BACK-DATED STOCK OPTIONS AND RESTATEMENTS OF SUSPECT EARNINGS: IS THERE A CORRELATION?

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Abstract

A large number of US companies seem, almost miraculously, to have granted options on dates that coincided with low stock prices. Scholars have documented a pattern of sharp stock appreciation after executives had received stock grants. The pattern suggests that back-dating has occurred. This paper examines whether firms that have restated suspect earnings (we exclude restatements due to backdating) are more likely than non-restaters either to have admitted to back-dating options or to be at risk of being back-daters. We find that both Fortune 500 and non-Fortune 500 restating firms are more likely to be actual back-daters than non-restating firms. Fortune 500 restaters are also more likely to be potential back-daters.

Keywords: Stock Options, Ethics, Earnings Restatements, Stock Options Back-Dating

1. INTRODUCTION

The stock options back-dating scandal started with an article written by a finance professor: Erik Lie of the University of Iowa showed that, prior to 2003, a large number of companies seemed, almost miraculously, to have granted options on dates that coincided with low stock prices (Lie, forthcoming). Lie documented a pattern of sharp stock appreciation after executives had received stock grants. The pattern suggests that back-dating has occurred. Companies generally grant executive stock options at-the-money. Since a stock may go down as well as up, one would expect to see some stock options move into the money, while other options would lose value as the stock price fell below the strike price. But since executives were consistently reaping gains, it looked as if corporate executives were being granted in-the-money options, a practice which increased their compensation, often dramatically. As U.S. Securities Exchange Chairman Christopher Cox succinctly put it, "The purpose of disguising an in-the-money option through back-dating is to allow the person who gets the option grant to realize larger potential gains—without the company having to show it as compensation on the financial statements" (Cox, 2006, p. 1).

The *Wall Street Journal* took up Lie and Heron's theme and did its own investigation. It, too, found that many options granted from 1995 through mid-2002 appear to have been back-dated (Forelle, 2006). As of November 9, 2006, approximately 120 companies had admitted to back-dating stock options. 153 companies had reported internal back-dating probes; 130 are facing federal investigations. Forty-two executives had either resigned or been fired over back-dated options, with five executives having been charged with crimes. Experts estimate that around 850 US CEOs either back-dated or otherwise manipulated stock option grants from 1996 through 2005, inflating their pay, on average, by 10% (Hechinger, 2006). Twelve percent of stock option grants were suspiciously auspicious (Hechinger, 2006). UnitedHealth executives alone have agreed to forfeit $390 million in stock option compensation. At least five former CEOs are facing criminal prosecution. One prominent CEO, fearing prosecution, has fled to Namibia. At least $5.3 billion in profits have been overstated due to misdated options (Bandler and Scannell, 2006).

Back-dating was curtailed by the 2002 passage of the Sarbanes-Oxley Act, which shortened to two days the window for reporting options grants. Still, the problem of back-dating will likely be with us for some time to come. Using earnings quality and litigation risk factors, Audit Integrity, a leading supplier of data to pension funds and investors, has estimated that another 400 or companies may be at risk of having to admit to back-dating (Audit Integrity, 2006). Many companies have opted to pay executives using stock options. When, in 1993, Congress legislated that all non-performance based executive compensation over $1 million would be taxed, it created a powerful incentive for firms to look to non-salary forms of compensation (Forelle and Scannell, 2006). US tax law allows companies to deduct compensation in excess of $1 million if the compensation is not paid as straight salary but as performance-based stock options. In addition, since stock options get taxed at the capital gains rate, firms had a second incentive to adopt them. Finally, beginning back in 1972, employee stock options did not have to be expensed if the exercise price was equal to the market price on the day that the options were granted and if the term of the grant were fixed. Consequently many startup companies, which were short on cash, embraced stock options with a fervor.

Executives loved the options because they could be manipulated in ways that enabled executives to reduce their taxes (Maremont and Forelle, 2006).

These, then, are a few of the financial reasons why stock options have proven to be so popular. Options were likely also popular because, as we noted above, they could be manipulated to pay executives more—a lot more—in a way that was not transparent to shareholders. It takes a strongly principled man or woman not to succumb to temptation. A cursory glance at US business history shows that many American businesspeople have not been overly scrupulous when it comes to enriching themselves. The American language has more words for "con man" than any other language. Many of our celebrated philanthropists earned their fortunes through deceit and resorted to violence to protect their money. Andrew Carnegie, the bond seller, lied to his customers. Carnegie, the iron manufacturer, pressured politicians to grant him tariff protections, brought in the strikebreakers to beat union workers at his Homestead plant, and then spent years denying that he had been involved in the violent beatings (Nasaw, 2006). John D. Rockefeller, founder of Standard Oil, built a company through anti-competitive practices, conspired with the railroads to get kickbacks when they transported oil, and hired men who shot and killed striking miners in Colorado (Chernow, 2005). Leland Stanford, the US senator from California, traded on his political connections to have laws passed that prohibited others from competition with his Central Pacific railroad (Folsom, 1987).

The ease with which stock options can be manipulated appears to have tempted many executives, for a large number of American firms have admitted to back-dating. Once one firm figured out the back-dating technique, it spread like a virus among both Fortune 500 and non-Fortune 500 companies. Preliminary evidence suggests that interlocking directors may have spread the back-dating technique by word of mouth (Corporate Library, 2006). The SEC has been probing possible links among directors who have served on multiple boards (Kristof, 2006). Several private laws may also have been involved: Larry Sonsini, the founder of the Palo Alto law firm Wilson, Sonsini, Goodrich & Rosati served on at least 3 of the boards of firms currently under investigation (Kristof, 2006).

Although looking for interlocking directorships is one way to ascertain which companies are most at risk of back-dating, this approach has its problems. It is often difficult to determine when specific directors came onto a given board. The Corporate Library study mentioned above implied that interlocking board members served simultaneously and were thus enable to "infect" each other with the back-dating concept. But closer study revealed that some of these directors' terms did not, in fact, overlap. Critics have argued that, when one corrects for director service dates, there is no strong relation between interlocking directorships and options back-dating (Johnson, 2006).

In this paper, we consider whether there are other features of a firm that might be less problematically correlated with options back-dating. In particular, we focus on whether Fortune 500 and non-Fortune 500 firms that restated (non-options related) suspect earnings during the period from 2002-2005 are more likely than non-restating firms either 1) to have admitted back-dating options; or 2) to be at higher risk of being option back-daters who have not yet acknowledged engaging in the practice. Many have argued that firms have gotten involved in back-dating because they do not want to operate transparently or wish to minimize their taxes. For reasons stated below, we find it plausible that back-daters typically exhibit few ethical scruples. Firms that have reported suspect earnings and then been forced to restate them may also lack scruples. We hypothesize, therefore, that the same firms may be engaged both in back-dating and financial statement manipulation. This paper focuses on that possible relation.

2. LITERATURE REVIEW FOR EARNINGS RESTATEMENTS AND STOCK OPTIONS BACK-DATING

The literature on earnings restatements is rather thin. While numerous papers have explored governance issues (e.g., the possible effect of having an audit committee or of longer auditor tenure), comparatively less research has been done regarding earnings restatements. This lacuna is somewhat surprising, given that the General Accounting Office reports that the number of earnings restatements is soaring (GAO, 2002). The GAO identified 919 restatements between January 1, 1997 and June 30, 2002; the Huron Consulting Group released a study of 1, 207 restating firms for the period 1998-2002. In 2005, 1,195 US companies restated suspect earnings (versus 270 in 2001) (Reilly, 2006). By September 2006, already 1070 companies had restated. Experts estimate that around 1,300 companies will restate earnings by the end of 2006 (Reilly, 2006).

Wu (2002) documented a dramatic increase in financial restatements throughout the 1990s, even before Sarbanes-Oxley's rules requiring executive certification of earnings became law. Historically, small firms have been more likely to restate than larger firms, but the dynamics seem to be shifting. In recent years, restatements of suspect earnings have increasingly occurred at large, supposedly profitable firms (Owers and Lin, 2002). Most companies do not disclose exactly how the error was found nor do they always specify exactly what type of error had occurred. While some researchers have contended that the upsurge in restatements is due more to aggressive accounting and the misapplication of accounting rules rather than to outright fraud, fraud should not be dismissed as a possible cause: a 1998 survey of CFOs revealed that 45% of those questioned had been asked to misrepresent their companies' financial results, and 38% of the total sample complied with the request (Barr, 1998).

Several studies have shown that restatements lead to short-term drops in market value. The wealth effect depends on the type of restatement. Restatements stemming from mis-management have a negative effect, while the effect of other types of restatements is less pronounced (Salavei and Moore, 2005). Owers et al (2002) categorized types or restatements and discovered that investor reaction was most negative when the restatements involved accounting irregularities or

errors. Aigbe et al (2005) also tied market effects to the type of earnings restatements: earnings restatements are associated with a decline in the firm's value when the market attributes the restatement to a revenue adjustment and/or pressure from the auditor or SEC. Palmrose et al (2001) looked at 403 restatements between 1995 and 1999 and found significant negative average abnormal returns of around 9% during a 2-day announcement window. The extent of the reaction depends on the circumstances leading to the restatement. As one would surmise, the reaction was more pronounced when mismanagement or fraud was involved or when the restatement was initiated by auditors rather than by management itself. If the restatement increased, rather than decreased, current income, the response was rather muted. After studying quarterly earnings restatements, Livnat and Tan (2004) concluded that investors impute a lower earnings valuation coefficient to the earnings of corporations that go on to restate earnings; investors also assign a lower coefficient to the future earnings of firms that have restated one or more times in the past. Wilson (2005), however, found that restatements produced only a short-term decline in investor confidence in firms' financial statements. The effect is transitory, typically disappearing within two quarters.

Richardson et al (2002) found that restating firms report significantly larger accruals than non-restating firms. Accruals at restaters averaged 8.7% of total assets versus 3.9% at non-restaters. The same study found that restaters tend to be high growth companies with high P/E and low book-to-market ratios. DeFond and Jiambalvo (1991) focused on firms that corrected earnings overstatements. They found, *pace* Richardson et al, that slow-growing firms, not high growth firms, were more likely to be restaters. These firms were less likely to have audit committees. Dechow et al (1996) reported that earnings- manipulating firms are more likely to have a founding CEO and less likely to have either audit committees or large outside block-holders. A few studies have explored the possible relation between auditor tenure and the quality of financial statements. Myers et al (2004) paired companies that restated between January 1997 and October 2001 with non-restaters from the same period. That study found that auditor tenure is not significantly correlated with the likelihood of restatements of annual earnings for the entire sample, although misstatements of quarterly financial reports become more probable as auditor tenure increases.

Fich and Shivdasani (2005) have delved into the reputational effect of discovered financial fraud on outside directors. Outside directors who are sued for serving at fraud-committing firms are not removed from these firms' boards at a higher rate than directors at non-fraud firms, but fraudulent firm directors do lose board seats they had at other companies. The more severe the fraud and the greater the responsibility of the individual outside director for the fraud, the more board seats he or she loses. When fraud-associated directors leave the boards of firms that are interlocked with the fraudulent firm, the value of these other firms increases significantly. Some anecdotal evidence also suggests that directors connected with severe frauds lose board seats. At the time of Enron's collapse, the firm's outside directors (11) had a total of 21 seats at other firms. As of early 2006, only two former Enron directors had board seats (Morgenson, 2006). In general, board members rarely have had personally to pay to reimburse shareholders or other parties defrauded by firms on whose board they served.

In only about half of the cases of income-reducing restatements do firms take steps to penalize management. Whether or not a firm penalizes management depends upon the extent of the restatement and whether the board of directors and institutional investors are equity owners (Collins et al, 2005). The higher the level of director equity ownership, the greater the penalty imposed. The same positive relation holds with respect to institutional investor equity. At this point, little is known about whether executives who keep their jobs despite restatements suffer a bonus penalty. What we do know is that firms find it extremely difficult to clawback financial bonuses awarded to executives on the basis of inflated earnings. Often board members are friendly with executives and do not want to damage relations by asking money to be returned. In other cases, executives have filed lawsuits in order to avoid having to return money. Since their former firms may be obligated to pay their legal fees, boards have little appetite to seek a clawback. In addition, the courts have held that only the Securities Exchange Commission (SEC) can initiate clawbacks, which it has yet to do in a single case (Dvorak and Ng, 2006). Even when executives return money to the firm as they did in the UnitedHealth case, the monies recouped are small in proportion to the vast sums of falsely reported earnings: UnitedHealth expects that its restatement will affect the last 12 years of reported earnings.

To date, only a few papers have examined possible connections between the granting of options and the market performance of the granting firm's stock. Yermack (1997) documented that a firm's stock price tends to go up shortly after executives received stock options. Conversely, firms' stock prices have tended to decline immediately before grants are made by these firms (Lie, 2005). As we noted above, Herron and Lie and the *Wall Street Journal* have found striking evidence that stock options were actually back-dated by many companies from 1995 up until the passage of SOX in 2002 (Forelle, 2006).

There have been more studies exploring the possible connection between forms of executive compensation and earnings misrepresentations. Levels of executive pay have exploded in the United States, largely because of the increasing use of stock options to compensate executives (Murphy, 1999). The Securities and Exchange Commission has explicitly linked executive compensation—specifically, stock options—with accounting fraud (SEC, 2001). Alan Greenspan has argued that "the highly desirable spread of shareholding and options among business managers perversely created incentives to artificially inflate reported earnings in order to keep stock prices high and rising" (Greenspan quoted in Provenzo, 2002, p.1). Recent academic studies consider whether stock options tempt executives to manipulate the numbers and make subsequent earnings restatements more likely

(Harris, 2004; Burns and Kedia, 2003). Harris (2004) and Erickson et al (2003) found that accounting fraud becomes more likely when a greater percentage of an executive's compensation is stock-based. Collins et al (2005) reported that, when senior managers own more equity, they are less likely to get fired or to receive lower bonuses in the event of an earnings restatement. American firms, which have used stock options far more than their European and Asian counterparts, have been more likely than their foreign peers to manage earnings to create small positive surprises, while avoiding large drops in earnings (Brown and Higgins, 2001). Brown and Higgins concluded that such earnings management is designed to boost stock prices and to keep options in the money.

To the best of our knowledge, no other study has examined whether there is a significant correlation between the back-dating of stock options and restatements of non-options related suspect financial earnings (i.e., restatements forced by reasons not related to stock options back-dating). Instead of seeking to correlate fraud with firm traits (e.g., does the restating firm have an audit committee) or gatekeeper characteristics (does the restating firm have a longstanding auditor), we here explore whether evidence of one deceitful *action* (filing misleading earnings statements) is correlated with another deceitful *action* (back-dating options).

3. DISCUSSION OF HYPOTHESES

Back-dating of employee stock options is not illegal if various conditions are met (e.g., documents are not forged; shareholders are told about the back-dating; earnings and taxes paid correctly reflect the back-dating). However, these conditions are rarely met. As Lie (2006) observes, almost all back-dating is illegal, because if a company is going to meet all of the above conditions, the firm might as well simply grant in-the-money options in the first place and not bother with back-dating. The firm gets involved in back-dating because it does not want to operate transparently or wishes to minimize its taxes. The back-dating being discussed in this paper is unethical, if not illegal.

Given that the executives and board members at restating firms historically have not suffered much in the way of severe financial or reputational penalties for restating suspect earnings, we hypothesize that these same parties may have been tempted not only to manipulate earnings but also to get involved in back-dating of stock options.

We tested four hypotheses.

Hypothesis 1: *A Fortune 500 restating firm is more likely than a peer Fortune 500 non-restating firm to have back-dated stock options granted to senior management.*

Back-dating hurts shareholders and so do restatements. A firm that is indifferent to shareholders when it comes to manipulating or misreporting income and expenses may be equally indifferent when it comes to giving back-dated options to management. Even if back-dating did not hurt shareholders, the practice is not transparent and thus could be said to be intrinsically deceptive. Insofar as back-dating and misrepresenting earnings are both deceptive practices, it is not farfetched to suppose that they may go hand-in-hand. It should also be noted that both practices often involve deceiving the IRS. Regardless of whether executives exercise their options, they are liable for income tax at the ordinary tax rate if they receive in the-money options. They owe tax on the difference between the exercise price and fair market value of the stock on the date of the award. The executive may have to sell shares to pay this tax. Back-dating enables the executive to evade this tax and to avoid having to sell shares by creating the appearance that the award is not in the money.

There is another reason to think that back-dating and restatements of suspect earnings may be correlated. A number of sociological studies have suggested that people who are part of an "in-group" or "good ol' boy network" have difficulty turning down requests made by other members of the group. If boards at restating firms have succumbed to CEO pressure to accept suspect earnings, these same directors may find it similarly hard to resist a CEO's request that the board enrich the CEO by back-dating options.

Hypothesis 2: *A non-Fortune 500 restating firm is more likely than a peer Fortune 500 non-restating firm to have back-dated stock options granted to senior management.*

The same logic underlying the first hypothesis obtains in this case. However, since smaller, start-up companies often compensate management primarily in the form of stock options, executives of these companies may have been more inclined to pressure boards to back-date their options to increase their compensation. If the executives of these firms have a history of issuing misleading financial reports with a view to driving up the value of their stock and of later restating these earnings, they may be equally inclined to ratchet up their compensation by back-dating their options.

Hypothesis 3: *A Fortune 500 restating firm is more likely than a peer Fortune 500 non-restating firm to be at risk of having back-dated stock options granted to senior management.*

This hypothesis considers companies that have not admitted to back-dating but who have been deemed to be high risk candidates for having done so. Using Audit Integrity data, we look at Fortune 500 companies with relatively aggressive accounting and governance practices, high insider selling, high levels of short-term compensation, and high levels of exercised stock options. AI has shown that companies fitting this profile have an increased risk of being options back-daters even though they may not yet have "come clean." With this hypothesis, we test whether restaters are more likely to be potential/at-risk back-daters.

Hypothesis 4: *A non-Fortune 500 restating firm is more likely than a peer Fortune 500 non-restating firm to be at risk of having back-dated stock options granted to senior management.*

This final hypothesis parallels the third hypothesis, but our focus is on the non-Fortune 500

companies, which are more likely than their Fortune 500 counterparts to compensate executives using stock options grants.

4. METHODOLOGY

A restatement occurs when a company revises official, previously announced earnings. Companies restate for a variety of reasons. Restatements may occur when accounting rules change, when a firm discontinues operations, or when firms merge. Restatements also occur when a firm is discovered to have manipulated earnings. Our database includes only restatements that involve suspect earnings by publicly traded firms. While restatements of suspect earnings do not involve outright fraud, they typically stem from a violation of Generally Accepted Accounting Principles and involve problems with revenue overstatement and/or expense understatement. On the revenue side, restaters were caught prematurely booking revenue, channel stuffing, inflating sales or recording revenues from sales before the items were actually shipped. According to the previously cited GAO study, 38% of restatements involve overly aggressive reporting of revenues. Expense-side "sins" included, but was not limited to, improper capitalization of expenses, overstating inventory, and creating fake inventory. Other types of offenses included lease accounting and barter transactions.

We excluded all restatements resulting from changes in accounting rules, mergers and acquisitions, or other events that have nothing to do with manipulated or fraudulent earnings. Only those restatements that reduced previously announced earnings were included. The database includes firms forced by the SEC to restate earnings and firms whose managers self-initiated restatements of suspect earnings. All of the restatements in our database were announced in 2005 or earlier. *Our database does not include any of the recent restatements that have been precipitated by firms' revelations that they have been back-dating options.* The many back-dating-related restatements that have been announced in 2006 would, of course, be correlated with admissions of back-dating and so these restatements have been excluded.

The list of restating companies was developed in early 2005, incorporating some of the companies already identified in the aforementioned GAO study as firms restating suspect earnings. Following the GAO methodology and that employed by other researchers who have constructed restatement databases, we used the search engine Google, searching on key words "earnings restatement," "restate," "restated," "restating," and "restatement" and then did additional research to unearth why the company restated. By perusing the resulting hits, we were able to ascertain whether a particular firm was forced or pressured to restate earnings because the earnings were in some way deemed suspect (improper revenue or expense recognition, improper accounting for leases, other accounting irregularities, overt fraud, etc.). We identified more than 300 firms that restated earnings. After scrubbing the data to include only income-lowering, suspect earnings restatements from 2002-2004, our database included 113 Fortune 500 restating firms and 136 non-Fortune 500 firms in our restating database. Using SIC codes and firm size, we paired each restating firm with a non-restating firm, creating a database with 226 Fortune 500 firms and 272 non-Fortune 500 firms. Then we double-checked that each non-restating firm did not restate during the study period. Our database includes both Fortune 500 and non-Fortune 500 companies.

This study focused on firms restating earnings during the period 2002 through 2004. The Sarbanes-Oxley bill was signed into legislation in 2002, prompting many firms to restate earnings in that year. Some executives may have decided that now was the time to come clean about past earnings manipulations. Our database is designed to counter any restatement bias introduced by SOX: all sample firms restated 2002, 2003, and/or 2004 annual earnings. We excluded 2005 reported restatements because firms are still restating 2005 financials in 2006. *No restatements attributable to stock options back-dating were included in our database.* In addition, since SOX applies only to firms with annual revenue of more than $75 million, we included only firms of this size. All firms in the database were subject to SOX, so, again, there is no bias toward (or against) restatement resulting from this law.

We developed our database of self-confessed back-dating firms using the *Wall Street Journal*'s listing of all firms that have admitted back-dating. This back-dating database was current as of December 15, 2006. To identify firms at high-risk of being back-daters, we used a database from Audit Integrity (AI). The AI database of high-risk potential back-dating companies includes companies that 1) were, on average, more aggressive in their accounting and governance practices from 1996 to 2002; 2) showed unusually high levels of insider trading between 1996 and 2002; 3) reported unusually high levels of options exercised between 2002 and 2006; and/or 4) have had at least four quarters of unusually high levels of short-term compensation between 2002 and 2006. Around 60% of the *Wall Street Journal*'s admitted back-daters had at least three out of four of these characteristics; 82% had at least two of these characteristics. Back-dating firms appear to have much in common with each other. The AI list of 500 high-risk potential back-daters includes all companies in the AI database of 6500 companies who, like the WSJ confirmed back-daters, failed 3 out of 4 tests. None of the at-risk firms have yet admitted to back-dating, so there is no overlap between the firms that are admitted back-daters and the at risk back-daters.

We performed an independent sample T-Test to compare the mean value of back-dating and of being at risk for each of two groups--restaters and non-restaters. We also conducted a logistic regression analysis to evaluate the likelihood that restaters have admitted to back-dating stock options or are at risk of being back-daters. The earnings restatement score was recoded as 1 if the firm restated; 0, otherwise. This score is modeled as follows:

$$P(\text{Restate Earnings}=1) = 1/\{1+e^{-y}\}$$

$$\text{Where } y = \alpha_0 + ß_1 * \text{Back-dating} + ß_2 * \text{At risk}$$

Backdating: If the firm back-dated stock options. It is coded as 1; 0 otherwise

At risk: If the firm is at risk of back-dating, it is coded as 1; 0 otherwise.

According to our model, the probability of a firm restating suspect earnings is a function of back-dating stock options and of being at risk of back-dating.

5. PRESENTATION AND DISCUSSION OF RESULTS

Hypothesis 1: *A Fortune 500 restating firm is more likely than a peer Fortune 500 non-restating firm to have back-dated stock options granted to senior management.*

This hypothesis was CONFIRMED. The Pearson correlation between restatement and back-dating was positive (.134) and significant at the 5% level (see Table 3). We also conducted the independent sample T-Test of Mean Differences between the two groups: restaters and non-restaters. The mean value of backdating of restaters is .0345, while the mean value of the non-restaters is 0. The mean difference of .0345 between the two groups is highly significant at 5% level (see Tables 4 & 5). We further performed the logistic regression test, which treated restating as the dependent variable and then back-dating and at risk as the independent variables. The model did not yield any significant results that either confirmed or disconfirmed the hypothesis for back-dating. The model, however, did indicate a positive and significant coefficient for the variable "at risk." Results indicate that restaters were more likely to be at risk of backdating stock options than non-restaters (see Table 6).

These results mean that firms caught engaging in earnings manipulation are also more likely than non-restaters to back-date options. Our finding is consistent with recent papers suggesting that earnings manipulation may be part of an effort by executives to drive up their firm's stock price in order to increase the value of their stock options. If executives are determined to maximize their wealth, they likely will be willing to back-date options as well.

Hypothesis 2: *A non-Fortune 500 restating firm is more likely than a peer non-Fortune 500 non-restating firm to have back-dated stock options granted to senior management.*

This hypothesis was CONFIRMED. The Pearson correlation between restatement and back-dating was positive (.222) and significant at the 5% level (see Table 9). We also ran the independent sample T-Test of Mean Differences between the two groups: restaters and non-restaters. The mean value of backdating of restaters is .1985, while the mean value of the non-restaters is 0.0515. The mean difference of .147 between the two groups is highly significant at the 1% level (see Tables 10 & 11). We further performed the logistic regression test, which treated restating as the dependent variable and then back-dating and at risk as the independent variables. The results indicate that back-dating has a positive and significant (at 1% level) coefficient of 12.047. (See Table 12). These results mean that non-Fortune 500 restaters, like their larger Fortune 500 restater counterparts, are highly likely to be options back-daters. The relationship is even more pronounced in the case of these smaller firms. The stronger correlation may be due to smaller firms' greater reliance on stock options to compensate executives. More of these executives receive stock options and thus there are more executives with an incentive to backdate. Moreover, a higher proportion of their pay comes in the form of stock options, so again these executives may be more tempted than their counterparts at larger firms to back-date options. As we noted in our literature review, there is some evidence that the lawyers to start-up firms helped to spread the back-dating practice. If so, then one would expect the back-dating to be more prevalent among the non-Fortune 500 firms.

Hypothesis 3: *A Fortune 500 restating firm is more likely than a peer Fortune 500 non-restating firm to be at risk of having back-dated stock options granted to senior management.*

This hypothesis was CONFIRMED. The Pearson correlation between restatement and being at risk was positive (.271) and highly significant (1%) (see Table 3). We also ran the independent sample T-Test of mean differences between the two groups: restaters and nonrestaters (see Table 4, 5 &6). The mean value of at risk of restaters is .1593, while the mean value of the non-restaters is 0.0088. The mean difference of .1504 between the two groups is highly significant at the 1% level (see Tables 10 & 11). We further performed the logistic regression test, which treated restating as the dependent variable and then back-dating and being at risk as the independent variables. The results indicate that at risk has a positive and significant (at 1% level) coefficient of 8.924. (See Table 12).

These results suggest that an earnings restating firm is more likely to be at risk of back-dating than a non-restating firm. Put differently: restating firms are more likely than non-restaters to employ relatively aggressive accounting and governance practices and to have high insider selling, high levels of short-term compensation, and high levels of exercised stock options, all of which put the firm more at risk of being a back-dater. The correlation between restating and being a potential back-dater may be even stronger than the positive correlation between restating and being an acknowledged actual back-dater because 1) some firms that have back-dated may not yet have admitted doing so but may be showing up in the at risk data base; and 2) having a high level of exercised stock options (one of the characteristics that gets a firm into the at risk of back-dating database) suggests that executives are cashing in, in a big way, on stock options. Firms that have back-dated options for executives typically have done so in order to make the options very lucrative. Hence, one would expect to see executives at back-dating firms exercising large numbers of their granted options, which would flag the company as being a potential or at risk back-dater even if the firm has not yet admitted to actual back-dating.

Hypothesis 4: *A non-Fortune 500 restating firm is more likely than a peer non- Fortune 500 non-restating firm to be at risk of having back-dated stock options granted to senior management.*

This hypothesis was NOT CONFIRMED. The Pearson correlation between restatement and being

at risk was slightly negative (-.035) and not significant (see Table 9). The T-Test revealed a similarly negative and insignificant mean difference (see Tables 4 & 5). The logistic regression test, which treated restating as the dependent variable and then being at risk as the dependent variable, revealed no significant correlation (see Table 12).

This result was puzzling: why was there a highly significant correlation between restating and being at risk of back-dating in the case of Fortune 500 companies but no significant correlation in the case of non-Fortune 500 firms? Perhaps the non-Fortune 500 firms have more quickly come clean about being back-daters. Since such firms are small; and since the board members and CEOs may know each other very well, there may be little need for the non-Fortune 500 board to mount a time-consuming investigation into whether back-dating has occurred. Or, given that smaller firms may have fewer resources for filing legal motions and fighting regulators, management at these firms may simply decide to admit to back-dating once they are caught in the act. In both of these cases, back-daters would show up in our database of actual backdaters but not in the at risk database (which, by definition, includes no admitted or actual back-daters). This explanation would account for why among non-Fortune 500 companies the correlation between restatement and actual back-dating is so strong (see Hypothesis 2) but insignificant between restatement and being at risk of being a back-dater.

6. CONCLUSION

While some people have argued that the back-dating of options is simply an alternative way for firms to provide performance- or market-based pay (Jenkins, 2006), our results support a more sinister interpretation. Since back-dating is significantly correlated with the restatement of non-options related suspect earnings at both large and small firms; and since the need to restate suspect earnings is itself an indicator that the firm has been operated in a misleading or even fraudulent manner, the practice of back-dating should not be dismissed as ethically insignificant. On the contrary, our results suggest that senior management at many firms is willing to do whatever it takes to pad their compensation—overstate revenue, understate expenses, back-date options. Both back-dating and reporting suspect earnings involve lying, and, as Nancy Rappaport has argued, "what we're learning from [Enron] and other corporate scandals…is that lying is at the heart of most bad decisions" (Rappaport, 2006, p.49).

Instead of seeking to correlate fraud with firm traits (e.g., does the restating firm have an audit committee?) or gatekeeper characteristics (does the restating firm have a longstanding auditor?), we have asked whether evidence of one deceitful action (filing misleading earnings statements) is correlated with another deceitful action (back-dating stock options). The answer is a resounding "yes." Aristotle thus seems to have been correct when he argued that people's characters and virtues are of a piece. Those who show courage and understand what that virtue involves are more likely to be just, temperate, and appropriately sociable as well. By analogy, we could say that firms that speak and live the truth when they speak about their earnings are more likely to act truthfully as well, dating options correctly and paying executives in a transparent way. Investors would be well-advised to think long and hard before buying stock in firms that have admitted to one deceit as other lies may be forthcoming.

TABLES

Table 1. Fortune 500 Firms Frequency Distribution for Three Variables:Restatement of Earnings, Back-dating of Stock Options, and At Risk of Back-dating

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Restate or not[a]					
N	.00	113	50.0	50.0	50.0
N	1.00	113	50.0	50.0	100.0
	Total	226	100.0	100.0	
Back-dating[b]					
N	.00	222	98.2	50.0	50.0
N	1.00	4	1.8	50.0	100.0
	Total	226	100.0	100.0	
At Risk[c]					
N	.00	207	91.6	91.6	91.6
N	1.00	19	8.4	8.4	100.0
	Total	226	100.0	100.0	

A: 1 for restaters and 0 for non-restaters
B: 1 for backdaters and 0 for non-backdaters
C: 1 for firms at risk and 0 otherwise

Table 2. Fortune 500 Firms Descriptive Statistics: Restatement of Earnings, Back-dating of Stock Options, and At Risk of Back-dating

		Restate_or_Not	*Back-dating*	*At Risk*
Sample Size	Valid	226	226	226
	Missing	0	0	0
Mean		.5000	.0177	.0841
Median		.5000	.0000	.0000
Std. Deviation		.50111	.13215	.27811
Variance		.251	.017	.077
Range		1.00	1.00	1.00
Minimum		.00	.00	.00
Maximum		1.00	1.00	1.00

Table 3. Fortune 500 Firms Correlation Coefficients among Three Variables

		Restate_or_Not	*Back-dating*	*At Risk*
Restate_or_Not	Pearson Correlation	1		
	Sig. (2-tailed)			
	Sample Size	226		
Back-dating	Pearson Correlation	.134**	1	
	Sig. (2-tailed)	.044		
	Sample Size	226	226	
At Risk	Pearson Correlation	.271***	-.041	1
	Sig. (2-tailed)	.000	.543	
	Sample Size	226	226	226

** *Correlation is significant at the 0.05 level (2-tailed)*
*** *Correlation is significant at the 0.01 level (2-tailed)*

Table 4. Fortune 500 Firms Mean Value of Back-dating and At Risk between Two Groups: Restaters (1) and Non-Restaters (0)

	Restate vs. Non-restate	*Sample Size*	*Mean*	*Std. Deviation*	*Std. Error Mean*
Back-dating[a]	0	113	.0000	.0000	.0000
	1	113	.0345	.1856	.0175
At Risk[b]	0	113	.0088	.0941	.00885
	1	113	.1593	.3676	.03458

a: The firm has admitted to back-dating stock options.
b: The firm is on the list of at risk of being back-daters.

Table 5. Fortune 500 Firms Independent Samples T-Test for Equality of Means of Back-dating and At Risk between Two Groups: Restaters (1) and Non-Restaters (0)

	Mean Difference[a]	*F Statistics*	*Sig.*	*T Statistics*	*Df*
Back-dating	.0345**	17.71	.044	2.27	224
At Risk	.1504***	99.31	.000	4.215	224

a: The mean value of the back-dating score of restating firms minus the mean value of the back-dating score of non-restating firms (1-0).
***, ***: Significance at .05 and .01 levels, respectively*

Table 6. Fortune 500 Firms Results of Logistic Regression Analysis:

This table examines the likelihood that restaters are also back-daters or are at risk of back-dating stock options. Three models are used. Model 1 treats restating as the dependent variable and back-dating and at risk are the independent variables. Model 2 treats back-dating as the dependent variable, and restating and at risk are the independent variables. Model 3 treats at risk as the dependent variable, and back-dating and restating are the independent variables.

	Model 1 Dependent variable: Restating[a]	*Model 2 Dependent variable: Back-dating*[b]	*Model 3 Dependent variable: At Risk*[c]
Restating		.0001 [d]	8.924 [d] ***
Back-dating	.0002[d]		.0001 [d]
At Risk	8.924 [d] ***	.0000 [d]	
Constant	2.165*	.0000	22.067
Log likelihood	287	33.17	109.13
Model x^2	26.226	7.033	21.318

a: Coded as 1 if the firm restated earnings ; 0 otherwise.
b: Coded as 1 if the firm back-dated stock options; 0 otherwise.
c: Coded as 1 if the firm is classified as at risk; 0 otherwise.
d: Wald statistics
,*: Significance at the .1 and .01 levels.*

Table 7. Non-Fortune 500 Firms Frequency Distribution for Three Variables: Restatement of Earnings, Back-dating of Stock Options, and At Risk of Back-dating

Variables		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Restate or not					
N	.00	136	50.0	50.0	50.0
N	1.00	136	50.0	50.0	100.0
	Total	272	100.0	100.0	
Back-dating					
N	.00	238	87.5	87.5	87.5
N	1.00	34	12.5	12.5	100.0
	Total	272	100.0	100.0	
At_Risk					
N	.00	241	88.6	88.6	88.6
N	1.00	31	11.4	11.4	100.0
	Total	272	100.0	100.0	

Table 8. Non-Fortune 500 Firms Descriptive Statistics: Restatement of Earnings, Back-dating of Stock Options, and At Risk of Back-dating

Descriptive Statistics	*Restate_or_Not*	*Back-dating*	*At Risk*
Sample Size	272	272	272
Mean	.5000	.1250	.1140
Median	.5000	.0000	.0000
Std. Deviation	.5009	.3313	.3183
Variance	.251	.110	.101
Range	1.00	1.00	1.00
Minimum	.00	.00	.00
Maximum	1.00	1.00	1.00

Table 9. Non-Fortune 500 Firms Correlation Coefficients among Three Variables

		Restate_or_Not	*Back-dating*	*At_Risk*
Restate_or_Not	Pearson Correlation	1		
	Sig. (2-tailed)			
	Sample Size	272		
Back-dating	Pearson Correlation	.222**	1	
	Sig. (2-tailed)	.000		
	Sample Size	272	272	
At Risk	Pearson Correlation	-.035	.074	1
	Sig. (2-tailed)	.569	.222	
	Sample Size	272	272	272

*** Correlation is significant at the 0.01 level (2-tailed).*

Table 10. Non-Fortune 500 Firms: Mean Value of Back-dating and At Risk between Two Groups: Restaters (1) and Non-Restaters (0)

	Restate vs. Non-restate	*N*	*Mean*	*Std. Deviation*	*Std. Error Mean*
Back-dating[a]	0	136	.0515	.22177	.01902
	1	136	.1985	.40037	.03433
At__Risk[b]	0	113	.1250	.0941	.00885
	1	113	.1029	.3676	.03458

a: The firm has admitted back-dating stock options.
b: The firm is on the list of firms at risk of being back-daters.

Table 11. Non-Fortune 500 Firms Independent Samples T-Test for Equality of Means of Back-dating and At Risk between two groups: Restaters (1) and Non-Restaters (0)

	Mean Difference[a]	*F Statistics*	*Sig.*	*T Statistics*	*Df*
Back-dating	.147***	67.63	.000	3.747	270
At Risk	-.0221	1.308	.569	-.571	270

a: The average back-dating score of restating firms minus the average back-dating score of non-restating firms.
****: Significance at .01 level*

Table 12. Non-Fortune 500 Firms Results of Logistic Regression Analysis

This Table describes the likelihood that restaters are also back-daters or are at risk of backdating stock options. Three models are used. Model 1 employs restating as the dependent variable and back-dating and at risk are the independent variables. Model 2 employs back-dating as the dependent variable and restating and at risk are the independent variables. Model 3 employs at risk as the dependent variable and back-dating and restating are the independent variables.

	Model 1 Dependent variable: RS[a]	*Model 2 Dependent variable: Back-dating[b]*	*Model 3 Dependent variable: At Risk[c]*
RS		12.047***[d]	.766[d]
Back-dating	12.047***[d]		1.952[d]
At Risk	.766[d]	1.952[d]	
Constant	.942	56.362	22.067
Log likelihood	362	189	191
Model x^2	15.016***	16.031***	2.117

a: Restatement or not. If the firm restated earnings, it is coded as 1, 0 otherwise.
b: coded as 1 if firm back-dated stock options; 0 otherwise.
c: coded as 1 if the firm is classified as at risk; 0 otherwise.
d: Wald statistics
****: Significance .01 levels.*

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