eligible*, and *Equal Exchange*, and findings are presented in Panel B of Table 3. I also estimate cross-sectional regressions using the two-day announcement period abnormal returns as the dependant variable and combinations of this set of explanatory variables; regression findings are reported in section 4.2 of the paper.

Sub-sample event study findings indicate that the price response is positive and statistically significant (not significant) for firms that have high (low) values of *Tobin's Q* and *Employee Turnover*, but the differences in abnormal returns between high and low sub-samples are not statistically significant. It is noteworthy that observed abnormal returns are not negative in either the low *Tobin's Q* or the low *Employee Turnover* sub-samples,

suggesting that while some firms may not gain from repricing underwater ESOs, neither do they experience significant stockholder losses at the repricing announcement.

CAAR values for sub-sample of firms with high versus low values of *Board Size*, *Percentage of Board Members who are Insiders*, and whether or not the *CEO is Chair* are of comparable magnitude and differences between the sub-samples are not statistically significant. It is interesting to note that the CAAR for the sub-sample with *low* levels of *Board and Executive Ownership* is statistically significant; the difference between the sub-samples is not significant.⁸

I use the variables *Leverage* and *Operating Margin* as proxies for financing available, where low *Leverage* and high *Operating Margin* imply greater levels of availability. The CAAR for firms with low debt levels is positive and statistically significant, but the difference in CAAR values between the two sub-samples is not significant. Sub-samples based on high and low values of *Operating Margin* yield comparable CAARs, and the difference is not statistically significant.

Observed abnormal returns are of comparable magnitude for firms with high (low) values of *Option Use* and *OOM*, and differences between the sub-samples are not statistically significant; the only sub-sample that displays a statistically significant CAAR is for firms with low levels of *Option Use*. Option exchange announcements where only non-executive employees are eligible generate a positive and statistically significant price response, and the difference between these two sub-samples is statistically significant. This finding suggests that investors do not believe the watering down of option-based incentives

⁸ I report sub-sample CAAR values for *Board Size* greater and less than 7 because 24 of the sample firms have 7 members on their board. *Board Size* is greater (less) than 7 for 27 (29) firms.

at the board and executive levels is the critical problem facing these firms. Finally, differences in the exchange ratio do not seem to generate a differential price response.

The above findings support the hypothesis that repricing option grants is positively received by stockholders if the repricing firm has better growth prospects, high employee turnover, and relatively low leverage. The evidence also suggests that stockholders may be more receptive to repricing option grants to non-executive employees relative to those held by corporate officers and directors.

4.2 *Cross-sectional findings*

In this section I report on findings from a series of regressions using the observed two-day announcement period abnormal return to '6 and 1' option repricing announcements as the dependant variable. The regressions control for industry clustering and significance statistics are based on robust standard errors (White (1980)). The explanatory variables include proxies for the firm's growth opportunities (*Tobin's Q*), turnover (*Employee Turnover*), the extent to which outstanding options are out-of-the-money (*OOM*), measures of financing availability (*Operating margin* and *Leverage*), the quality of equity based incentives and governance (*Board & Executive ownership* and *Percent outsiders on Board*), and a dummy variable (*Board/Executives eligible*) that is equal to 1 if executives and board members are eligible to participate in the option exchange and is zero otherwise. Summary statistics on each control variable are presented earlier (see Table 2), and regression results are given in Table 4; each column in the table contains results from one particular specification.⁹

⁹ The variables *Option Use*, *CEO is Chair*, *Equal Exchange*, and (*Board & Executive ownership*)² yield coefficients that are not statistically significant in any regression and are hence not reported in Table 4. I

The initial regression utilizes *Firm Size*, *Tobin's Q*, and *Employee Turnover* as explanatory variables, and regression results are given in the first column of Table 4. As expected, both *Tobin's Q* and *Employee Turnover* have positive and statistically significant coefficients, confirming that stockholders view the repricing of ESOs as adding more value for firms that have better growth prospects and are experiencing high levels of employee turnover. These findings support the hypothesis that repricing ESOs is perceived by stockholders as a mechanism to improve incentives and reduce turnover, so that the firm can improve the odds of actually realizing wealth gains from its growth opportunities.

I examine the possible influence of characteristics of the firm's existing ESO program and level of financing available on the observed price response by starting with the initial regression and incorporating three additional explanatory variables – *OOM*, *Leverage*, and *Operating Margin*. Findings from this regression are reported in column 2 of Table 4. *Tobin's Q* and *Employee Turnover* continue to have positive and statistically significant coefficients. *OOM* has the expected positive coefficient and is statistically significant; this finding is intuitively appealing, since incentive problems are likely to increase as existing ESOs become more out-of-the-money. The finding confirms that the worse the option based incentives situation at a firm, the larger is the benefit from restoring incentives, and the greater the gain investors expect to follow from the option exchange. The coefficients for *Operating Margin* and *Leverage* have the expected signs, and the former is statistically significant at the 10% level. The substantially larger coefficients for *Tobin's Q*, *Employee Turnover*, and *OOM* relative to *Operating margin* and *Leverage* indicate that the former can

do not include *Board Size* in the regressions because as noted earlier, almost a third of the sample firms have board size equal to 7.

be thought of as the primary drivers of the observed price response, and the proxies for financing availability are of secondary importance at best.

To examine the influence of managerial incentives, governance quality, and board/executive eligibility on the observed price response I start with the specification described in column 2, and add three additional explanatory variable – *Board & Executive ownership*, *Percent outsiders on Board*, and *Board/Executives eligible*. Findings, reported in column 3 of Table 4, are based on a sample of 70 firms because for 10 firms eligibility information is not available at the time of the exchange announcement.

As seen in column 3 of Table 4, *Tobin's Q* and *OOM* continue to display positive and statistically significant coefficients. The coefficient for *Employee Turnover* is positive but is no longer statistically significant (although using a dummy variable that equals 1 for above median values of *Employee Turnover* yields a positive and statistically significant coefficient in this regression). The variables *Board & Executive ownership* and *Percent outsiders on Board* have the expected positive coefficients and are statistically significant at better than the 5% level, confirming that investors value the incentive and governance advantages provided by higher levels of insider ownership and a more independent board. The variable *Board/Executives eligible* has a negative and statistically significant coefficient, indicating that the price response to the option exchange announcement is larger in cases where executives and board members are not eligible to participate in the exchange.

The final reported regression utilizes a more parsimonious specification. I drop the two variables with weak explanatory power (*Operating margin* and *Leverage*) and include an interaction variable (*Board & Executive ownership*) * (*Percent outsiders on Board*) which

is larger for firms that have both higher levels of board and executive ownership and a more independent board. Findings, reported in column 4 of Table 4, yield positive and statistically significant coefficients for *Tobin's Q*, *Employee Turnover*, and *OOM*, as well as for the interaction proxy for incentive/governance structure. The coefficient for *Board/Executives eligible* is again negative and statistically significant.

4.2.1 Discussion

The findings reported in Table 4 permit the following conclusions. First, the positive relationship between *Employee Turnover* and the price response indicates that investors regard '6 and 1' option exchanges as mechanisms designed to reduce employee turnover. The positive coefficient for *OOM* also supports this view, since options that are deep underwater are unlikely to create any meaningful incentive to stay at the firm, much less to perform. Given that stockholders must bear the cost of the option exchange, it is logical that the price response should be increasing in the potential value that may be created by reduced turnover; the positive coefficient for *Tobin's Q* confirms this expectation.

The statistically significant coefficient for *Board/Executives eligible* is also informative, in that it confirms an investor preference for restoring option-based incentives for non-executive employees rather than executives and board members. When viewed in conjunction with the finding on employee turnover, this result suggests that investors either do not believe that these firms have significant problems with regard to option-based managerial incentives, or that including executives and board members in the option exchange adds value on the margin. The problem, it appears, is viewed as critical for employees lower down in the corporate hierarchy. This view is also consistent with Carter

and Lynch (2004), who find that option repricing leads to a decline in overall employee turnover, but not in executive turnover.

Finally, the strong positive relationship between the price response and measures of board and executive ownership and board independence confirm the expectation that investors view agency problems and governance quality as being extremely important in this particular approach to option repricing. This finding is reassuring, given the agency problems associated with ‘6 and 1’ option exchanges.¹⁰

5. Conclusions

Critics of repricing employee stock option holdings have argued that this practice is antithetical to the whole idea of incentive creation, and is designed to generate a wealth transfer from stockholders to corporate employees. In this paper I report on findings from a direct test of this hypothesis, using a sample of 80 announcements of ‘6 and 1’ option exchange programs over the years 2000 through 2004.

I find that ‘6 and 1’ option exchange announcements generate a positive price response on average, indicating that stockholders view repricing as an effort at improving corporate performance. Additional analysis reveals that the price response is increasing in the firm’s growth opportunities, employee turnover in the fiscal year preceding the repricing

¹⁰ Estimating the regressions using industry-adjusted values of *Firm Size*, *Tobin’s Q*, *Operating margin*, and *Leverage* (where ‘industry-adjusted’ means deducting the industry median from the corresponding value for the sample firm) yields findings that are virtually identical to those reported in Table 4, with the exception that the coefficients for *OOM* and *Operating margin* are not statistically significant in specifications 2 and 3. As noted in Table 2, median values of total assets and market value for sample firms are between three and four times the industry median. Consequently, the correlations between industry-adjusted and firm values are all close to 1. In addition to being the set of relatively large firms in their industry, sample firms are also clustered by industry sector, and over 76% come from two industry groups (see Panel B of Table 1). Since sample firms are thus relatively homogeneous within their industry groups (note that *Firm Size* is not significant in any of the regressions), and the regressions control for industry clustering, using firm instead of industry-adjusted values of the explanatory variables seems appropriate.

announcement, and degree to which outstanding options are out-of-the-money. These findings confirm that investors regard such repricing activity as an effort at restoring incentives and reducing turnover, so that they can improve the odds of benefiting from the firm's growth opportunities.

The price reaction is found to increase with the level of board and executive ownership and the proportions of outside directors on the board, confirming that investors regard managerial incentives and board independence to be important in such option exchanges. Finally, I find that the price reaction is significantly larger in cases where corporate directors and executives are not allowed to participate in the option exchange.

My findings are broadly supportive of the findings reported in the literature on option repricing, which documents that repricing employee holdings of underwater stock options constitutes an effort at improving performance incentives and reducing employee turnover, thus adding to stockholder value. Finally, my findings suggest that criticism of repricing from institutional investors, governance advocates, and others appears to be misplaced.

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Table 1

This table contains information on the time distribution (Panel A) and industry classification (Panel B) for 80 announcements of '6 and 1' option exchange programs over the years 2000 through 2004.

Panel A: Time distribution of announcements

<u>Year</u>	<u># announcements</u>
2000	1
2001	31
2002	29
2003	17
2004	2

80

Panel B: Industry distribution of announcements

<u>2-digit SIC code</u>	<u>Industry description</u>	<u># of announcements</u>
73	Business services	39 (48.75%)
36	Electrical & Electronic equipment	22 (27.5%)
48	Communications	5 (6.25%)
35	Industrial machinery & equipment	4 (5.00%)
38	Measurement instruments	3 (3.75%)
28	Chemicals & allied products	2 (2.50%)
	Others	6 (7.50%)

Total	80 (100%)
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Table 2

This table presents summary statistics on a variety of firm and ESO characteristics for a sample of 80 announcements of '6 and 1' option exchange programs over the years 2000 through 2004. Information on financial characteristics and employee turnover at the announcing firm is presented in Panel A of the table. I use data for the end of the fiscal year preceding the announcement to obtain information on market value of equity, total assets, retained earnings, operating margin, and total debt. Leverage is estimated as the ratio of total debt to the market value of equity. Employee turnover is estimated as the sum of options that are cancelled, forfeited or expire in the fiscal year preceding the announcement, divided by the total number of options outstanding at the start of that fiscal year. The % price change is the percentage difference between the stock price on day $t = (-5)$ in event time and the firm's 52-week high. Median values of selected variables for all firms in the same two-digit SIC code as the sample firms are obtained from COMPUSTAT; the number of firms in the two-digit industries range from 38 through 1,337, and have a mean of 533. Information on proxies for incentive and governance quality is contained in Panel B; data on these variables is obtained from the most recent proxy filing preceding the announcement date. Summary statistics on the firm's existing ESO program are given in Panel C, where Option Use is the number of ESOs outstanding at the end of the fiscal year preceding the announcement divided by the number of shares outstanding. OOM is a measure of the extent to which outstanding options are out-of-the-money, and is computed as the difference between the weighted average exercise price of all outstanding ESOs and the stock price 5 days prior to the announcement, divided by the weighted average exercise price. Panel D contains information on two characteristics of the announced option exchange program. Equal exchange distinguishes between whether or not each cancelled option will be exchanged for one new option, or less than one new option. Directors/Executives eligible distinguishes between plans according to eligibility of different employees. Information in Panel D is obtained from news reports of the exchange program and from tender offer filings made at the SEC; the latter are used if filed on the same day or the day before the wire report.

Table 2 (continued)

<u>Panel A: Financial Characteristics and Employee Turnover</u>				
	<i>Sample Firms</i>		<i>Industry</i>	<i>Firm-Industry</i>
	<u>Mean</u>	<u>Median</u>	<u>Median</u>	<u>Wilcoxon p-value</u>
MV (equity) (\$mm)	2,713	408	91	0.001
Total assets (\$mm)	1,607	360	130	0.001
Retained Earnings (\$mm)	-114	-73	-13	0.001
Leverage	0.80	0.27	0.45	0.135
Operating margin	-0.60	-0.13	-0.02	0.003
Market to Book	2.04	1.36	1.66	0.184
Employee Turnover	0.19	0.14		
% price change (t = -5 relative to 52-week high)	-66.68	-73.35		(Negative for 79 of the 80 firms)
<u>Panel B: Managerial Incentives and Governance Structure</u>				
	<u>Mean</u>	<u>Median</u>		
Director & Executive Ownership (%)	20.46	13.54		
Board size	7.19	7		
% inside directors	25	25		
CEO is Chair	38 (yes)	42 (no)		
<u>Panel C: Characteristics of Employee Option Holdings</u>				
	<u>Mean</u>	<u>Median</u>		
Option Use	0.23	0.21		
OOM (%)	61	68		(92.5% out-of-the-money)
<u>Panel D: Structure of the Option Exchange Program</u>				
Equal exchange	35 (yes)	40 (no)		
Board/Executives eligible	25 (yes)	45 (no)		

Table 3

This table contains event study findings for a sample of 80 firms that announced ‘6 and 1’ option exchange programs over the years 2000 through 2004. The day of the wire report is designated as day 0 in event time (except for one firm that made a tender offer filing the day before the wire report; for this firm I designate the filing date as day 0), and the two-day announcement period refers to days 0 and 1 in event time. Market model coefficients are estimated over the 200 day period $t = (-210, -11)$ in event time, using the equally weighted CRSP index. Full sample results are given in Panel A of the table. CAAR refers to the cumulative average abnormal return over the specified time periods in event time; associated t-statistics and the percentage of sample firms with positive abnormal returns are also reported in Panel A. Event study findings for various sub-samples of firms, along with associated t-statistics, are reported in Panel B of the table. The variables used for sub-sampling are described in Table 2. ***, **, and * refer to statistical significance at the 1 percent, 5 percent, and 10 percent levels (two-tailed tests).

Panel A: Full Sample Results

Window	CAAR (%)	t-statistic	% AR>0
-10, -1	1.48	+1.11	
0	-0.17	- 0.16	44
+1	2.10***	+2.66	59
0, +1	1.94*	+1.78	51
+2, +10	2.54	+1.03	

Panel B: Event Study Results for Different Sub-Samples

	CAAR (%)	t-statistic	Difference	t-statistic
TOBIN’S Q				
High	2.95**	2.17	2.03	1.29
Low	0.92	0.33		
EMPLOYEE TURNOVER				
High	3.62**	2.24	3.36	1.40
Low	0.26	0.26		

Table 3, Panel B (continued)

	CAAR (%)	t-statistic	Difference	t-statistic
BOARD PLUS EXECUTIVE OWNERSHIP				
High	1.54	0.67	-0.79	-0.81
Low	2.33*	1.83		
PERCENT INSIDERS ON BOARD				
High	1.72	0.89	-0.44	-0.53
Low	2.16	1.62		
CEO IS CHAIR				
No (n=38)	2.03	1.14	0.18	-0.11
Yes (n=42)	1.85	1.35		
BOARD SIZE				
>7	2.19	1.56	1.18	0.95
<7	1.01	0.25		
LEVERAGE				
High	0.83	0.29	-2.21	1.36
Low	3.04**	2.22		
OPERATING MARGIN				
High	2.31	1.37	0.75	0.16
Low	1.56	1.14		
OPTION USE				
Large	1.55	0.70	-0.77	-0.77
Small	2.32*	1.80		
OOM				
High	1.62	1.25	-0.63	-0.01
Low	2.25	1.26		
BOARD/EXECUTIVES ELIGIBLE				
Yes (n=25)	-0.71	-0.65	-4.21**	-1.98
No (n=45)	3.50**	2.44		
EQUAL EXCHANGE				
Yes (n=39)	2.03	1.49	0.45	0.49
No (n=41)	1.58	0.87		

Table 4

This table contains findings from ordinary least squares regression relating the price response to 80 announcements of '6 and 1' option exchanges over the years 2000 through 2004 to the set of explanatory variables described below. The regressions control for industry clustering of sample firms, and utilize robust standard errors (White (1980)). Unless otherwise noted, data for the end of the fiscal year preceding the announcement are used to construct these variables. *Firm Size* is the log of (total assets (\$mm)* 10^{-6}), *Tobin's Q* is estimated as [$\log(\text{market value of equity plus book value of debt})/(\text{book value of assets})$], and *Employee Turnover* is computed as the sum of employee options that expire, are cancelled or forfeited in the fiscal year preceding the announcement, divided by the total number of ESOs outstanding at the start of that fiscal year. *OOM* measures the extent to which outstanding ESOs are out-of-the-money, and is computed as the difference between the weighted average exercise price of outstanding options and the market price, divided by the weighted average exercise price; I use the stock price on day $t = -5$ relative to the announcement date in computing *OOM*. *Leverage* is the ratio of total debt to the market value of equity, and *Operating margin* is the ratio of operating income before depreciation to Sales. Data on *Board and Executive ownership* (percentage* 10^{-2}) and the *Percent outsiders on board* are obtained from proxy statements. *Board/Executives eligible* is a dummy variable that equals 1 if board members and/or executives are eligible to participate in the option exchange, and is zero otherwise. Information on *Board/Executives eligible* is obtained from wire reports of the exchange program and from tender offer filings (in cases where the filing and wire story coincide). T-statistics are contained in parenthesis below the parameter estimates, and ***, **, and * refer to statistical significance at the 1 percent, 5 percent, and 10 percent levels (two-tailed tests).

Table 4 (continued)

Column	[1]	[2]	[3]	[4]
Intercept	-0.025 (-0.74)	-0.023 (-0.59)	-0.087* (-2.19)	-0.013 (-0.34)
<i>Firm Size</i>	-0.001 (-0.44)	-0.000 (-0.12)	-0.000 (-0.07)	0.002 (0.27)
<i>Tobin's Q</i>	0.032*** (3.22)	0.027** (2.99)	0.029** (2.20)	0.029** (2.20)
<i>Employee Turnover</i>	0.105** (2.46)	0.084* (2.02)	0.098 (1.55)	0.087** (2.31)
<i>OOM</i>		0.029** (2.18)	0.019* (2.01)	0.024** (2.86)
<i>Operating margin</i>		0.003* (1.97)	0.002 (1.15)	
<i>Leverage</i>		-0.005 (-1.17)	-0.002 (-0.73)	
<i>Board & Executive ownership</i>			0.076** (2.55)	
<i>Percent outsiders on board</i>			0.090** (2.97)	
<i>(Board & Executive ownership) * (Percent outsiders on board)</i>				0.130** (2.26)
<i>Board/Executives eligible</i>			-0.045** (-2.47)	-0.047** (-2.55)
F-Statistic	16.75***	25.81***	81.04***	9.40***
R ²	0.0647	0.0785	0.1481	0.1505
Sample size	80	80	70	70