Sink or Swim: Firms' Responses to Underwater Options before and after the Accounting Change for Stock Option Repricing

Sudhakar Balachandran*, Mary Ellen Carter*, Luann J. Lynch¨

November 2002

Abstract

Using a sample of firms with underwater options in 1997 and a sample of firms with underwater options in 1999, we examine how firms respond to the presence of underwater executive stock options by altering executive compensation and whether those responses are different after a 1998 accounting change that discouraged stock option repricing. Altering compensation in response to underwater options is a controversial practice since it appears to reward poor performance. However, not responding poses risks for firms including increased turnover and lowered incentives. Prior to the accounting change, we find that repricing seems to be the primary response; we find no evidence that firms increase other forms of compensation in response to underwater options. After the accounting change, firms shift away from repricing stock options, consistent with accounting rules discouraging repricing, and shift towards awarding more cash-based compensation. Contrary to anecdotal evidence, we find no evidence of firms' using megagrants, "six month and a day repricings", or cashouts to address issues with underwater options, suggesting that these tactics may be more the exception than the rule. The results are consistent with a change in employee preferences towards the predictability of cash compensation over the uncertainty of stock options.

* Columbia University Graduate School of Business
¨ Darden Graduate School of Business, University of Virginia

Luann Lynch gratefully acknowledges the financial support of the University of Virginia Darden School Foundation. We thank Mike Kirschenheiter, Steve Penman, and Jake Thomas for their helpful comments and discussions. We also appreciate the helpful comments from Somnath Das, Tim Gray, Charlie Himmelberg and workshop participants at the 2002 American Accounting Association Management Accounting conference and Columbia University.

1. Introduction

Stock options have become an important part of executive compensation, and recent stock market declines have highlighted issues surrounding underwater stock options. In this study, we investigate changes in executive compensation in response to underwater stock options. Specifically, we examine (1) how firms respond to underwater executive stock options by altering executive compensation, and (2) whether those responses to underwater options are different after the change in accounting for stock option repricing in 1998. Evidence on these issues provides insight into how firms use compensation as a corporate governance mechanism and may provide insight for regulators as they reconsider the expensing of stock options on the financial statements.

Firms grant stock options to provide incentives that better align the interests of managers and shareholders. Firms also grant stock options to retain valued employees (Kole, 1997; Oyer and Schaefer, 2001). When the stock price falls below the exercise price of the stock options, the stock options are underwater and, as a result, may have diminished incentive and retention benefits.

Compensating executives for underwater options is a controversial practice (Lublin, 2001). Altering compensation in the presence of underwater options gives the appearance of rewarding poor performance. It involves recontracting with the executive and, thus, disrupts the alignment of pay and performance. As a result, firms may choose not to alter compensation in response to underwater options. On the other hand, there are several reasons why firms may choose to compensate executives for underwater options. First, executives may leave and the risk of executive turnover resulting from underwater options is increased as options become a larger component of executive compensation

and as some labor markets become increasingly competitive. Second, factors beyond the control of executives may drive the options underwater. If so, firms may want to insulate executives from those uncontrollable factors. Third, the desired incentive effects of options may be diminished when they are underwater, as they have substantially decreased pay for performance sensitivity (Murphy, 1999). Underwater options may not reflect executives' future efforts to the same extent that they would if the options were at- or in-the-money.

Anecdotal evidence suggests that firms do alter compensation in response to underwater options; a recent study reported that 43% of public companies would compensate executives for underwater options (Osterland, 2001). Further, the business press suggests at least three possible ways to respond: (1) reprice those options,[1] (2) grant additional options, or (3) increase cash-based compensation (Doubleday and Fujii, 2001; Fox and Hauder, 2001; Osterland, 2001; Silverman, 2001).

Prior research finds that firms alter compensation in response to underwater options by repricing those options (see Core, Guay, and Larcker, 2001 for a summary). But, firms may choose, instead, to alter other forms of compensation. Repricing as a response to underwater options ultimately is transparent to investors in the proxy statement. On the other hand, increases in other forms of compensation are not as easily identifiable as responses to underwater options. Given the controversy of compensating executives in response to underwater options, firms may not want to appear to be rewarding poor performance. Thus, they may choose to alter other components of compensation rather than reprice. Prior research has not examined this issue of

[1] Repricing can be effected either by altering the exercise price of an existing option, or canceling and regranting new options within a six-month period.

concurrent changes in components of compensation in response to underwater options; the literature focuses primarily on specific compensation components or on actions firms take in special situations (e.g., Gilson and Vetsuypens, 1993; Saly, 1994; Carter and Lynch, 2001). In this study, we consider the open question of whether firms alter other components of compensation in response to underwater options.

Firms' responses to underwater options likely have changed since December 1998, when the FASB announced an accounting change that creates a disincentive for firms to reprice stock options.[2] For repricing events occurring after December 15, 1998, firms must record an expense related to the difference between the new exercise price of the repriced options and the future stock price. This expense can be amortized over the vesting period of the options, but must be recorded after stock price increases in each period the option is outstanding. While prior research shows that repricing activity decreased significantly after the accounting change (Carter and Lynch, 2002a), there is no clear evidence of whether or how firms compensate executives for underwater options after the accounting change. Anecdotal evidence suggests that firms have shifted towards granting additional stock options, or "megagranting" (e.g., Weston, 2000). Since firms can grant stock options without recording an expense, granting additional options is a likely alternative to repricing after the accounting change. We examine whether firms continue to compensate executives for underwater options after the accounting change by shifting into other actions, such as granting additional options or increasing cash-based compensation.

[2] The final rule was issued as FASB Interpretation 44: *Accounting for certain transactions involving stock compensation: an interpretation of APB Opinion No. 25*.

In this paper, we first examine how firms with underwater options alter total compensation and the composition of compensation (cash-based and equity-based) in response to those options being underwater. We compare changes in compensation in firms with underwater options in 1997 or 1999 (before and after the 1998 accounting change, respectively) to changes in compensation in other firms to determine firms' responses to underwater options. We then compare those responses by firms with underwater options in 1997 to responses by firms with underwater options in 1999 to examine whether firms' responses differ after the 1998 accounting change.

We find that prior to the 1998 change in accounting for stock option repricing, firms respond to underwater options by repricing those options, consistent with prior research. We find no evidence that firms use other forms of compensation to compensate executives for underwater stock options. This is surprising, given that firms could grant additional stock options in response to underwater options without recording an expense and with less transparency to investors than repricing. After the 1998 accounting change, we find that firms shift away from repricing, consistent with prior research. Interestingly, we find that firms shift towards giving more cash compensation, in the form of salary, rather than granting additional options as expected. One possible explanation is a change in employee preferences for the predictability of cash compensation over the uncertainty of stock options. Finally, we find no evidence of option megagranting, "six month and a day repricings" that enable firms to avoid repricing expenses, or cashouts of underwater options, despite anecdotal evidence pointing to their use. Our analysis suggests that these tactics may be more the exception than the rule.

The paper is organized as follows. Section 2 provides background discussion. Section 3 describes the sample of firms and data used in the analysis. Section 4 presents the analysis of firms' responses to underwater options. Section 5 concludes.

2. Background

2.1 Responding to underwater stock options

Agency theory suggests that, under situations of separation of ownership and control, compensation contracts based on stock performance can help to align the interests of managers and shareholders. Maximizing firm performance is the shareholder's objective, and measuring stock price performance can provide information regarding managers' otherwise unobservable actions. Indeed, prior research shows that compensation is positively related to firm performance (e.g., Murphy, 1985; Coughlan and Schmidt, 1985). When the stock price declines, options lose value, and gains to executives are lower. This loss coincides with losses incurred by the shareholders. Because of the desire for firms to maintain this alignment and given the controversy of compensating executives in response to underwater options, firms may not want to be perceived as rewarding poor performance. Thus, firms may choose not to alter compensation in response to underwater stock options.

However, there are several reasons why firms may alter compensation in response to underwater options. First, firms may lose executives because of underwater options, especially as options have become a more important component of executive compensation and as some labor markets have become extremely competitive. For example, compensation consultants argue that, if firms do not reprice options, employees

may implicitly "reprice by seeking new employment and a market-based hire-on grant" (Doubleday and Fujii, 2001). Given that it may be costly to bring in new executives and it may be poor market and/or industry performance, rather than poor firm-specific performance that leads to the options being underwater, retention may be a desired outcome. Consistent with firms altering compensation to retain executives in competitive labor markets, Carter and Lynch (2001) document that repricing is more likely in younger, high technology firms.[3] Second, firms may alter compensation in response to underwater options to insulate executives from factors beyond their control. If the source of underwater options is poor market or industry performance, altering compensation would help ensure that the executive is not penalized by those factors. Consistent with the desire to insulate executives from uncontrollable factors, Saly (1994) finds that firms appear to reprice stock options after the 1987 stock market crash. Third, underwater options have substantially decreased pay-for-performance sensitivity (Murphy, 1999) and, as a result, diminished incentive effects. The value of these options may not reflect executives' future efforts to the same extent that the options would if they were at- or in-the-money. Restoring the pay for performance sensitivity by altering equity-based compensation may help resolve this problem. Indeed, prior research finds that increasing the sensitivity of executive pay to firm performance may increase future firm performance (Abowd, 1990).

In summary, there are reasons why firms may or may not alter executive compensation in response to underwater stock options. Prior research finds that firms do

[3] While results in Carter and Lynch (2001) suggest that firms' repricing stock options is consistent with the desire to retain valuable employees, Carter and Lynch (2002b) finds no evidence that repricing is effective in lowering executive turnover.

alter executive compensation by repricing underwater options (see Core, et. al, 2001 for a summary). It is possible, though, that firms choose, in lieu of repricing, to alter other forms of compensation. Since firms typically reprice only underwater stock options (Brenner, Sundaram, and Yermack, 2000), and since repricing, when it occurs, is required as a separate disclosure in the proxy statement, it ultimately is transparent to investors that the firm has altered compensation in response to underwater options. In contrast to repricing, any increases in salary, bonus or stock option grants that are responses to underwater options are not separately disclosed; firms only are required to report the level of those components of compensation and any increases in those components may not necessarily be due to firms' responses to underwater options. If firms do not want the appearance of responding to underwater options (i.e. looking as if they are rewarding poor performance), they may choose to alter these other components of compensation rather than reprice. Therefore, we expect that, on average, firms alter other components of compensation in response to underwater stock options.

2.2 Accounting for compensation

Firms must record an expense on the financial statements for most forms of compensation (e.g., salary, cash bonuses, restricted stock) when they are earned. However, firms are not required to record an expense for some forms of equity-based compensation. These include fixed stock options that are granted at-the-money and stock options repricing that occurred prior to December 15, 1998.[4] As a result, prior to this date, if firms choose to alter compensation in response to underwater options, the

[4] Statement of Financial Accounting Standards No. 123 prescribes the accounting for stock options.

accounting for compensation provides an incentive for firms to either reprice stock options or grant new stock options.

In December 1998, the FASB announced that it intended to release an exposure draft clarifying that firms would be required to record an expense associated with stock option repricings that occur after December 15, 1998.[5] According to the new accounting, altering the exercise price of existing options or canceling and regranting new options within six months of each other are treated as a repricing and require recording an expense. The expense would be recorded each accounting period that the options are outstanding and would be related to the difference between the new exercise price and the stock price at the end of the corresponding accounting period.[6] As a result, the new accounting provides an incentive for firms to shift away from repricing when responding to underwater stock options. In fact, prior research shows that repricing activity decreases significantly after December 15, 1998 (Carter and Lynch, 2002a). Alternatively, anecdotal evidence suggests that firms have attempted to avoid an expense related to repricing by canceling options and regranting additional options six months and a day later (Norris, 2000).

The documented decline in repricing after the accounting change suggests that firms' responses to underwater options may have shifted to other actions, such as granting additional options or increasing cash-based compensation. However, prior research has not yet investigated this possibility. Anecdotal evidence suggests that firms

[5] The final accounting was approved in March 2000, issued as FASB Interpretation 44, and effective on July 1, 2000 for repricings after December 15, 1998.

[6] Specifically, the cumulative expense recorded would be equal to the difference between the new exercise price of the repriced options and the future stock price, and would be amortized over the remaining vesting period of the repriced options.

have shifted towards granting additional stock options, including Microsoft's unusually large one-time stock option grant to all employees in 2000 (Weston, 2000) and Lucent Technology's awarding additional options to employees three times within one year as its stock price plunged (Simon, 2001). Indeed, after December 15, 1998, if firms shift away from repricing but still choose to alter compensation in response to underwater options, the accounting for compensation provides an incentive for firms to grant new stock options rather than increase cash-based compensation. Consequently, after December 15, 1998, we expect to see firms with underwater options shifting away from repricing towards awarding additional option grants.

3. Sample

3.1 Sample selection

We start with the sample of 1,619 firms reported on the Standard and Poor's ExecuComp database that have stock returns data available on CRSP, positive book values of equity, and non zero values of executive stock options outstanding at the end of 1996. Since stock price declines are a necessary condition for underwater options, to obtain a group of firms that have underwater stock options, we identify 290 firms that have negative stock returns in fiscal year 1997 (referred to as the 1997 sample). Our selection procedure results in the 1997 sample having significantly lower stock returns than the other firms on ExecuComp. The average cumulative stock return for fiscal 1997 is –21.98% (median –16.45%) for sample firms, compared with 50.89% (median 39.02%) for the other ExecuComp firms. This difference in returns suggests that our

sample firms face an acute problem with underwater options while our control firms do not.[7]

We identify a sample of 769 firms with negative stock returns in fiscal year 1999, after the change in accounting for stock option repricing (referred to as the 1999 sample). These firms have stock returns for fiscal 1999 of -26.55% (median -23.12%), compared with 82.92% (median 37.73%) for other ExecuComp firms.

3.2 Data

We obtain executive compensation data from ExecuComp for 1992 through 2000.[8] We report total compensation (ExecuComp variable TDC1), which is the total of salary, bonus, other annual compensation, total value of restricted stock granted, total value of stock options granted (using Black-Scholes), long-term incentive payouts, and all other compensation. We also report salary (ExecuComp variable SALARY), which is the dollar value of the base salary (cash and non-cash) earned by the named executive officer during the fiscal year, and bonus (ExecuComp variable BONUS), which is the dollar value of a bonus (cash and non-cash) earned by the named executive officer during the fiscal year. In addition, we report the value of stock options granted (ExecuComp variable BLK_VALUE), which is the aggregate value of stock options granted to the executive during the year as valued by ExecuComp using the Black-

[7] To further verify our sample selection, we determine the average amount that executive stock option grants in 1995 – 1997 are out-of-the-money or in-the-money in 1997. We assume that options have three-year vesting requirements and, therefore, these grants are unexercised and represent at least a portion of the executive's stock option portfolio. These stock options for sample firms are underwater by $2.67, on average, and that these stock options for other ExecuComp firms are in-the-money by $8.97, on average, suggesting that our selection procedure accurately identifies firms that face problems associated with underwater options and firms that do not. We chose to select the sample using acute stock price declines to give us a clearly defined event period.

[8] 2000 data is available for firms that are included on ExecuComp as of June 2000.

Scholes methodology; the value of restricted stock (ExecuComp variable RSTKGRNT); and the value of other compensation (ExecuComp variable ALLOTHTOT). Because our analysis is at the firm level, we calculate the average compensation per executive per year for each firm by summing the compensation variables across executives, including the CEO, for each year and then dividing by the number of executives reported for that year. Finally, we use a repricing flag (ExecuComp variable PREPRICE) to identify executives whose options have been repriced during the fiscal year. We create a firm level indicator variable equal to one when any executive is repriced during the year, to indicate whether the firm reprices options.

Financial statement data also is obtained from ExecuComp when available. If not available on ExecuComp, the data is obtained from Compustat. Stock returns are obtained from the Center for Research in Securities Prices (CRSP).

3.3 Descriptive statistics

Table 1 provides descriptive statistics for the 1997 and 1999 samples of firms with underwater options and other firms. We provide descriptions of total compensation and its components, and financial data for both sample and other firms. The 1997 sample firms are somewhat smaller that other ExecuComp firms, with average 1996 sales of $1.8 billion compared with $3.2 billion for other firms. Sample firms have average return on assets of 3.21% in 1996, compared with 5.35% for other ExecuComp firms. The average book-to-market ratio for the 1997 sample firms is 0.44 compared with 0.47 for other ExecuComp firms. For the 1999 sample, the return on assets is 3.67%, compared with 3.85% for other ExecuComp firms. Average sales for the 1999 sample firms are $3.4

billion, compared with $3.8 billion for other ExecuComp firms. Finally, 1999 sample firms have a mean book-to-market ratio of 0.48, compared with 0.47 for other firms.

4. Examination of responses to underwater options

4.1 Research Design

To examine whether and how firms alter compensation in response to underwater options in 1997 (1999), we compare compensation in the 290 (769) firms with underwater options in 1997 (1999) to compensation in a control group consisting of the remaining 1,329 (764) ExecuComp firms. Since the data discussed in section 3.1 suggest that the control group of other ExecuComp firms do not face an acute problem with underwater options, we use compensation in those firms as an expectation of compensation in firms in the absence of problems related to underwater options.[9] Using 1996 (1998) as a benchmark year, we compare the changes in total compensation (and its components) in the sample firms in 1996 to 1998 (1998 to 2000) to that in the control firms. Examining changes over a two-year period enables us to capture firms' responses to underwater options that occur immediately or with some lag.

To address our first research question, we interpret increases in total compensation (or its components) in the sample firms that are greater than increases in the other ExecuComp firms as indications that the sample firms compensate executives for underwater options. To address our second research question, we examine whether responses in the pre-accounting change period are different from those in the post-

[9] As we will discuss in Section 4.2, our study confirms findings of prior research, suggesting that using other ExecuComp firms as the benchmark for compensation changes in the absence of underwater stock options is reasonable.

accounting change period. Specifically, we compare the difference in the changes in compensation between sample firms and control firms in the pre-accounting change period (as a proxy for sample firms' responses to underwater options) to corresponding differences in the post-accounting change periods.[10]

First, we make these comparisons in a univariate analysis. Then, we examine these questions in a multivariate analysis to control for differences in performance and for factors determining compensation. We estimate the following OLS regression[11]:

$$DEP\_VAR_{jt} = \beta_0 + \beta_1 TREAT_{jt} + \beta_2 POST_t + \beta_3 TREAT_{jt} * POST_t + \beta_4 ROA_{jt} + \beta_5 LNSALES_{jt} + \beta_6 B\_M_{jt} + \beta_7 BS\_VOL_{jt} + \beta_8 DHI_j + \varepsilon_j \quad (1)$$

Dependent variables:

ΔTC_{jt}	=	Change in total compensation for 1996 to 1998 (1998 to 2000) / total compensation for 1996 (1998) for firm j
ΔSAL_{jt}	=	Change in salary for 1996 to 1998 (1998 to 2000) / total compensation for 1996 (1998) for firm j
ΔBON_{jt}	=	Change in bonus for 1996 to 1998 (1998 to 2000) / total compensation for 1996 (1998) for firm j
ΔBLK_{jt}	=	Change in Black-Scholes value of options granted for 1996 to 1998 (1998 to 2000) / total compensation for 1996 (1998) for firm j
$\Delta RSTK_{jt}$	=	Change in value of restricted stock granted for 1996 to 1998 (1998 to 2000) / total compensation for 1996 (1998) for firm j
$\Delta OTHER_{jt}$	=	Change in value of other compensation for 1996 to 1998 (1998 to 2000) / total compensation for 1996 (1998) for firm j
$REPRICE_{jt}$	=	1 if firm j reprices in 1997 or 1998 (1999 or 2000), 0 otherwise

[10] We winsorize continuous variables that are above (below) the 99th (1st) percentile, in order to mitigate the influence of outliers.
[11] When REPRICE is the dependent variable, we estimate using LOGIT.

Independent variables:

$TREAT_{jt}$	=	1 if firm j has underwater options in 1997 (1999), 0 otherwise
$POST_t$	=	1 if observation is from 1999 sample, 0 otherwise
ROA_{jt}	=	average ROA, defined as (net income before extraordinary items / total assets) for firm j from 1996 to 1998 (1998 to 2000)
$LNSALES_{jt}$	=	natural log of average total sales for firm j from 1996 to 1998 (1998 to 2000)
B_M_{jt}	=	average book-to-market ratio for firm j from 1996 to 1998 (1998 to 2000)
BS_VOL_{jt}	=	average estimated future stock volatility for firm j from 1996 to 1998 (1998 to 2000)
DHI_J	=	1 if firm j is in a high-technology industry, 0 otherwise

We interpret the coefficient β_2 on TREAT to draw conclusions regarding firms' responses to underwater options in the pre-accounting change period. We interpret the sum of the coefficients β_1 on TREAT and β_3 on TREAT*POST to draw conclusions regarding firms' responses in the post-accounting change period. We interpret the coefficient β_3 on TREAT*POST to draw conclusions regarding the shift in firms' responses from the pre-accounting change period to the post-accounting change period. A negative (positive) coefficient β_3 suggests firms shift away from (towards) the compensation mechanism in the post-accounting change period (i.e., the change, from the pre-accounting change to the post-accounting change period, in the two-year change in compensation for sample firms is less than (greater than) the two-year change in compensation for control firms).

We include control variables for performance and for standard economic determinants of compensation that also may impact changes in compensation (Smith and Watts, 1992; Gaver and Gaver, 1993, 1995; Core, Holthausen and Larcker, 1999). To

proxy for accounting performance, we use return on assets, measured as net income before extraordinary items scaled by total assets (ROA). We use the natural log of total sales as a proxy for firm size (LNSALES). Finally, we use the book-to-market ratio as a proxy for the firms' investment opportunity set (B_M).[12] These data are obtained from ExecuComp and are measured as the average over the compensation change period (either 1996 to 1998, or 1998 to 2000).

We also control for stock price volatility (BS_VOL). Firms with more volatile stock prices may be less likely to respond to underwater options for two reasons: (1) the more volatile the stock price, the more likely the options are to return to in-the-money status, making a response unnecessary, or (2) the more volatile the stock price, the more likely options will be underwater in the future, and responding to underwater options now creates a precedent for the future. We proxy for volatility using the estimated future stock price volatility from ExecuComp (ExecuComp variable BS_VOLATILITY). This variable also is measured as the average over the compensation change period (either 1996 to 1998, or 1998 to 2000). Finally, we control for the competitiveness of labor markets by including a high-technology indicator variable, as these industries have been targeted as experiencing tight labor markets. For example, industry leaders supported legislation to raise visa limits for temporary workers in response to shortages of highly skilled workers in the United States, especially in information technology industries (see, for example, Oliphant, 1998; Weil, 1998). We identify firms as being high-technology firms (DHI) if they operate in the following SIC codes: 3570 – 3579 (Computer Equipment), 3670 – 3679 (Electronics), 3800 – 3899 (Measurement Instruments), 4800 –

[12] We eliminate observations where the book value of equity is negative.

4899 (Communications), and 7370 – 7379 (Computer Processing, Prepackaged Software).[13]

4.2 Results

Table 2 provides univariate comparisons for the 1997 and the 1999 samples. Both before and after the change in accounting for stock option repricing, the change in total compensation is smaller for firms with underwater options than for other firms. The change in salary is smaller in the 1997 sample firms than in other firms (-0.01, significant at $p < 0.01$), but no different from the other firms in 1999. This suggests that there was a salary penalty for executives in firms with underwater options in 1997, possibly arising implicitly in exchange for repricing, that no longer exists in 1999. In examining changes in bonus and the value of stock option grants, firms with underwater options have smaller increases than other firms both before and after the accounting change. The change in restricted stock is smaller in 1997 for sample firms that other firms, but no different from the other firms in 1999. The change in other compensation for sample firms is no different from the other firms in either 1997 or 1999. Prior to the accounting change (1997), the incidence of repricing is significantly higher for sample firms than other firms (0.16, significant at $p < 0.01$), suggesting it is the primary mechanism that firms use to address underwater options. This result is consistent with prior research that finds that firms reprice options when they are underwater (e.g., Saly, 1994; Gilson and Vetsuypens, 1993; Carter and Lynch, 2001). After the accounting change (1999), however, firms do

[13] To assess the reasonableness of our classification of firms as high technology, we examine the correlation of our classification with the firms' being listed in the *CorpTech Directory of Technology Companies* for the 1997 and 1999 sample firms. The correlation is significantly positive, suggesting that our classification captures high technology firms.

not appear to be using repricing to respond to underwater options (-0.01, significant at $p < 0.10$), consistent with prior research and consistent with the new accounting for stock option repricing changing firms' responses (Carter and Lynch, 2002a).

Our results from examining compensation changes prior to the accounting change provide new evidence that firms do not appear to use alternative mechanisms, on average, to address those options being underwater. These results suggest that, despite the appearance of rewarding poor performance, firms prefer repricing to alternative mechanisms in responding to underwater options. This result is contrary to our expectations, since firms could grant additional options without recording an expense and with less transparency to investors than repricing. One possible explanation is that repricing deals directly, rather than indirectly, with the underwater options at issue, while granting additional options on top of the underwater options changes the executive's option payout function.

We test the differences in the responses from 1997 to 1999 to determine whether firms shift responses to underwater stock options after the accounting change. We find that firms shift away from repricing (-0.17, significant at $p < 0.01$) and towards salary (0.01, significant at $p < 0.05$) to address the presence of underwater options. In addition, firms appear to shift from granting options as well (-0.34, significant at $p < 0.01$). The shift away from repricing after the accounting change is consistent with prior research (Carter and Lynch, 2002a). However, the apparent shift from option granting and towards salary is inconsistent with expectations and inconsistent with anecdotal evidence that suggests that megagranting is a common way to respond to underwater options. We examine this further in section 4.3.1.

Table 3 Panel A reports results of changes in compensation in a similar format to that in Table 2, after controlling for performance and for other factors that may explain changes in compensation by estimating the regression in model (1). (Complete results of the regression in model (1) are reported in Table 3 Panel B. For ease of exposition, our discussion focuses on Table 3 Panel A.) Results from this regression confirm the main conclusions drawn from the univariate analysis in Table 2. Prior to the accounting change, firms, on average, appear to use only repricing to compensate executives for underwater options (1.33, significant at $p < 0.01$). However, after the accounting change, firms shift away from repricing (-1.78, significant at $p < 0.01$) and towards salary (0.02, significant at $p < 0.01$) to respond to underwater options. Unlike in the univariate analysis, we see no shift away from option grants after controlling for other factors affecting the change in compensation (0.04, not significant at conventional levels). However, these results still provide no evidence of megagranting as a way to compensate executives for underwater options.

Since firms can grant additional options without recording an expense but increasing salary results in increased expenses, and since shift away from repricing after the accounting change suggests firms prefer to avoid taking charges, it is surprising to see a shift towards salary after the accounting change. One possible explanation is that employee preferences have shifted towards the predictability of cash compensation over the uncertainty of compensation based on stock options, consistent with anecdotal evidence (Osterland, 2001; Dunham, 2001; *The Economist*, 2001).

4.3 Further investigation into firms' responses

In this section, we examine in more detail firms' responses to underwater options. We first examine whether megagranting is occurring for a subsample of firms. Then, we examine whether firms are responding in ways that may not show up as increases in compensation: (1) implementing a pseudo-repricing in a way to avoid incurring repricing expenses, and (2) buying out executives' underwater options.

4.3.1 Megagranting

We find no evidence that firms, on average, increase option grants to compensate executives for underwater options. As discussed, this result is somewhat surprising, given anecdotal evidence regarding megagranting and the expectations of higher grants stemming from their associated accounting benefits. In this section, we examine the upper end of the distribution of option grants to examine whether a subset of firms with underwater options may be substituting option grants for repricing after the accounting change.

Since the definition of megagranting is not clear, we classify firms as increasing option grants using several different cutoffs. For each cutoff, we first examine whether the proportion of firms exceeding that cutoff increases after the accounting change. If firms are shifting to large increases in option grants after the accounting change to compensate executives for underwater options, the proportion of firms exceeding each cutoff should be greater after the accounting change. Then, for each cutoff, we examine the mean and median value of option grants. If firms are shifting to large increases in option grants after the accounting change to compensate executives for underwater

options, the size of the option grants above each cutoff should be greater after the accounting change.

To conduct this analysis, we measure the increase in option grants as the Black-Scholes value of option grants for two years (the years of and after the underwater options) scaled by the average annual Black-Scholes value of option grants over the prior four years.[14] We call this the "option increase ratio." Because we use the sum of two years of option grants in the numerator and a one-year average in the denominator, an option increase ratio greater than two would suggest that the firm grants more options in the two-year period than recently typical. Likewise, an option increase ratio greater than four would suggest that the firm grants twice as many options in the two-year period than recently typical.

Table 4 presents the results of this analysis. We examine firms with an option increase ratio greater than two (firms increase grants over what is recently typical) and firms with a ratio greater than nine (firms increase option grants 4.5 times over what is recently typical). Regardless of the cutoff used to define large increases in option grants, we find no evidence of a greater proportion of firms giving large increases in option grants in 1999 than in 1997. For each cutoff, the proportion of firms in 1999 is no larger than the proportion in 1997. In addition, we find no evidence that increases in option grants are larger in 1999 than 1997. Specifically, for each cutoff, the differences in the mean and median ratio for 1999 firms and 1997 firms are not significant at conventional levels. These results provide no evidence that firms use large option grants to

[14] Our conclusions are consistent using the number of options granted instead of the value of options granted.

compensate executives for underwater stock options.[15] One possible explanation for the conflict between our findings and expectations is that megagranting may be used primarily for *non*-executive employees. Alternatively, it is possible that megagrants reported in the popular press are more the exception that the rule.

4.3.1 Six month and a day "repricing"

Anecdotal evidence suggests that firms have attempted to circumvent the accounting charge associated with repricing by canceling options and granting additional options six months and one day later (Norris, 2000). Our results suggest that this alternative is not widely pursued. If firms pursue this alternative, we should see (1) a shifting towards additional option grants after the change in accounting for stock option repricing, or (2) a significant positive correlation between option cancellations and option grants. The results discussed in section 4.2 provide no evidence of a shift towards additional option grants. In addition, there is no correlation between option cancellations and option grants for our sample of firms with underwater options in 1999.[16] Specifically, the Pearson (Spearman) correlation coefficient between option cancellations (scaled by options outstanding) and the value of option grants (scaled by total compensation) is -0.049 (-0.054), and is not significant at conventional levels.[17]

[15] One means to reprice options is to cancel old options and issue new options at a lower exercise price. In this situation, the repriced options are reported in option grants. Since there is more repricing in 1997 than in 1999, this issue would overstate option grants in 1997 and thus reduce our ability to detect a shift towards megagranting after the accounting change. Accordingly, as a robustness test, we redo the analysis presented in Table 4 eliminating all firms that reprice options. Our conclusions regarding megagranting are unchanged.

[16] We calculate option cancellations as (beginning balance of executive options + option grants – option exercises – ending balance of executive options).

[17] Conclusions are unchanged when option grants are measured as the number of options granted scaled by beginning balance of options.

4.3.2 Cashouts of underwater options

Another means through which firms can give additional cash to executives is to buy out underwater options (Fox and Hauder, 2001; Silverman, 2001). Since such cashouts are captured in ExecuComp as other compensation, if firms pursue this alternative, we should see a significant positive correlation between option cancellations and other compensation. There is no correlation between option cancellations and other compensation for these firms. Specifically, the Pearson (Spearman) correlation coefficient between option cancellations (scaled by options outstanding) and other compensation (scaled by total compensation) is -0.015 (-0.024), and is not significant at conventional levels.

5. Conclusion

Because firms may want to maintain the alignment between pay and performance or because they do not want to be perceived as rewarding poor performance, firms may choose not to alter compensation in response to underwater options. On the other hand, firms may choose to compensate executives for underwater options in order to retain those executives, to insulate them from factors beyond their control, or to restore the options' incentive effects. While prior research finds that firms do respond to underwater options by repricing them, our study is the first to examine whether firms adjust other components of compensation to compensate executives for underwater options. In addition, prior research finds that repricing decreases significantly after a 1998 accounting change that creates a disincentive for firms to reprice stock options. However, whether firms continue to compensate executives for underwater options by shifting into other forms of compensation has not been addressed in the literature. The

controversy surrounding compensating executives for underwater options suggests that these are important questions to consider. Our results shed light on these issues.

Using a sample of firms with underwater options in 1997 and a sample of firms with underwater options in 1999, we examine how firms respond to underwater executive stock options by altering executive compensation and whether those responses are different after the 1998 accounting change. Our analysis suggests that firms do reprice underwater options in the pre-accounting change period, consistent with findings in prior research. However, repricing seems to be the primary response; we find no evidence that firms increase other forms of compensation in response to underwater options. On the other hand, in the post-accounting change period, firms do not alter equity-based compensation in response to underwater options. Consistent with prior research, we find that firms shift away from the use of repricing to address underwater options. Surprisingly, despite the anecdotal evidence on mega stock option grants and expectations of higher option grants suggested by the accounting benefits associated with options, we find no evidence that firms with underwater options in the post-accounting change period are granting significantly more options. Likewise, we find no evidence that firms use "six month and a day repricings" to avoid an expense or that firms buy out executives' underwater options. It is possible that megagrants, "six month and a day repricings", and cashouts reported in the popular press are exceptions. Instead, results suggest that these firms shift towards cash compensation to address underwater options. One possible explanation is that employee preferences have changed toward the predictability of cash compensation over the uncertainty of stock options.

References

Abowd, J., (1990), Does performance based compensation affect corporate performance?, Industrial and Labor Review 43 (3), 52s-73s.

Brenner, M., R. Sundaram, and D. Yermack, 2000, Altering the terms of executive stock options, Journal of Financial Economics 57(1), 103-128.

Carter, M.E., and L. Lynch, 2001, An examination of executive stock option repricing, Journal of Financial Economics 61, 207-225.

Carter, M.E., and L. Lynch, 2002a, The consequences of the FASB's 1998 proposal on accounting for stock option repricing, Journal of Accounting and Economics (conditionally forthcoming).

Carter, M.E., and L. Lynch, 2002b, The effect of stock option repricing on employee turnover, working paper, University of Virginia.

Core, J., W. Guay, and D. Larcker, 2001, Executive equity compensation and incentives: A survey, working paper, University of Pennsylvania.

Core, J., R. Holthausen, and D. Larcker, 1999, Corporate governance, chief executive officer compensation, and firm performance, Journal of Financial Economics 51, 371-406.

Coughlan, A. and R. Schmidt, 1985, Executive compensation, management turnover, and firm performance: an empirical investigation, Journal of Accounting and Economics 7, 43-66.

Doubleday, D. and S. Fujii, 2001, Weighing your options, equity strategies in a volatile market, WorldatWork Journal, Second Quarter, 2001.

Dunham, K., 2001, Back to reality, The Wall Street Journal, April 12, 2001, p. R5.

The Economist, Executive Pay: Underwater, November 10, 2001, p. 61.

Financial Accounting Standards Board. Statement of Financial Accounting Standard No. 123: Accounting for stock-based compensation. October 1995.

Financial Accounting Standards Board. Financial Interpretation No. 44: Accounting for certain transactions involving stock compensation: an interpretation of APB Opinion No. 25. March 2000.

Fox, R. and E. Hauder, 2001, Sending Out an SOS; Methods for Companies to Resuscitate Underwater Stock Options, WorldatWork Journal, Second Quarter 2001, 92-96.

Gaver, J., and K. Gaver, 1993, Additional evidence on the association between the investment opportunity set and corporate financing, dividend, and compensation policies, Journal of Accounting and Economics 16, 125-160.

Gaver, J., and K. Gaver, 1995, Compensation policy and the investment opportunity set, Financial Management 24, 19-32.

Gilson, S., and M. Vetsuypens, 1993, CEO compensation in financially distressed firms: an empirical analysis, Journal of Finance 48(2), 425-458.

Kole, S., 1997, The complexity of compensation contracts, Journal of Financial Economics 43, p. 79-104.

Lublin, J., 2001, Hedging their bets, The Wall Street Journal, April 12, 2001, p. R1.

Murphy, K., 1985, Corporate performance and managerial remuneration, Journal of Accounting and Economics 7, 11-42.

Murphy, K., 1999, Executive Compensation. In Ashenfelter, O., Card, D. (Eds.), Handbook of Labor Economics, Vol. 3B. North Holland, Amsterdam.

Norris, F., 2000, A pesky accounting rule won't stop Sprint from replacing options to help its employees, The New York Times, October 23, 2000, p. C6.

Oliphant, T., 1998, A thriving company has jobs, but needs applicants, The Boston Globe, June 8, 1998.

Osterland, A., 2001, Keeping options afloat, CFO, March 2001, p. 37-40.

Oyer, P. and S. Schaefer, 2001, Why do some firms give stock options to all employees?: An empirical examination of alternative theories, working paper, Stanford University.

Saly, P., 1994, Repricing executive stock options in a down market, Journal of Accounting and Economics 18, 325-356.

Silverman, E., 2001, Breathing underwater: Companies look for new ways to help workers stuck with worthless options, The Wall Street Journal, April 12, 2001, p. R8.

Simon, R., 2001, Techs retool option plans amid plunge, The Wall Street Journal, March 14, 2001, C1.

Smith, C., and R. Watts, 1992, The investment opportunity set and corporate financing, dividend, and compensation policies, Journal of Financial Economics 32, 263-292.

Weil, N., 1998, Senate passes bill to raise visa quotas, IT (Information Technology) Career News, May 19, 1998.

Weston, L., 2000, It's decision time for stock option holders, Los Angeles Times, November 3, 2000, p. C1.

Table 1
Description of 1997 (1999) sample and other ExecuComp firms

(in thousands except for percents)

	Mean (median)			
	1997 Sample (a)		1999 Sample (b)	
Variable	**Firms with underwater options in 1997 (290 firms)**	**Other ExecuComp firms (1,379 firms)**	**Firms with underwater options in 1999 (769 firms)**	**Other ExecuComp firms (764 firms)**
Total Compensation	$1,450.6 ($900.5)	$1,490.2 ($867.4)	$1,904.0 ($1,100.1)	$2,631.4 ($1,092.9)
Salary	$269.8 ($239.9)	$307.7 ($275.7)	$329.9 ($305.7)	$320.6 ($277.4)
Bonus	$153.4 ($92.7)	$276.5 ($156.4)	$260.8 ($168.1)	$307.3 ($150.4)
Value of Options	$780.2 ($337.8)	$594.8 ($210.8)	$907.6 ($352.2)	$1,164.6 ($426.5)
Value of Restricted Stock	$70.2 ($0.0)	$97.4 ($0.0)	$153.6 ($0.0)	$316.4 ($0.0)
Other Annual Compensation	$42.5 ($11.5)	$56.3 ($15.6)	$72.5 ($19.2)	$63.5 ($16.1)
Percent of Firms Repricing Executive Stock Options	3.8%	2.1%	3.5%	4.9%
Return on Assets (c)	3.21% (4.87%)	5.35% (5.02%)	3.67% (4.17%)	3.85% (4.77%)
Sales	$1,815,382 ($562,257)	$3,229,200 ($864,305)	$3,443,029 ($1,287,645)	$3,795,943 ($722,374)
Book to Market Ratio	0.44 (0.37)	0.47 (0.42)	0.48 (0.41)	0.47 (0.37)
Cumulative (buy and hold) Stock Returns in FY 1997 (1999)	-21.98% (-16.45%)	50.89% (39.02%)	-26.55% (-23.12%)	82.92% (37.73%)

(a) 1996 data, except cumulative stock returns
(b) 1998 data, except cumulative stock returns
(c) Defined as Income before Extraordinary Items / Total Assets.

Table 2
A comparison of two-year changes in total compensation and its components for 1997 and 1999 sample firms and other firms to determine responses to underwater options by sample firms

1997: 290 ExecuComp firms with underwater options (sample firms) vs. 1,379 other ExecuComp firms (other firms)
1999: 769 ExecuComp firms with underwater options (sample firms) vs. 764 other ExecuComp firms (other firms)

		Column A 1997 sample	Column B 1999 sample	Column B – Column A Difference in 1999 and 1997 sample
D**TC**	Sample firms	0.26***	0.36***	0.10
	Other firms	0.76***	1.13***	0.36***
	Difference	-0.50***	-0.77***	-0.27**
D**SAL**	Sample firms	0.03***	0.06***	0.03***
	Other firms	0.05***	0.06***	0.01***
	Difference	-0.01***	0.00	0.01**
D**BON**	Sample firms	0.01	0.04***	0.03***
	Other firms	0.06***	0.12***	0.05***
	Difference	-0.05***	-0.08***	-0.02
D**BLK**	Sample firms	0.18***	0.20***	0.02
	Other firms	0.51***	0.87***	0.36***
	Difference	-0.33***	-0.67***	-0.34***
D**RSTK**	Sample firms	0.01*	0.04***	0.03**
	Other firms	0.05***	0.04***	-0.01
	Difference	-0.04***	0.00	0.03*
D**OTHER**	Sample firms	0.03***	0.02***	0.00
	Other firms	0.02***	0.02***	0.00
	Difference	0.00	0.01	0.00
REPRICE	Sample firms	0.20***	0.01***	-0.18***
	Other firms	0.04***	0.03***	-0.01
	Difference	0.16***	-0.01*	-0.17***

*, **, *** Indicate statistically significant at the 10, 5 or 1 percent level, respectively

Variable definitions

ΔTC = Two year change in total compensation (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔSAL = Two year change in salary (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔBON = Two year change in bonus (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔBLK = Two year change in value of options granted (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔRSTK = Two year change in value of restricted stock granted (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔOTHER = Two year change in value of other annual compensation (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
REPRICE = Proportion of firms repricing in either 1997 or 1998 (1999 or 2000).

Table 3

Multivariate analysis comparing two-year changes in total compensation and its components for 1997 and 1999 sample firms and other firms to determine responses to underwater options by sample firms

Panel A: Summary of coefficients from regression reported in Table 3 Panel B

		Column A 1997 sample		Column B 1999 sample		Column B – Column A Difference in 1999 and 1997 sample	
D**TC**	Sample firms	-0.80***	$\beta_0 + \beta_1$	-0.59**	$\beta_0 + \beta_1 + \beta_2 + \beta_3$	0.21*	$\beta_2 + \beta_3$
	Other firms	-0.25	β_0	-0.12	$\beta_0 + \beta_2$	0.13	β_2
	Difference	-0.55***	β_1	-0.47***	$\beta_1 + \beta_3$	0.08	β_3
D**SAL**	Sample firms	0.08***		0.11***		0.03***	
	Other firms	0.10***		0.11***		0.01***	
	Difference	-0.02***		0.00		0.02***	
D**BON**	Sample firms	-0.10***		-0.08**		0.02	
	Other firms	-0.03		0.01		0.04***	
	Difference	-0.07***		-0.09***		-0.02	
D**BLK**	Sample firms	-0.66***		-0.50**		0.16*	
	Other firms	-0.27		-0.15		0.12*	
	Difference	-0.39***		-0.35***		0.04	
D**RSTK**	Sample firms	-0.07**		-0.06*		0.01	
	Other firms	-0.05*		-0.05		-0.00	
	Difference	-0.02		-0.01		0.01	
D**OTHER**	Sample firms	-0.02		-0.02		0.00	
	Other firms	-0.02		-0.02		-0.00	
	Difference	0.00		-0.00		-0.00	
REPRICE	Sample firms	-4.49***		-7.61***		-3.12***	
	Other firms	-5.82***		-7.16***		-1.35***	
	Difference	1.33***		-0.45		-1.78***	

*, **, *** Indicate statistically significant at the 10, 5 or 1 percent level, respectively

Variable definitions

ΔTC = Two year change in total compensation (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔSAL = Two year change in salary (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔBON = Two year change in bonus (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔBLK = Two year change in value of options granted (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔRSTK = Two year change in value of restricted stock granted (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
ΔOTHER = Two year change in value of other annual compensation (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998).
REPRICE = 1 if firm reprices in 1997 or 1998 (1999 or 2000), 0 otherwise.

Table 3 (cont.)

Multivariate analysis comparing two-year changes in total compensation and its components for 1997 and 1999 sample firms and other firms to determine responses to underwater options by sample firms

Panel B: Regression results

$$DEP\_VAR_{jt} = \beta_0 + \beta_1 TREAT_{jt} + \beta_2 POST_t + \beta_3 TREAT_{jt} * POST_t + \beta_4 ROA_{jt} + \beta_5 LNSALES_{jt} + \beta_6 B\_M_{jt} + \beta_7 BS\_VOL_{jt} + \beta_8 DHI_j + \varepsilon_j$$

DEP_VAR	ΔTC	ΔSAL	ΔBON	ΔBLK	ΔRSTK	ΔOTHER	REPRICE
Intercept	-0.26	0.10***	-0.03	-0.27	-0.05*	-0.02	-5.82***
TREAT	-0.55***	-0.02***	-0.07***	-0.39***	-0.02	0.00	1.33***
POST	0.13	0.01***	0.04***	0.12*	-0.00	-0.00	-1.34***
TREAT*POST	0.08	0.02***	-0.02	0.04	0.01	-0.00	-1.78***
ROA	-0.01***	0.00*	-0.00***	-0.01***	-0.00	-0.00**	-0.01
LNSALES	0.10***	-0.01***	0.01***	0.06***	0.02***	0.00***	-0.03
B_M	-0.69***	0.01	0.02*	-0.72***	-0.01	0.02**	0.38
BS_VOL	1.81***	0.02	0.09***	1.78***	-0.03	-0.00	5.64***
DHI	0.39***	-0.00	-0.01	0.36***	-0.01	0.01	0.97***
N	2412	2415	2415	2412	2415	2415	2479
Adj R^2	0.10	0.05	0.04	0.12	0.02	0.00	

*, **, *** Indicate statistically significant at the 10, 5 or 1 percent level, respectively

Variable definitions

ΔTC_{jt} = Two year change in total compensation (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998) for firm j.

ΔSAL_{jt} = Two year change in salary (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998) for firm j.

ΔBON_{jt} = Two year change in bonus (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998) for firm j.

ΔBLK_{jt} = Two year change in value of options granted (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998) for firm j.

$\Delta RSTK_{jt}$ = Two year change in value of restricted stock granted (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998) for firm j.

$\Delta OTHER_{jt}$ = Two year change in value of other annual compensation (1996 to 1998 or 1998 to 2000), scaled by beginning total compensation (1996 or 1998) for firm j.

$REPRICE_{jt}$ = 1 if firm reprices in 1997 or 1998 (1999 or 2000), 0 otherwise.

$TREAT_{jt}$ = 1 if firms has underwater options in 1997 or 1999, 0 otherwise.

$POST_t$ = 1 if 1999 sample, 0 otherwise.

ROA_{jt} = Average annual return on assets (1996 to 1998 or 1998 to 2000).

$LNSALES_{jt}$ = Natural log of average sales (1996 to 1998 or 1998 to 2000).

B_M_{jt} = Average book value of equity to market value of equity (1996 to 1998 or 1998 to 2000).

BS_VOL_{jt} = Average estimated future stock volatility for firm j from 1996 to 1998 (1998 to 2000).

DHI_j = 1 if firm j is in high-technology industry, 0 otherwise.

Table 4

Examination of possible option megagranting behavior by firms with underwater options in 1997 (1999) using the ratio of option grants in 1997-1998 (1999-2000) scaled by the average annual grants in the prior four years

Cutoff based on option increase ratio (a)		Firms with underwater options in 1997 (290 firms)	Firms with underwater options in 1999 (769 firms)	p-value of difference
Ratio > 2	Proportion of firms	62.1	51.8	0.01
	Mean option increase ratio	5.9	6.1	0.73
	Median option increase ratio	4.0	4.5	0.21
Ratio > 3	Proportion of firms	41.4	39.9	0.54
	Mean option increase ratio	7.5	7.2	0.74
	Median option increase ratio	5.4	5.3	0.51
Ratio > 4	Proportion of firms	31.4	28.5	0.37
	Mean option increase ratio	8.8	8.7	0.91
	Median option increase ratio	6.3	6.2	0.85
Ratio > 5	Proportion of firms	22.8	21.5	0.66
	Mean option increase ratio	10.4	10.1	0.80
	Median option increase ratio	7.3	7.6	0.80
Ratio > 6	Proportion of firms	17.2	15.5	0.50
	Mean option increase ratio	12.0	11.8	0.92
	Median option increase ratio	8.5	8.4	0.72
Ratio > 7	Proportion of firms	12.1	12.2	0.95
	Mean option increase ratio	14.4	13.3	0.66
	Median option increase ratio	10.4	9.4	0.49
Ratio > 8	Proportion of firms	10.3	9.1	0.55
	Mean option increase ratio	15.6	15.2	0.91
	Median option increase ratio	10.8	10.7	0.85
Ratio > 9	Proportion of firms	8.3	6.8	0.40
	Mean option increase ratio	17.4	17.6	0.96
	Median option increase ratio	11.5	12.2	0.41

(a) Option increase ratio = Black Scholes value of two-year option grants for 1997-1998 (1999-2000) scaled by average annual Black Scholes value of option grants for 1993-1996 (1995-1998).