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The Effect of Option Repricing on Common Stock Returns: An Empirical Investigation

Joseph D. Vu

Abstract

This paper examines the effect of option repricing on common stock returns. The results indicate that firms tend to reprice options after a period of approximately one year of poor stock performance. The average reduction in exercise price is 48%. More than half of the options also have their maturities extended to a new expiration date of 10 years. Although the short-term effect of option repricing on common stock return is neutral, the long-term effect is very negative. Stock prices decline significantly in the 12-month and 24-month periods after options are repriced. This evidence indicates that repricings are not in the stockholders' best interests because 89% of repricings include top managers who directly benefit from the lower exercise price while stockholders suffer big losses.

JEL Classification: G30, G34.
Key words: Option repricing, management entrenchment.

Introduction

The purpose of this research is to investigate three important issues related to option repricings. First, what are the stockholder wealth effects associated with the announcement of an option repricing? Second, are firms with poor past performance more likely to reprice their stock options? Third, what are the effects of option repricing on the long-term performance of the firm?

Stock options provide managers and key employees with the right to purchase stock at a fixed exercise price over a specified period of time. Problems arise when the current stock price drops significantly below the exercise price. These problems are serious in high-technology and fast-growth companies where stock prices are volatile and options represent a significant proportion of total pay for many employees. Repricing can alleviate these problems by lowering current exercise price on outstanding options or by canceling and reissuing options. The decision to reprice option is made by the board of directors, often without the consent or awareness of shareholders.

Shareholders and institutional investors generally oppose the repricing of stock options. They argue that repricing removes the link between management compensation and shareholder returns. While both shareholders and managers benefit when the stock price increases, if the stock price decreases and options are repriced, the managers will be protected while stockholders have big capital losses. Furthermore, repricing seems to focus on the short-term performance effect of options. Most options have a ten-year expiration date. Therefore, even out of the money (underwater) options have economic value due to the length of their term and the possibility of the stock appreciation. Repricing can also signal to investors that management is pessimistic about the chance that the stock price will ever exceed the exercise price. Regular repricing can create the expectation that the stock performance is not important because that company can intervene to protect the value of the options. In addition, if top managers know that the option will be repriced when the stock falls to a certain level, the managers will have incentives to take actions that will lower the stock price, such as releasing bad news or undertaking unprofitable projects. Yermack (1997) shows that managers tend to receive stock options in the period following the release of bad news in order to receive the lower exercise price. Another argument against repricing is its potential dilution effect on outstanding shares.

Large institutional investors have begun to focus on the lack of disclosure associated with repricing and the absence of shareholders' voice in the process. Companies often wait until the release of their annual financial reports to disclose repricings. The lack of disclosure means the board of directors does not have to worry about stockholders opposition in option repricing. However, the

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Securities and Exchange Commission (SEC) in 1993 required firms to provide a repricing table going back 10 years in the proxy statement whenever these firms reprice executive stock options. This does not apply to employee stock options. Recently some institutional investors pushed for stockholder approval before the board of directors can reprice options. One large institutional investor, the State of Wisconsin Investment Board (SWIB), requested that companies in which it has a stake adopt a policy of requiring shareholder approval before they reprice. When one company refused to follow the request, SWIB brought the issue to the SEC. The SEC agreed with the company claiming that the company cannot be forced to seek shareholder approval for a repricing. Although the issue must still be ruled by the SEC Board, the SWIB intends to take the issue to court if the SEC Board rules against it. The SWIB also has a campaign against repricings focusing on a group of target companies. Of those companies, about 75% took voluntary actions regarding repricing. Another large institutional investor, Fidelity, also believes that option repricing is a significant amendment of a stock plan, and therefore, should be approved in advance by stockholders.

Supporters of options repricing argue that underwater options have little or no incentive value. Repricing options can motivate managers to increase shareholder wealth. In addition, underwater options have little retention value to key employees. These valuable and mobile employees can leave a company where they have underwater options and go to a new company that will give them at-the-money options. Repricing underwater options can prevent this result. Another argument for repricing is that managers and employees should not be punished if the drop in stock price is due to a prolonged bear market or a decline in the industry, and not the result of poor company performance or bad management. Furthermore, repricing is less expensive than creating cash-based retention plans because there is no outflow of cash and no accounting change involved.

Option repricing has become more popular in recent years. Even in the bull market of 1996 and 1997, 33% of Silicon Valley high-technology companies repriced options, while 5% to 7% of public companies issuing options repriced them in 1997. A 1998 National Center for Employee Ownership survey of broad-based stock option plan companies found that 36% had repriced their options in the last three years. Although the issue of option repricing is economically important and controversial, there are only a couple of academic studies that provide empirical evidence on this issue. Gilson and Vetsuypens (1993) examine 77 firms that filed bankruptcy or restructure their debt in the 1981-1987 period. 25 out of 77 firms repriced their options, cutting the old exercise price by 50% on average. These repriced firms performace much worse than the stock market for six years prior to the repricing date. Saly (1994) develops a theoretical model and analyzes the repricing of employee stock options after the October 1987 stock market crash. She provides empirical evidence supporting the prediction that stock options are renegotiated after a market-wide downturn in stock prices. Stock option grants increase in both number and value after the 1987 crash. Brenner, Sudaram and Yermack (2000) examine a sample of 396 executives whose options are repriced in the 1992-1995 period. They find that repricing has a strong negative relation with firms performance even after controlling for industry performance. Repricing is also significantly more common among small firms than among large firms. Chance, Kumar and Todd (2000) analyze a sample of 37 firms that repriced their executive stock options. They find that repricings follow a period of poor firm-specific performance in which the average firm loses one-fourth of its value. Although the direct loss to shareholders from repricing is small, it follows a period of significant loss of shareholder wealth and creates incentives that are not in the shareholders' best interests. Chidambaran and Prabhala (2003) find that option repricings are economically significant but there is little else unusual about compensation in repricing firms. Repricers have abnormally high CEO turnover rates, which is inconsistent with the entrenchment hypothesis. None of these studies address the issue whether the stock price of firms that reprice their options will increase in value in the long-run subsequently to the repricing period. This research investigates the repricing issue directly by examining the stock return performance in the short-term and the long-term for a large sample of firms that repriced their options in the 1987-1997 period.

Hypotheses regarding Option Repricings

1. Management entrenchment hypothesis: this hypothesis claims that option repricing rewards management for a decline in stock price at the expense of stockholders. While both stockholders and managers benefit when the stock price increases, if the stock price decreases and options are repriced, the managers are protected and the stockholders suffer losses. This hypothesis predicts the stock price will decline on the announcement date of option repricing. Furthermore, because companies that reprice are already in trouble, many of them will continue to have poor performance, and their stock price will continue to decline in the long-run.
2. Asymmetric information hypothesis on signaling hypothesis: Meyers and Majluf (1984) develop a model in which managers have special information that stockholders do not have. Therefore, stockholders must infer from the actions of corporate managers to extract the information. An option repricing signals to shareholders that managers are pessimistic about the future of the company. This hypothesis predicts that the stock price will decline in both the short-run and long-run when companies reprice their options.
3. Employee retention and motivation hypothesis: underwater options have little or no incentive value. Repricing options can not only retain valuable employees but also motivate them to work harder. According to this hypothesis, the stock price will increase in both the short-term and long term when options are repriced.

Data and Methodology

The data are collected from the 10K reports, the Disclosure CD-ROM, proxy statements, and the National Automated Accounting Research System database available on Lexis/Nexis. In order to analyze common stock performance, the sample only includes companies whose stock returns are available from the Center for Research in Security Prices (CRSP) daily and monthly tapes. After eliminating multiple repricings of a firm that cluster very closely (within three months), the sample consists of 145 option repricings done by 122 firms during the period from 1987 to 1997. Several firms reprice more than once. Figure 1 shows that distribution across time of the 145 repricings. Most repricings occur in recent periods, especially in 1996 and 1997. The year of the stock market crash in 1987 has only four repricings. One possible reason is that the firms are not required to provide a repricing table. According to the SEC rule, if a firm reprices in 1993 or later, it must provide a table of all repricings going back 10 years. However if a firm only repriced its options one time in 1987 or 1988, it does not have to provide a repricing table, and therefore, does not appear in the sample.

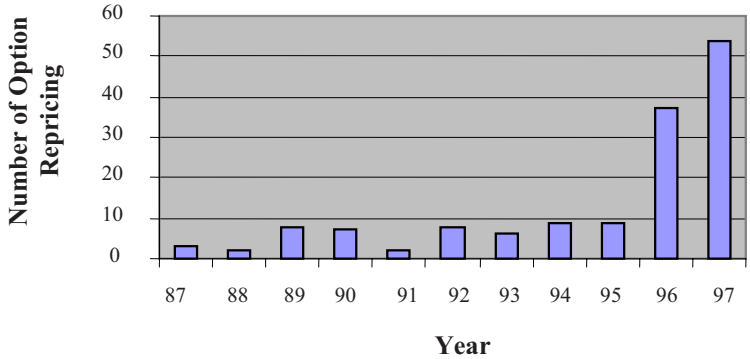

Fig. 1. The distribution across time of 145 option repricings

Table 1 shows the distribution of firms by two-digit industry codes. Although firms in many different industries repriced their options, three industries account for more than half of the repricings in the sample: the industrial, machinery, computer equipment industry; the electronic, and other electric equipment, except computer industry; and the business service industry. The

average reduction in the exercise price is 48%, with a range from 9% to 79%. This result is similar to that of Chance, Kumar and Todd (2000) and, Brenner, Sundaram and Yermack (2000), who report an average reduction of 41% and 40%, respectively. No firm in the sample increases the exercise price. About 11% of the repricings exclude top managers, and 12% impose a moratorium or black-out period on exercising for several months following the repricing. 96% of the repricings involve exchanging one new share for each old share (one-for-one share swap). 55% of the options also have their maturities extended to a new expiration date of 10 years.

Table 1

Distribution of Industries Represented in the Sample of 122 Firms that Reprice Their Options

Two-digit SIC Industry Code		Number of Firms
(1300)	Oil and Gas Extraction	3
(2000)	Food and Kindred Products	1
(2400)	Lumber and Wood Products, Except Furniture	1
(2800)	Chemicals and Allied Products	7
(3000)	Rubber and Miscellaneous Plastics Products	1
(3100)	Leather and Leather Products	1
(3300)	Primary Metal Industries	1
(3400)	Fabricated Metal, Except Machinery, Transportation Equipment	1
(3500)	Industrial Commercial Machinery, Computer Equipment	19
(3600)	Electronic, Other Electric Equipment, Except Computer	22
(3700)	Transportation Equipment	2
(3800)	Measurement Instrument; Photo Goods; Watches	10
(3900)	Miscellaneous Manufacturing Industries	3
(4200)	Motor Freight Transportation, Warehouses	1
(4500)	Transportation by Air	1
(4800)	Communications	2
(4900)	Electric, Gas, Sanitary Services	1
(5000)	Durable Goods-Wholesale	3
(5500)	Auto Dealers, Gas Stations	1
(5800)	Eating and Drinking Places	1
(5900)	Miscellaneous Retail	1
(6100)	Non-depository Credit Institution	1
(6300)	Insurance Carriers	2
(6700)	Holding, Other Investment Offices	1
(7000)	Hotels, Other Lodging Places	1
(7300)	Business Services	25
(7900)	Amusement, Recreation	1
(8000)	Health Service	6
(8700)	Engineer, Accounting, Research, Management, Relations Services	2
(9500)	Administration, Environmental Quality, Housing	1
		123

The effect of option repricing on stock returns is obtained using the standard event-study method. The CRSP index of the equally-weighted portfolio of NYSE-AMEX-NASDAQ stocks is

used as a proxy for the market portfolio. The event-study technique removed the effect of the market so that the remaining variation is due to firm-specific effect. I use the market-adjusted return method instead of the market model because Brown and Warner (1985) show that the market adjusted return method is just as powerful and less biased than the market model when the firm performs poorly in the pre-event period.

The excess return of a stock is computed as:

$$ERi,t = Ri,t - Rm,t,$$

where ERi,t is the excess return of stock i on day t;
Ri,t is the realized return of stock i on day t;
Rm,t is the return on market portfolio on day t.

Individual stocks' excess returns are averaged crosss-sectionally to obtain the average excess return.

$$ARt = \sum_{i=1}^{Nt} ERi,t / Nt,$$

where ARt is the average excess return on day t;
Nt is the number of stocks for which excess return on day t can be computed.

Empirical Results

Table 2 shows that stock price reaction to 145 option repricings from 60 days before the announcement date (day 0) until 60 days later. The cumulative average excess return (CAR) in the pre-event period is -36% which is significant at the 1% level. This result is consistent with the findings of Gilson and Vetsuypens (1993), and Chance, Kumar, and Todd (2000) that repriced firms tend to perform poorly prior to the repricing date. The average excess return on the announcement date of repricing is -0.03%, which is not significant. In the short run, there is no evidence of any improvement in the stock return because the cumulative excess returns from day 1 to day 30 and to day 60 are small and insignificant. This evidence is inconsistent with the employee retention and motivation hypothesis.

Table 2

The Short-Term Stock Price Reaction to 145 Option Repricing From 1987 to 1997

Days Relative to Announcement Date	Average Excess Return %	t-Statistic of Average Excess Return	Cumulative Excess Return %
-60	-0.48	-1.14	-0.48
-50	-0.06	-0.14	-4.46
-40	-0.82	-1.95**	-10.57
-30	-0.79	-1.86**	-16.58
-20	-0.66	-1.56*	-22.96
-10	-0.84	-2.00**	-31.94
-9	0.01	0.01	-31.93
-8	-0.86	-2.00**	-32.79
-7	-0.36	-0.84	-33.15
-6	-0.08	-0.19	-33.23
-5	-0.93	-2.21**	-2.31
-4	-0.40	-0.95	-34.56
-3	-1.01	-2.39***	-35.57
-2	-0.06	-0.15	-35.63
-1	-0.17	-0.41	-35.80
0	-0.03	-0.08	-35.83

Table 2 (continuous)

Days Relative to Announcement Date	Average Excess Return %	t-Statistic of Average Excess Return	Cumulative Excess Return %
1	1.10	2.26***	-34.73
2	0.40	0.94	-34.33
3	-0.17	-0.40	-34.50
4	-0.12	-0.29	-34.62
5	-0.43	1.01	-34.19
6	-0.08	-0.18	-34.27
7	-0.23	-0.55	-34.5
8	-0.26	-0.61	-34.76
9	-0.22	0.53	-34.54
10	-0.08	-0.20	-34.62
20	-0.27	-0.65	-34.73
30	0.17	0.40	-34.28
40	0.23	0.53	-34.43
50	-0.62	-1.46	-35.17
60	-0.16	-0.38	-36.65

* Significant at the 10% Level
** Significant at the 5% Level
*** Significant at the 1% Level

Days	Cumulative Excess Return	t-Statistics
(-60, -1)	-35.80%	-10.65***
(+1, +39)	1.56%	0.68
(+1, +60)	-0.93%	-0.29

Table 3 shows that long-term stock price reaction to 145 option repricings. The cumulative excess return in the one year period preceding the repricing date is -59% which is not only statistically significant but also economically important. The insignificant average excess return of -1.44% on the month of repricing indicates that stockholders are not affected immediately by repricing, but the long-term effect is very negative. Most firms that reprice their options are already in financial trouble, and repricing does not seem to alleviate the problem. The cumulative excess returns in the 12 months and 24 months following the repricing decline further by 22% and 53%, respectively. The results are consistent with both management entrenchment hypothesis and the asymmetric information hypothesis. The results do not support the employee retention and motivation hypothesis. In fact, a 1998 study cited by the Executive Compensation Advisory Services in Springfield, Virginia finds that companies that repeatedly reprice options have a significant executive departure. This evidence casts doubt that repricing is a useful tool for retaining top executives. If repricing is necessary to retain top employees, we expect to find more repricing at companies within industries that perform poorly. However, Brenner, Sundaram and Yermack (2000) find that option repricing does not seem to occur as a result of industry effect. They also find no evidence that repricing is concentrated in industries where managerial skill is especially important. Similar to the study of Chance, Kumar and Todd (2000) the evidence indicates that firms that repriced options continue to perform poorly in the next 12 to 24 months.

Table 3

The Long-Term Stock Price Reaction to 145 Option Repricing From 1987 to 1997

Month Relative to Announcement Date	Average Excess Return %	t-Statistic of Average Excess Return	Cumulative Excess Return %
-24	2.11	1.08	2.11
-20	0.46	0.24	3.79
-10	-4.11	-2.10**	-14.23
-9	-3.62	-1.85**	-17.85
-8	-3.94	-2.01**	-21.79
-7	-6.13	-3.13***	-27.92
-6	-2.90	-1.48*	-30.82
-5	-3.77	-1.93**	-34.59
-4	-7.03	-3.59***	-41.62
-3	-5.11	-2.61***	-46.73
-2	-8.32	-4.25***	-55.05
-1	-10.01	-5.11***	-65.06
0	-1.44	-0.73	-66.5
1	0.94	0.48	-65.56
2	-2.96	-1.51*	-68.52
3	-3.03	-1.55	-71.55
4	0.21	0.11	-71.34
5	-4.47	-2.28**	-75.81
6	-1.92	-0.98	-77.73
7	-3.73	-1.90**	-81.46
8	-2.67	-1.36*	-84.13
9	-1.92	-0.98	-86.05
10	-0.29	-1.15	-86.34
20	-3.01	-1.54*	-110.33
24	-3.77	-1.92**	-119.22

* Significant at the 10% Level
** Significant at the 5% Level
*** Significant at the 1% Level

Months	Cumulative Excess Return	t- Statistic
(-24, -13)	-6.49%	-0.96
(-12, -1)	-58.60%	-8.64***
(+1, +12)	-21.91%	-3.23***
(+1, +24)	-52.72%	-5.49***

Summary and Conclusion

This study analyses the effect of option repricing on common stock returns. The results indicate that firms tend to reprice option after a period of poor stock performance. The average reduction in exercise price is 48%. More than half of the options also have their maturities extended, generally to a new expiration of 10 years. Although the immediate effect of option repricing on common stock return is neutral, the long-term effect is very negative. Stock prices decline significantly in the 12-month and 24-month periods after options are repriced. The poor stock price

performance in the post-event period is similar to the findings of Chance, Kumar and Todd (2000). The results are consistent with the management entrenchment hypothesis and the asymmetric information hypothesis. There is no evidence supporting the hypothesis that repricing is an effective method to motivate and retain valuable employees.

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