

Executive Turnover Following Option Backdating Allegations

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June 22, 2012

Acknowledgements: We are grateful to Burch Kealey for providing data from Direct Edgar and to Dichu Bao for her research assistance. We thank participants at the 2011 meeting of the AAA Financial Accounting and Reporting Section for helpful comments. Swanson gratefully acknowledges financial support from the Durst Accounting Chair at the Mays Business School of Texas A&M.

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ABSTRACT: We find the likelihood of forced turnover in the CEO and CFO positions is significantly higher in the aftermath of option backdating than in propensity-score-matched control firms. Forced turnover occurs in about 36 percent of the accused firms. The forced turnover rates for CEOs and CFOs are similar and several times higher than normal. The displaced managers are further punished by the managerial labor market, as they are much less likely than control firm managers to be rehired at comparable positions. We also find that backdating firms restructure CEO compensation to rely less on stock options. Finally, we learn the higher turnover extends to the General Counsel. While boards are often viewed as unresponsive to criticisms involving executive compensation, they did respond quite decisively to option backdating allegations and the accompanying adverse publicity.

Keywords: compensation, option backdating, executive turnover, corporate governance, managerial labor market

Data Availability: All data used in this study are publicly available from the sources indicated.

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I. INTRODUCTION

Allegations of option backdating have been directed at numerous well-known public companies, including Microsoft, Apple, Home Depot, Costco, and United Health. Backdating occurs when executives — either with or without the knowledge of the Board of Directors — designate as the grant date a day earlier than the one on which the board actually made the decision to grant options. Managers typically select an earlier date when the market price was lower, so they receive options that are already “in-the-money” on the actual grant date. Backdating is usually identified indirectly. Its occurrence is indicated when the stock price on the designated grant day is unusually low compared to surrounding days and, therefore, highly unlikely to have been chosen by chance. In this study, we investigate the response of the Board of Directors and the managerial labor market (i.e., private-sector monitoring mechanisms) to an allegation of option backdating. We provide a comprehensive investigation by examining (1) whether the rate of forced CEO and CFO turnover increases, (2) whether the displaced executives are rehired at comparable positions, and (3) whether executive compensation is restructured at backdating firms to rely less on stock options. In an extension, we examine whether turnover increases for the General Counsel (GC), reflecting the GC’s role in preparing compensation contracts and overseeing financial disclosures.

A priori, it is uncertain that the managers involved in option backdating will be significantly disciplined. First, evidence indicates that director interlocks contributed to the spread of backdating (Bizjak et al. 2009, Bebchuk et al. 2010). This suggests that directors at

some companies knew of, and may have even suggested, the use of backdating.¹ Second, directors have few personal incentives to fire, or otherwise significantly discipline, top managers as long as the company is profitable. In fact, one view of the role of directors is that they serve primarily as advisors to management, because time and information constraints limit their ability to be effective monitors (Ferris et al. 2003). Third, option backdating involves executive compensation. The authorization of record bonuses to top Wall Street executives one year after the 2008 financial crises illustrates how boards can be unresponsive to public outcry about executive compensation. Their reluctance to closely monitor manager pay, particularly the use of stock options, has led to the recent “say-on-pay” legislation.² Fourth, the stock market reaction to backdating revelations is relatively small (mean of -2.5 percent, Bernile and Jarrell 2009), especially in comparison to that of the accounting irregularities shown to significantly increase manager turnover (mean of -11.0 percent, Desai et al. 2006). Finally, prior research shows that backdating is more likely at firms in which the managers have considerable power over the Board of Directors and the compensation committee (Collins et al. 2010; Bebchuk et al. 2010). Applying the “managerial power” theory of Bebchuk and Fried (2004), the same power that enabled managers to backdate their options could also protect them from being disciplined for doing so. These characteristics cause option backdating to be less likely to result in forced executive turnover and/or restructured compensation than the types of accounting irregularities

¹ A reasonable argument can be made that the managers’ incentives are better aligned with those of stockholders when the managers’ stock options are in-the-money (Dieker and Hemmer 2007; Gao and Mahmudi 2008). However, this argument presumes transparent disclosure, which option backdating firms did not provide.

² This legislation gives shareholders a non-binding vote on executive pay. Lowenstein (2012) espouses the view that CEOs benefit from an agency problem in which managers “exploit their role as intermediaries. They thrive in imperfect markets in which pay scales do not respond quickly, if at all, to results.” Lowenstein cites several examples of eight- and nine-figure pay packages recently approved by boards despite poor firm performance. He believes the system is sufficiently broken that the “say-on-pay” vote should be made binding so as to “let shareholders be their own agents.”

studied in prior research. In fact, only the view that boards serve primarily as advisers is clearly applicable to other accounting irregularities.

Option backdating also has some characteristics that increase the likelihood of board action. First, backdating usually results in a violation of GAAP and it may violate tax and securities laws (Narayanan et al. 2007). Second, press coverage of backdating was extensive and highly critical. The *Wall Street Journal* (WSJ) profiled several of the companies in a series of front-page, Pulitzer Prize-winning articles; and Bloomberg, WSJ, and other news outlets maintained a continuously updated list of companies accused of backdating (e.g., Forelle and Bandler 2006). Third, option backdating usually triggers an accounting restatement and/or regulatory investigation. Prior research shows that these events increase the likelihood that a board disciplines the managers involved (Desai et al. 2006). Ultimately, the question of whether, and to what extent, the executives responsible for backdating are punished is an empirical question. To our knowledge, the only evidence to-date is by Bernile and Jarrell (2009) who examine manager turnover, but it is only a small part of their study.³

Our empirical tests are based on a final sample of 141 firms with backdating news during 2005 or 2006. We identify turnover in the positions of CEO or CFO (and the General Counsel in an extension). Each instance of turnover is classified as voluntary or forced, using criteria similar to that used by Huson et al. (2001). We then compare the forced turnover rate at backdating firms to that for executives at an equal number of propensity-score matched control firms.⁴

³ Bernile and Jarrell (2009) consider factors that could influence whether backdating results in management turnover in developing an instrumental variable to determine the effect of management turnover on cumulative abnormal returns around backdating news events. They conclude that stock prices increase (do not change) in response to manager turnover when the firm's prior stock performance was below (above) the industry average. We expand considerably on their analyses and add several new insights about the conditions under which managerial turnover increases.

⁴ We use a propensity-score matching algorithm to identify observations that have similar incentives to backdate stock options (see section III for details). We also replicate the turnover analyses using a second set of control firms

Univariate comparisons show that forced turnover of either the CEO or CFO occurs in 36.2 percent of the firms accused of option backdating, compared to only 10.6 percent of the control firms. Turnover rates for the CEO and CFO are 24.1 and 24.8 percent, respectively, which are more than three times greater than control firms. The similar forced turnover rate for CEOs and CFOs suggest they are held equally accountable for backdating. An appendix provides press release excerpts for three companies that forced executives to leave for backdating stock options.

Next, we conduct a multivariate analysis that includes controls for other factors known to influence executive turnover, including stock returns before and after the backdating revelation. Positive stock returns have been shown to have an especially strong effect in reducing turnover. We again find a positive and highly significant ($p < 0.01$) relation between option backdating and executive turnover, with the odds of forced CEO or CFO turnover twice as high in backdating firms as in control firms. We also consider whether turnover at backdating firms is related to the initiation of a regulatory investigation (by the Securities and Exchange Commission (SEC), Department of Justice (DOJ), or Attorney General's Office) and/or an accounting restatement. In general, we find turnover is closely related to these factors. Backdating leads to restatements and to investigations, which in turn are associated with top executive turnover. We also learn that turnover likelihood is reduced under two conditions: 1) stock returns are more positive, or 2) the CEO is a firm founder. Firm founders likely have considerable power within the company and often have skills that are very costly to replace, making forced dismissals of these individuals uncommon.

To provide a more complete analysis of the effect of backdating on executives, we evaluate the *ex post* settling up in the managerial labor market by tracking the subsequent

that are matched on industry, time period, and size and again find significantly higher turnover in backdating firms (untabulated).

employment of displaced CEOs and CFOs. We find that executives from backdating firms are significantly less likely to be rehired at comparable positions, relative to their displaced counterparts at control firms. To illustrate, about 48 percent of displaced backdating executives are hired as an employee at another public or private firm, compared to 84 percent at control firms. We corroborate that backdating significantly reduces employment opportunities using a multivariate model that includes controls for firm performance (using returns and ROA), risk, and CEO characteristics. Three findings are noteworthy: (1) The managerial labor market penalizes executives without regard to whether backdating resulted in a restatement of financials or a regulatory investigation. This suggests that all backdating allegations act as a negative signal to the managerial labor market about the individuals' trustworthiness. (2) Managers who held the dual position of CEO and board Chair are less likely to obtain a top managerial position. They may be perceived as more responsible for the breakdown in fiduciary duty inherent in option backdating. Also, they may be viewed as less willing to accept oversight by a board Chair if hired as a CEO. (3) Founder CEOs are more likely to obtain a comparable managerial position. They may have especially strong product development skills and/or educational backgrounds but less knowledge about the accounting and disclosure requirements for option compensation.

Next, we investigate whether backdating firms restructure executive compensation to rely less on stock options. An incident of backdating suggests the compensation structure is not optimal and boards would want to correct an apparent incentive misalignment. Alternatively, boards may believe that compensation changes are unnecessary because the Sarbanes-Oxley Act (SOX) contains a provision accelerating the reporting of option grants to two business days (from the 10th day of the month). Evidence provided by Heron and Lie (2007), however, indicates that backdating incidences are reduced, but not eliminated, after this provision became

effective. Our tests show that the number of options granted to the CEO declines significantly more in backdating firms than in control firms during the two years following the backdating event. Consistent with Cheng and Farber (2008), who study misstatements arising, in part, from option compensation in the 1990s market bubble, we find that the use of stock options is reduced for both new and continuing CEOs.

Our final test extends the turnover analysis to include the firm's General Counsel.⁵ The business press and regulators have scrutinized the GC's role in the integrity of reported information, but the GC has received little attention in prior academic research. Option backdating provides a setting in which GC responsibility is high because a contract is involved. We find a significantly higher turnover rate in backdating firms than in propensity-score matched control firms. In contrast to turnover for the CEO and CFO, the GC turnover rate is not affected by whether backdating results in a regulatory investigation or an accounting restatement. This is consistent with the notion that GCs bear significant responsibility in oversight of contracts, as well as financial reporting and disclosure (Choudhary et al. 2012). Alternatively, it may simply be that GCs are less costly to replace than CEOs or CFOs.

Our study adds to a line of research that explores the effectiveness of private-sector mechanisms in disciplining corporate managers for a variety of corporate failures. This research is important because the need for regulation is reduced when private-sector mechanisms are effective. Our study is most closely related to concurrent research by Ertimur et al. (2012), who study the effect of option backdating on the reputation of outside directors. They find that votes are withheld when directors are up for election and that director turnover is higher after a backdating revelation, especially for members of the compensation committee. An important link

⁵ We treat the GC analysis as an extension of the primary analysis because GC data are less complete than for the other executive positions. The appendix includes an excerpt from the press release of Monster Worldwide Inc., who fired their GC over option backdating.

between our studies is that we investigate factors influencing CEO turnover, and Ertimur et al. (2012) find that director turnover at backdating firms is significantly more likely when CEO turnover occurs. Taken together, the two studies show that the CEO, CFO, GC, and compensation committee members are held accountable at companies alleged to have backdated options.⁶ Our study also adds to prior research that examines whether CEO compensation contracts are revised following events that suggest incentive misalignment. Our results are most closely related to Cheng and Farber (2008), who find that companies recontract with both new and continuing CEOs to reduce option-based compensation after an accounting misstatement.

In the next section, we discuss prior research on option backdating and develop hypotheses about the private-sector response to backdating. In Section III, we describe the sample. The three subsequent sections present empirical results: Sections IV, V, and VI cover executive turnover, subsequent employment, and compensation changes, respectively. Section VII extends the turnover analysis to consider the General Counsel and presents robustness tests. We conclude in Section VIII.

II. BACKGROUND AND HYPOTHESES DEVELOPMENT

Option Backdating Background

Stock option compensation has become increasingly common since the 1990s, with a corresponding increase in option-related accounting abuses (Efendi et al. 2007).⁷ This pattern

⁶ One caveat is that Ertimur et al. (2012) find that the penalties for directors (fewer votes and higher turnover) do not carry over to director positions at non-backdating firms. This finding causes them to question whether the penalties are large enough to have an *ex ante* effect on directors' incentives to monitor CEO pay. In contrast, we find that displaced CEOs and CFOs are significantly less likely to obtain comparable employment. Nevertheless, we find that many of the displaced executives do become nonemployee directors at other firms. Both studies therefore indicate the market for directors is more forgiving, or less efficient, than the employee market.

⁷ Financial reporting practices and tax rules have played an important role in the increase in executive stock options. Until June 2005, Accounting Principles Board (APB) Opinion No. 25 required that stock options be recognized at intrinsic value in the financial statements. At-the-money options have zero intrinsic value, thus most companies were not required to recognize compensation expense. Internal Revenue Code (I.R.C.) § 421 and § 422 allows favorable tax treatment for recipients, allowing stock option gains to be taxed at the capital gain rate. For a company

increases the importance of understanding whether boards are taking actions in response to abuses. Several studies find that option grant dates often coincide with a date on which the company's stock price is at or near its lowest value (Yermack 1997; Lie 2005; Heron and Lie 2007; Bebchuk et al. 2010). The likely explanation for this pattern is option backdating. For example, executives at Brocade Corporation allegedly backdated two million shares of stock options between October 2001 and January 2002. On one grant date, Brocade's stock was trading for \$36.56 per share, but the executives reported a date when the stock price was \$24.20, so each option was immediately \$12.36 in-the-money. The practice of retrospectively assigning option grant dates is not illegal *per se*, if properly recorded and disclosed. However, most companies, including Brocade, report that options are granted "at-the-money," so the amount of compensation expense is understated in their financial statements.⁸

Hypotheses

Executive Turnover

Prior research on executive turnover has established that poor operating performance or financial distress leads to management changes (Coughlan and Schmidt 1985; Warner et al. 1988; Murphy and Zimmerman 1992; Huson et al. 2003). Research on turnover following adverse events is less conclusive. Studies have found turnover increases in response to accusations of fraud or regulatory investigations (Feroz et al. 1991; Karpoff et al. 2008), restatements to correct non-GAAP accounting practices (Desai et al. 2006; Arthaud-Day et al. 2006; Hennes et al. 2008), or class action lawsuits (Collins et al. 2009; McTier and Wald 2011). Nevertheless, not all such studies find higher turnover. Beneish (1999) and Agrawal et al. (1999) report no significant

granting "in-the-money" options, however, the intrinsic value of an option is not tied to performance and therefore is subject to I.R.C. § 162(m), which limits annual corporate deductions for executive compensation to \$1 million.

⁸ Companies that restate for backdating usually disclose the backdating period. The disclosures indicate that options were backdated for an average of 5.7 years, with over half the firms initiating backdating between 1997 and 2001.

difference in turnover rates in response to GAAP violations and fraud accusations, and CEO turnover rates following restatements in the period after SOX seem to be lower. Burks (2010) finds that when disciplining CEOs after SOX, boards gravitate away from termination and toward bonus penalties, a development commensurate with the less severe restatements of the post-SOX period. In addition, Hammersley et al. (2012) report that CEOs and CFOs retain their positions even when failing to remediate previously-disclosed material weaknesses in internal control over two consecutive annual reporting periods.

The conflicting forces described in the introduction and mixed evidence regarding the impact of adverse events on executive turnover, especially in our post-SOX time period, do not generate a clear *ex ante* prediction of a positive relation between option backdating and executive turnover. Retaining current executives may be a rational response to the costs of turnover, which can include large severance payments, disruption of day-to-day activities, and uncertainty about the competency of replacements. Our first hypothesis is therefore non-directional:

H₁: The incidence of executive turnover is no different in backdating firms than in matched control firms.

Future Employment of Displaced Executives

In addition to turnover, we investigate the subsequent employment of displaced managers to gain deeper insight into the role of the managerial labor market as a private-sector disciplining mechanism. Prior research argues that firms are reluctant to lose high-quality executives, so departure acts as a negative signal to the managerial labor market about that individuals' ability (Greenwald 1986). If the managerial labor market views backdating as a serious abuse of managers' fiduciary responsibility, we would expect these managers to be less likely to be rehired at comparable positions compared to their counterparts at control firms. However,

managers displaced because of backdating allegations may be more skilled than other managers in the job market, especially those released for poor firm operating performance. If so, we may find higher rehire rates for these executives relative to the managers at control firms. Our second hypothesis is thereby non-directional:

H₂: Subsequent employment for displaced executives from backdating firms is no different from that of displaced executives from control firms.

Compensation Changes

Backdating firms may restructure compensation contracts to rely less on stock options. Several studies have found a link between option-based compensation and opportunistic behavior by management (Aboody and Kasznik 2000; Baker et al. 2003; Cheng and Warfield 2005; Bergstresser and Philippon 2006; Burns and Kedia 2006; Efendi et al. 2007; Collins et al. 2010). Specific to the occurrence of option backdating, Collins et al. (2010) provide evidence that a higher proportion of compensation from options increases the likelihood of backdating. Anecdotal evidence indicates that some firms are revamping their compensation policies to avoid similar problems in the future. For example, KB Home stated in a 2007 press release that it will “require all grants of equity-based compensation...to be approved by the management development and compensation committee,” and that the committee is not allowed to delegate any of its authority to management.⁹

If equity-based compensation creates incentives to backdate stock options, boards should re-contract with their current CEOs or revise contracts for new managers to alter these incentives. While SOX accelerates the reporting of option grants on SEC Form 4 to two business days from the 10th of the month, Heron and Lie (2007, 294) conclude “the new reporting requirements [of SOX]...have not eliminated [option backdating].” We expect that boards act to reduce the use of

⁹ “KB Home tightens stock compensation policy after CEO resigns,” Associated Press Newswires, March 19, 2007.

option compensation. Our hypothesis is directional because it is not plausible that boards would increase the use of option compensation after an incident of backdating.

H₃: Following a revelation of backdating, those firms reduce the proportion of compensation from stock options to a greater extent than control firms.

III. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Selection of Sample and Control Firms

We obtain our backdating sample by searching the popular press and newswires for allegations of option backdating. We begin with a list compiled by the WSJ of firms suspected of option backdating as of December 31, 2006. We supplement this initial sample by examining similar lists compiled by Reuters and Bloomberg, and by searching Factiva for any additional firms that announce either a self-review of their stock option award practices or a shareholder lawsuit due to alleged backdating. Appendix 1 presents excerpts of public announcements issued by three sample companies. This process generates an initial sample of 240 backdating firms.

For each firm, we then define the backdating “event date” as the date on which the firm is *initially* identified as a potential stock option backdater. This event could be inclusion in the WSJ, Bloomberg, or Reuters lists, the announcement of a self-review by the company, the initiation of a regulatory investigation, or the filing of a class action lawsuit, among other events. As there is no fixed chronological order to these events, the event occurring first is designated as the backdating event. After deleting 91 firms without data needed for our analyses and eight foreign-incorporated firms, our final sample is comprised of 141 backdating firms, two of which are identified as potential backdaters in 2005 with the remaining firms identified in 2006 (see Table 1, Panel A).

<Insert Table 1 Here>

Table 1, Panel B, reports the distribution of backdating firms across 25 different industries. About twenty-six percent of the backdating firms are in the business services industry. This high incidence is not surprising since technology-based firms rely heavily on stock options as a form of compensation. Another twenty-one percent of the sample falls in the electrical and electronic equipment industry and eleven percent in the commercial machinery and computer industry.

Next, we use a propensity-score, matched-pair research design to generate a sample of control firms with contracting and governance environments intended to mimic that of the backdating firms. The propensity-score procedure allows us to efficiently match along multiple dimensions, while not requiring assumptions about the functional form of the relation between backdating and turnover (Armstrong et al. 2010). We begin with a sample that consists of each backdating firm identified above ($n = 141$), plus all 1,136 non-backdating firms in the same year with the data needed from Risk Metrics, Compustat, and CRSP to calculate the independent variables. Using this sample of 1,277 observations, we estimate a logistic regression where the dependent variable, *BACKDATE*, is equal to 1 if the firm is accused of option backdating, and 0 otherwise. We use as covariates those firm and governance characteristics that Collins et al. (2010) identify as significantly impacting the likelihood of option backdating, including *CEO TENURE*, *INTERLOCKING*, *lnVOLATILITY*, *BIGN*, *lnASSETS*, and *HIGH TECH*.¹⁰ The

¹⁰ *CEO TENURE* is the number of years that the CEO has served as CEO of the firm; *INTERLOCKING* is an indicator variable equal to 1 if at least one director also sits on a second board for the same fiscal year and the second board is at a backdating firm, and 0 otherwise; *lnVOLATILITY* is the natural logarithm of the standard deviation of stock returns over the prior 60 months; *BIGN* is an indicator variable equal to 1 if the auditor in the prior year is a Big N auditor, and 0 otherwise; *lnASSETS* is the natural logarithm of total assets as of the fiscal year prior to the event date; *HIGH TECH* is an indicator variable equal to 1 for firms with SIC codes between 7370 and 7379 (computers, electronic equipment, or measuring and control equipment industries) and 0 otherwise. These covariates were chosen from the list of statistically significant variables included in Table 4 of Collins et al. (2010, 421) for which we had non-missing data for our backdating firms.

untabulated logistic regression has reasonable explanatory power, with an adjusted pseudo- R^2 of 18.1 percent.

<Insert Table 2 Here>

Using this model, a propensity score is derived for each observation based on its predicted probability of backdating. We then match each backdating firm without replacement to one unique control firm by identifying pairings that result in the smallest propensity-score differences. Table 2, Panel A, compares the covariate mean and median values across the backdating and non-backdating control firms, along with p-values for the t-test and Wilcoxon test of differences. We find the firms are similar, except that *lnVOLATILITY* is significantly higher for backdating firms than control firms, although even these differences do not appear large with median *lnVOLATILITY* of -1.74 and -1.82 at backdating and control firms, respectively. The matching algorithm was therefore successful in achieving balance for most covariates.¹¹

Descriptive Statistics

Table 2, Panel B, compares our backdating and propensity-score matched control firms across additional financial and corporate governance measures used in prior research. Each measure is calculated in the year prior to the event date, unless otherwise indicated. We compare the mean and median values of the backdating firms to the control firms using a t-test and a Wilcoxon test, respectively.

Comparing financial data, the differences between backdating and control firms are not statistically significant for market value, book-to-market ratio, debt-to-assets, idiosyncratic risk, operating accruals, or total accruals. However, control firms have marginally ($p < 0.10$) higher

¹¹ As a sensitivity test, we re-estimate the logistic regression predicting turnover (Table 4) after adding the covariates used in the propensity-score model. Untabulated results are consistent with those presented.

accounting profitability measured by return-on-assets (*ROA*). Control firms also have slightly better median stock price performance one year after the backdating event (*POST RETURNS* of 0.13 versus 0.10, $p < 0.10$), although the mean stock returns one year after the backdating event are not significantly different.

Comparison of governance measures also reveals modest differences. Compared to control firms, the Board of Directors at backdating firms consist of a significantly lower percentage of inside directors (median of 22.2 percent versus 28.6 percent) and gray directors (median of 0.0 percent versus 9.1 percent), and tend to be more active with a median of eight annual board meetings for backdating firms versus seven for control firms. However, the proportion of CEOs that also act as board Chair is similar for backdating and control firms, as is the incidence of the firm founder serving as CEO. Relative to their matched peers, backdating firms have a higher percentage of institutional ownership (median of 27.0 percent versus 23.6 percent), but the proportion of shares held by insiders does not differ across the samples. Neither CEO age nor tenure is significantly different between backdating and control firms. The CFOs in both samples are of similar age, but CFOs at backdating firms tend to have one to two years less tenure than their counterparts at the control firms. In sum, a comparison of governance and financial characteristics reveals only minor differences, which we control for in the regression analyses that follow.

IV. RESEARCH DESIGN AND RESULTS FOR MANAGEMENT TURNOVER

Identifying Management Turnover

We consider a firm to have manager turnover if an individual holding the title of CEO or CFO leaves the firm after the backdating event date.¹² We track management changes in both the

¹² Some executive turnover studies omit the CFO. We include the CFO because (a) the role of chief financial officers in the integrity of financial reporting is becoming increasingly important (Chang et al. 2006), and (b) the

backdating and control firms through the end of 2007 by reading proxy statements when available.¹³ Otherwise, we search annual reports (10-Ks) and Form 8-Ks for the necessary information. We then confirm turnover or lack thereof using the website of each firm to verify that the CEO and/or CFO is different at the end of 2007 from the person(s) holding the position at the event date. We do not consider turnover to have occurred if the individual remains employed by the firm, but in a different position, or if the individual leaves following a merger.

In addition to total turnover, we classify each departure as a voluntary resignation or forced dismissal using criteria similar to that in Huson et al. (2001). Specifically, we search Factiva and Lexis-Nexis to record the date the departure was first announced and the reason for the CEO's / CFO's departure. We then use this information to identify the relatively unambiguous cases of forced dismissals, such as those in which the announcement clearly states that the executive was fired, forced from the position, or departed due to unspecified policy differences. For the remaining departures, we use a two-step process to classify each as voluntary or forced. First, we identify those instances in which (a) the departing executive's age is less than 60 (retirement age), and the announcement does not report that the executive died, left because of poor health, or accepted another position within the firm; and (b) the executive retires but leaves the job within six months of the "retirement" announcement. Departures meeting either of these two sets of criteria are initially classified as forced dismissals, subject to further review; all others are considered voluntary resignations. Second, to reduce the risk of misclassification, we

CFO has direct responsibility for financial report disclosure. When the SEC filed criminal charges against senior executives at Maxim Integrated Products for option backdating fraud, the SEC stated: "Of particular concern here was the CFO abandoning his role as corporate gatekeeper and instead facilitating Maxim's misrepresentations about its stock option program and financial condition (SEC 2007-250; found at <http://www.sec.gov/news/press/2007/2007-250.htm>)."

¹³ We measure turnover over a shorter period than some studies to reduce the likelihood that confounding events, such as poor operating performance, drive our results. Using a shorter window is also more conservative and will bias against finding significant results. The minimum (maximum) number of days between the event date and December 31, 2007 is 377 (1,089) days, with an average observation period of 514 days.

further investigate the circumstances surrounding the departures tentatively classified as forced by reading proxy statements, annual reports, and news reports. Turnover is reclassified as voluntary if the incumbent takes a comparable position at another firm, takes a lower-ranking position elsewhere but receives higher compensation, or leaves for previously undisclosed personal or business reasons that are unrelated to firm activity. The distinction between forced and voluntary turnover is an important element of our study because forced turnover better captures board disciplinary actions.¹⁴

Comparing Turnover in Backdating and Control Firms

Table 3 compares turnover rates for backdating firms to the propensity-score matched control firms. Examining the total turnover rate, 46.1 percent of firms accused of option backdating (65 out of 141) have at least one senior executive leave before the end of 2007, about 17 months after the average backdating event. The corresponding rate for control firms over the same period is 22.0 percent (31 out of 141). Of the 65 instances of executive turnover in backdating firms, 51 of them can be classified as forced departures. This results in a forced turnover rate of 36.2 percent (51 out of 141) for backdating firms, which is over three times higher than the 10.6 percent forced turnover rate in control firms (15 out of 141).

<Insert Table 3 Here>

Turnover rates for the CEO and CFO positions are almost identical, suggesting that boards assign similar responsibility for backdating to the CEO and CFO. Further, both CEO and CFO turnover is almost four times higher than would be expected based on the control firms (24.1 percent vs. 5.0 percent for the CEO, and 24.8 percent vs. 7.8 percent for the CFO).

¹⁴ Ideally, our sample would have a clean demarcation between forced dismissals and voluntary resignations. However, using publicly-available news sources (e.g., press releases, 10-K filings, proxy statements, Google searches, and social networking sites) to identify forced turnover may not be comprehensive (Warner et al. 1988; Defond and Park 1999). To the extent that we mislabel a turnover as either voluntary or forced, our inferences may be confounded.

Increases of this magnitude are economically meaningful and provide preliminary univariate evidence that turnover is different in backdating firms than in matched control firms. Next, we explore whether these differences remain significant after controlling for other potential determinants of executive turnover.

We run the following logistic regression on the sample of 141 backdating firms and an equal number of matched control firms:

$$\begin{aligned} \text{TURNOVER or FORCED TURNOVER} = & \alpha + \beta_1 \text{BACKDATE} + \beta_2 \text{INVESTIGATION} + \\ & \beta_3 \text{RESTATE} + \beta_4 \text{BACKDATE} * \text{MLUCKY GRANTS} + \\ & \beta_5 \text{BACKDATE} * \text{DLUCKY GRANTS} + \beta_6 \text{MLUCKY GRANTS} + \beta_7 \text{DLUCKY GRANTS} \\ & + \beta_{8-19} [\text{Controls}] + \varepsilon \end{aligned} \quad (1)$$

where *TURNOVER* is an indicator variable equal to 1 if the CEO or CFO leaves the firm at any time between the event date and the end of 2007, and 0 otherwise. *FORCED TURNOVER* is an indicator variable equal to 1 if the CEO or CFO is forced out of their position and 0 otherwise. Our primary variable of interest is *BACKDATE*, which is equal to 1 if the firm is accused of option backdating, and 0 otherwise. Prior research (Desai et al. 2006) suggests that executive turnover is greater when the accounting irregularity is material so previously reported results need to be restated or when the accounting irregularity triggers an investigation.

INVESTIGATION is an indicator variable equal to 1 if the SEC, DOJ, or Attorney General's Office investigated a firm's option dating practices, and 0 otherwise. *RESTATE* is an indicator variable equal to 1 if the firm reported an earnings restatement in direct response to the discovery of option backdating, and 0 otherwise. Firms with backdated options should recognize compensation expense at the grant date but few actually do, so prior period income must be restated if the amount is material. Because the indicator variables *INVESTIGATION* and *RESTATE* are consequences only applicable to backdating firms, these variables are set equal to 0 for all control firms in our sample. A positive (negative) coefficient on either β_2 or β_3 would

indicate that the likelihood of executive turnover is incrementally more (less) likely for cases with a regulatory investigation or restatement, respectively.

Prior literature (Yermack 1997; Heron and Lie 2007) documents that some executives receive opportunistically timed option grants, referred to as “lucky grants.” In our study, *MLUCKY GRANTS* is the proportion, as a percent of total grants issued, of option grants issued to the CEO, CFO, or board Chair for which the stock price at grant date falls in the bottom 25th percentile of the firm’s stock price distribution, over the period from 120 days before to 120 days after the option grant date. Lucky grants are calculated over the 10 years preceding the backdating event date. It does not require a public allegation of backdating, so it can be calculated for the control firms, as well as firms alleged to have backdated. We are primarily interested in the interaction of *MLUCKY GRANTS* with *BACKDATE*. A significant positive coefficient would indicate that turnover is higher when backdating is alleged and the percent of stock options backdated has been high for an extended period. The main effect for *MLUCKY GRANTS* is included in the model to provide a fully specified statistical model. However, it could be statistically significant if control firms have unreported backdating that has increased executive turnover. Since the control firms are selected on their propensity to backdate, they could have unreported backdating.

We also calculate the proportion of lucky grants issued to directors (*DLUCKY GRANTS*) in a manner consistent with *MLUCKY GRANTS*. We are again primarily interested in the interaction of *DLUCKY GRANTS* with *BACKDATE* but include the main effect to provide a fully specified model. A negative coefficient for the interaction would indicate that directors who benefit from lucky grants are less inclined to discipline managers for receiving a benefit they received. A second potential reason for a negative coefficient is that directors receive more lucky

grants when the CEO has more power over corporate decision-making (Bebchuk et al. 2010) and that power is used to limit discipline of top executives.

As turnover may occur for many reasons unrelated to option backdating, we include several control variables in model (1). We describe their rationale here and provide definitions in Table 4. In many studies, firm performance is an influential factor in executive turnover (Coughlan and Schmidt 1985; Warner et al. 1988; Murphy and Zimmerman 1992; Engel et al. 2003; Huson et al. 2003; Desai et al. 2006; Bushman et al. 2010). We include two measures of market-based performance (*PRIOR RETURNS* and *POST RETURNS*), and one measure of accounting-based performance (*ROA*). We expect a negative relation between executive turnover and each of these three variables. Following Bushman et al. (2010), we include *FIRM RISK* and expect executive turnover to be increasing in idiosyncratic (e.g., firm) risk, as increased riskiness suggests greater uncertainty about executives' talent levels.¹⁵

To control for differences in corporate governance between backdating and control firms, we include several proxies for managerial power over the board. Prior literature suggests that executives exert greater influence over the board when (a) the CEO is entrenched (*CEO TENURE*), (b) the CEO holds the dual role of board Chair (*DUALITY*), (c) a greater number of inside or gray directors sit on the board (*INSIDE DIRECTORS*, *GRAY DIRECTORS*), (d) the level of insider ownership is high (*INSIDER OWN*), and (e) when the CEO is also the founder of the firm (*CEO FOUNDER*) (Beasley 1996; Dechow et al. 1996; Desai et al. 2006; Leone and Liu 2010; Bebchuk et al. 2010; Collins et al. 2010). We predict the likelihood of executive turnover will be negatively related to each of these variables. Finally, to control for the firm's governance

¹⁵ Using daily returns over the year prior to the backdating event, we run the following regression: $R_{i,t-1} = \beta_0 + \beta_1 R_{\text{market},t-1} + \varepsilon_{i,t-1}$, where $R_{\text{market},t-1}$ is the value-weighted daily market return. We run this regression for each firm in our sample, provided that at least 100 of the 256 daily returns are available for the firm. The standard deviation of the residual, $\varepsilon_{i,t-1}$, is our proxy for firm risk. Our results are qualitatively similar if we use equally-weighted market returns as the benchmark performance measure.

structure and the strength of external monitoring, we include *BOARD SIZE* and institutional ownership (*INST OWN*), respectively.

Table 4 presents several versions of model (1) that vary by the dependent variable used (total or forced turnover) and the combination of explanatory variables included.¹⁶ Columns 1 and 2 show the results of predicting *TURNOVER* and *FORCED TURNOVER*, respectively, using only measures of backdating. The most important finding is the coefficient on *BACKDATE* is positive and highly significant ($p < 0.01$) in explaining both total and forced turnover, after controlling for lucky grants, firm performance and risk, and corporate governance characteristics. The coefficient of 0.494 in column 1 indicates the odds of turnover for either the CEO or CFO increase 1.6 times for executives at backdating firms compared to executives at matched control firms. This rate is economically meaningful but is tempered by the fact that the total turnover rate includes resignations and retirements. When predicting *FORCED TURNOVER* in column 2, the impact is even larger – the coefficient of 0.742 indicates the odds of CEO or CFO turnover are twice as high in backdating firms relative to control firms. The significance and economic magnitude of the *BACKDATE* coefficients show that boards either remove top executives involved in backdating or take other actions that cause the CEO or CFO to leave.

We add *INVESTIGATION* and *RESTATE* in column 3 and find that both coefficients are positive and statistically significant ($p < 0.05$). The odds of forced executive turnover triple (antilog of 1.114) for backdating cases with a regulatory investigation. Similarly, the odds of forced executive turnover increase thirteen times (antilog of 2.626) for cases with an accounting restatement. The coefficient on *BACKDATE* is then negative and statistically insignificant ($p =$

¹⁶ The 233 observations included in model (1) are less than our full sample of backdating and control firms ($n = 282$) due to missing data for *MLUCKY GRANTS*, *DLUCKY GRANTS*, *FIRM RISK*, and *ROA*. However, our inferences about the other variables are unchanged using the full sample by excluding these variables from the model, or setting missing values equal to zero.

0.121). Backdating allegations are highly correlated with both restatements and investigations, and only 21 backdating firms in our sample do not have either an investigation or restatement.¹⁷

Therefore, when the treatment variables *INVESTIGATION* and *RESTATE* are added to the model, the effect of backdating on forced turnover is moved from the main effect to the two treatment variables. While the higher turnover is driven by the presence of a restatement or a regulatory investigation, it is the backdating of options that triggers restatements or investigations, which in turn lead to higher executive turnover.

<Insert Table 4 Here>

Next, we assess the incremental impact of lucky grants on executive turnover at backdating firms. Recall that we are primarily interested in the interaction of *BACKDATE* with *MLUCKY GRANTS* and *DLUCKY GRANTS*, but include the main effects to provide a fully specified model. Although the interpretation of interaction effects in nonlinear models is controversial, we include these results to provide a more complete analysis.¹⁸ We find the main effect *DLUCKY GRANTS* is statistically significant in models 1, 2, and 3, but it becomes insignificant when the interaction with *BACKDATE* is added in column 4. The significant main effect is therefore from the backdating sample. The joint test of *DLUCKY GRANTS* + *BACKDATE*DLUCKY GRANTS* is negative ($-0.031 + 0.003 = -0.028$) and significantly different from zero ($p = 0.015$), suggesting that executives at backdating firms are less likely to

¹⁷ The Pearson correlation coefficient is 0.7 between both *BACKDATE* and *RESTATE* and *BACKDATE* and *INVESTIGATION*. Despite the high correlations, however, it does not appear that multicollinearity is an issue; VIFs are less than 3.0 for all variables included in model (1).

¹⁸ Ai and Norton (2003) and Norton et al. (2004) show that interpreting interaction effects in nonlinear models can be problematic. They introduce a methodology that adjusts the marginal effects on interaction terms to allow for correct interpretation. However, recent work by Greene (2010) and Kolanski and Siegal (2010) argue that these adjustments are inappropriate and show that interpreting the estimated coefficient on the interaction term is acceptable. We therefore present our main results in Table 4 without the use of the Norton et al. (2004) adjustments. In unreported analyses, however, we compute the adjusted interaction effect, standard error, and z-statistic for *BACKDATE*MLUCKY GRANTS* and *BACKDATE*DLUCKY GRANTS* using the *inteff* command in Stata. Neither interaction term is statistically significant after the Norton et al. (2004) correction (corrected z-statistic of 0.178 and -0.871, respectively).

be disciplined when outside directors also receive opportunistically timed option grants. However, this result is sensitive to the cutoff used to determine whether a grant is lucky, so the evidence is inconclusive.¹⁹ The main effect *MLUCKY GRANTS* is always insignificant, indicating unreported backdating at the control firms, if any, has not increased turnover. The joint test of the coefficients on *MLUCKY GRANTS* + *BACKDATE*MLUCKY GRANTS* is also insignificant ($p = 0.590$). This indicates the extent of backdating has little incremental effect on turnover once a public allegation of backdating occurs.

Examining the control variables, we find that turnover is more likely following poor stock-price performance, since the coefficients on *PRIOR RETURNS* and *POST RETURNS* are both negative and statistically significant ($p < 0.05$). The coefficient on *CEO FOUNDER* is also negative and significant ($p = 0.026$). Taking the anti-log of the coefficient of -0.999 indicates that the odds of executive turnover are 63 percent less likely if the CEO is also a firm founder.

Based on the results in Table 4, we reject H_1 and conclude that executive turnover is higher in backdating firms than in propensity-score matched control firms.

V. SUBSEQUENT EMPLOYMENT FOR DISPLACED MANAGERS

Next, we evaluate the *ex post* settling up in the managerial labor market by comparing rehire rates of executives leaving the backdating and control firms. We use several sources to track the manager's next position, including news reports, proxy statements, 10-K filings, Google searches, and social networking sites. In the spirit of Desai et al. (2006), we create three

¹⁹ We considered several alternative definitions of *MLUCKY GRANTS* and *DLUCKY GRANTS*. First, we shorten the time frame over which these grants are measured from 10 years preceding the event date to four years, three years, or two years and our results are unchanged from those presented. Second, following the definition used in Collins et al. (2010), we define lucky grants as those for which the stock price at grant date falls in the bottom 10th percentile rather than the bottom 25th percentile of the firm's stock price distribution. Our results are sensitive to this cut-off. When using the 25th percentile, we find the coefficient on *DLUCKY GRANTS* to be consistently negative and significant ($p < 0.10$; see columns 1-3 in Table 4). However, when defining lucky grants using a 10 percentile cut-off, this variable falls short of statistical significance. In contrast, *MLUCKY GRANTS* is positively related to executive turnover when using the 10 percent cut-off (the coefficient on *MLUCKY GRANTS* is significant at the $p < 0.05$ level in column 2 of Table 4).

measures of subsequent employment. The first, *REHIRE1*, identifies executives who obtain a comparable position at a public company. We consider departing CEOs (CFOs) to have received comparable employment if they take the position of President or CEO (President, CEO, or CFO) or if they take a lower-ranking position but receive a higher compensation package. *REHIRE2* expands the previous definition to include individuals who are rehired in any capacity as an employee at either a public or private firm. Our third measure (*REHIRE3*) is expanded further to include all executives in the *REHIRE2* category, plus those taking positions as nonemployee directors at public or private firms.²⁰

Table 5, Panel A, reports the rehire rates for displaced executives. A total of 91 CEOs and CFOs are displaced following backdating allegations (42 and 49 respectively, as reported on Table 3) and only 18.7 percent (17 of 91) of these executives find comparable employment at a public firm (*REHIRE1*). The corresponding rehire rate for executives leaving the propensity-score matched control firms is 35.1 percent (13 of 37), and this difference in rehire rates is statistically significant (Chi-square p-value = 0.046). The discrepancy in rehire rates becomes even more pronounced when using the *REHIRE2* measure. Less than half (44 of 91) of the displaced backdating executives are rehired as an employee at a public or private firm. The 48.4 percent rate for these executives is significantly lower ($p < 0.01$) than the corresponding rehire rate of 83.8 percent (31 of 37) for executives at the control firms. This 35 percent difference is clearly economically meaningful. When we expand the definition to include nonemployee directorships (*REHIRE3*), we again find that displaced backdating executives are significantly

²⁰ We also provide evidence on a category of executive turnover only recently added to the literature, referred to as “retention light” (Evans et al. 2010). Retention light occurs when the CEO is replaced but remains on the Board for at least two years (the individual may also be hired at another company). Retention light enables a firm to retain the expertise of the former CEO, but it may allow the former CEO to exploit a continuing influence for personal benefits. We find a higher frequency of retention-light CEOs at firms with backdated options (7 of 42 = 17 percent), than in our propensity-score matched control group (0 of 9). While the frequencies are too small to draw strong conclusions, the higher rate of retention light CEOs in firms with backdating is consistent with backdating occurring more frequently at firms where the CEO has considerable power (as discussed in the introduction).

less likely ($p < 0.05$) than their peers to find subsequent employment; however, the difference is much less (70.3 vs. 89.2 percent). This pattern is consistent with the market for directors being more forgiving of backdating, or less efficient than the employee (CEO, CFO) market.

The comparisons reported on Table 5, Panel A, are univariate. We also report the association between backdating allegations and rehire rates in a multivariate model that controls for other factors identified in prior research as affecting the rehire rate (Fee and Hadlock 2004; Desai et al. 2006). Specifically, we run the following logistic regression with *REHIRE2* as the dependent variable:

$$REHIRE2 = \alpha + \beta_1 BACKDATE + \beta_2 INVESTIGATION + \beta_3 RESTATE + \beta_4 MLUCKY GRANTS + \beta_5 DLUCKY GRANTS + \beta_6 PRIOR RETURNS + \beta_7 POST RETURNS + \beta_8 ROA + \beta_9 FIRM SIZE + \beta_{10} CEO TENURE + \beta_{11} CEO FOUNDER + \beta_{12} DUALITY + \varepsilon \quad (2)$$

Table 5, Panel B, shows the results of model (2) using displaced executives from both the backdating and propensity-score matched control firms.²¹ The main effect coefficient on *BACKDATE* is negative and significant ($p = 0.056$), so executives from backdating firms are significantly less likely to be rehired as an employee in a public or private firm relative to their displaced counterparts at control firms. The rehire rate among backdating executives is not affected by a regulatory investigation or restatement since β_2 and β_3 , are not significantly different from zero.

Based on the evidence presented in Table 5, we reject H_2 . *Ex post* settling up in the managerial labor market shows that subsequent employment for backdating executives is significantly worse than for control firm executives, regardless of whether the backdating resulted in an outside investigation or restatement. The lower rehire rate for displaced managers

²¹ In untabulated regressions, we also model the *REHIRE1* and *REHIRE3* decisions. The association between *BACKDATE* and *REHIRE1* remains negative and significant at the $p < 0.10$ level, consistent with the findings presented in Table 5. When predicting *REHIRE3*, we find that executives at backdating firms are less likely to be rehired only when the backdating allegations lead to earnings restatements.

is inconsistent with boards releasing high ability managers only to appease regulators or investors.

<Insert Table 5 Here>

VI. CEO COMPENSATION CHANGES

Compensation Measures

The compensation contract of a senior executive often includes salary, bonus, stock option grants, and other annual compensation. In this section we report tests of H_3 , which states that backdating firms reduce the proportion of compensation from stock options to a greater extent than control firms. We analyze data for the CEO.²² Following Cheng and Farber (2008), we measure option-based compensation in two ways: (1) the quantity of new shares granted to the CEO in a given year, scaled by total shares outstanding and multiplied by 100 (*#Option Grants%*), and (2) the dollar value of new options granted to the CEO, scaled by total annual compensation and multiplied by 100 (*\$Option Grants%*).²³ We prefer the quantity-of-shares measure for statistical comparisons of the change in option usage because the dollar measure is affected by SFAS No. 123(R), which became effective June 2005. Two other dollar measures, *Salary%* and *Bonus%*, capture the value of cash-based compensation awarded to a CEO in a given year, both scaled by total annual compensation and multiplied by 100. Each compensation measure is winsorized at the 1st and 99th percentile. We use the change from year $t-1$ to year $t+2$, where year t is defined as the year in which the backdating allegation was first made public,

²² Backdating firms may also restructure the compensation contracts of their CFOs. However, analyzing CFO compensation changes is difficult because of missing data: *#Option Grants%* (*\$Option Grants%*) is available for only 46 (55) of the 141 CFOs in our backdating sample.

²³ Executive compensation is collected first from Execucomp, and secondly from firm proxy statements, often using DirectEdgar. When Execucomp data are available, we use the Black-Scholes value of option grants for all firm-years prior to 2006 and SFAS 123R fair value of option grants for years 2006 and later. When data are collected from proxy statements, we use the potential realizable value of option grants based on a five percent annual rate of appreciation for the stock over the term of the option. This value is available for all firm-years prior to 2006; after 2006 we use the grant date fair value of option grants as reported in firm's proxy statements. We believe these measures are comparable to those used by other researchers (based on personal inquiries).

which is 2006 for 99 percent of our sample. Prior research has found that two to three years are generally required for compensation and corporate governance changes to be implemented (Farber 2005; Cheng and Farber 2008).

Compensation Changes around the Backdating Event

Table 6, Panel A, reports the change in *#Option Grants%*, *\$Option Grants%*, *Salary%*, and *Bonus%* for backdating firms and the propensity-score matched control firms. Most of the compensation changes are negative, so average CEO bonuses, salary, and option grants (both dollar value and quantity) generally decrease over the test period. With respect to the change in *#Option Grants%*, we find that the -0.1 percent reduction at backdating firms is significantly different from the 0.0 percent increase at control firms ($p = 0.037$). To assess economic importance, the dollar measure is probably more informative. *\$Option Grants%* decreased by an average of 30.3 percent at backdating firms but only 8.1 percent at the propensity-score control firms, and this difference is statistically significant ($p = 0.004$).

In Table 6, Panel B, we split our sample into two separate groups based on whether or not the CEO leaves the firm after the backdating event date. The most notable finding is that backdating firms reduce option compensation for both continuing and newly hired CEOs. For a new CEO, we find a sizable decline in the quantity of option grants (-0.1 percent) and their dollar value (-48.8 percent). These declines are especially striking in relation to the corresponding 0.3 and 15.4 percent increases at control firms (different at the $p < 0.05$ level). For backdating firms that retain their CEO (right-hand side of Panel B), the decline in option compensation is also sizable, -0.1 percent and -23.6 percent, respectively, and marginally different from the control firms ($p < 0.10$). While the magnitude of the change in option compensation for firms with a new

CEO appear considerably larger than for firms retaining their CEO, the differences are not statistically significant (untabulated).

With regard to H₃, we find that boards respond to option backdating by restructuring compensation contracts to rely significantly less on stock options (Table 6, Panel A), and the decrease occurs for both continuing and newly hired CEOs (Table 6, Panel B). Cheng and Farber (2008), who study restatements during the 1990s when a dramatic run up in stock prices increased the value of CEO stock options, also find the use of stock options is reduced for both new and continuing CEOs.

<Insert Table 6 Here>

VII. EXTENSIONS AND ROBUSTNESS TESTS

General Counsel Turnover

To provide a more complete picture of executive turnover following an allegation of option backdating, we collect information on turnover rates for each firm's General Counsel. GCs are influential members of the senior management team whose roles are to monitor and advise on issues ranging from legal liability, litigation risks, regulatory rules, key business decisions, ethical concerns, and financial and public relation issues (American Bar Association 2003; American Corporate Counsel Association 2001). GCs oversee the option granting process and are directly involved in decisions about executive compensation (Johnson 2007). The SEC has publicly expressed concern about the critical role that GCs have played in option backdating, and the SEC and U.S. Attorney's Office have formally filed criminal charges against fourteen GCs to date.²⁴ An exploration of GC turnover is therefore a natural extension of our tests.

Using information from proxy statements, we track GC changes for the backdating firms and propensity-score matched control firms from one year before the event date to two years

²⁴ See the SEC's "Spotlight on Stock Option Backdating," (<http://www.sec.gov/spotlight/optionsbackdating.htm>).

after.²⁵ Table 7, Panel A, shows the GC turnover rate for backdating firms is 43.2 percent (41 of 95), compared to 20.9 percent (23 of 110) for the control firms (significant at less than 0.001). Somewhat less than half of the GC turnover cases (18 of 41, untabulated) occur in conjunction with turnover of at least one other senior executive. More importantly, in the remainder (23 of 41), only the GC is terminated. It is possible that the GCs who were singularly removed were directly involved and autonomously responsible for the backdated stock options, but they may be scapegoats, as suggested by Weiss (2009).²⁶ As reported in the bottom row of Panel A, the overall turnover rate for backdating firms increases to 62.4 percent with GC turnover included (from 46.1 percent on Table 3). Although the turnover rate in control firms increases to 34.8 percent (from 22.0 percent in Table 3), aggregate turnover is still significantly more likely in backdating firms ($p < 0.001$).²⁷

<Insert Table 7 Here>

Table 7, Panel B, reports turnover frequency conditioned on a restatement or a regulatory investigation. The primary finding is that, unlike CEOs and CFOs, the GC turnover rate does not increase significantly with occurrence of a restatement or regulatory investigation. GCs are terminated somewhat more frequently when the financial statements are restated (31.9 percent vs. 24.0 percent), but the difference is not statistically significant ($p = 0.329$). With a regulatory investigation, the turnover rate of 28.7 percent is almost identical to the 29.8 percent without an investigation. These results suggest that GCs are held responsible, even when the backdating is

²⁵ We are able to determine the identity of the GC(s) in 95 of 141 backdating firms and in 110 of 141 control firms. We do not include GC turnover in our primary tests due to this reduction of sample size.

²⁶ As of May 23, 2011, the SEC and U.S. Attorney General's Office has charged 67 executives with improperly backdating options. Fourteen of those executives are GCs (21 percent), compared with 21 CEOs (31 percent), 21 CFOs (31 percent), and 11 Chairmen (16 percent). Only one GC (Kent Roberts of McAfee, Incorporated) has been independently charged by the SEC. Thus, regulatory enforcement data indicate GCs were one of the responsible parties, but not the primary responsible party, for option backdating.

²⁷ In addition, we find results consistent with the logistic regression results in Table 4 if we set the dependent variable, *TURNOVER*, equal to one if the CEO, CFO, or GC are terminated.

less serious, possibly because a legal contract is still misstated. Overall, our results support the view that corporate attorneys play a key role in the financial reporting process (Choudhary et al. 2012).

Robustness Tests

We have conducted three untabulated but noteworthy robustness tests. First, we assess the sensitivity of our findings to hidden bias. Recall that we reject H_1 by finding that executive turnover is higher in backdating firms than in propensity-score matched control firms (see Table 4). However, those results may be susceptible to hidden bias caused by omission of an unknown confounding variable (e.g., a correlated omitted variable) that simultaneously affects the likelihood of option backdating and the likelihood of executive turnover. Our use of the propensity-score matching procedure, along with the addition of control variables in model (1), alleviates overt bias relating to observable covariates; however, it does not remove hidden bias that might arise from unobserved covariates.

We use the bounding approach outlined in Rosenbaum (2002), Becker and Caliendo (2007), and Armstrong et al. (2010) to assess the sensitivity of our inferences to possible hidden bias. This approach allows researchers to quantify the amount of hidden bias that must exist to invalidate the statistical inferences drawn. We find that the difference in turnover rates between backdating firms and the propensity-score matched control firms would be insignificant ($p > 0.10$) *only if* executives at backdating firms were 3.05 times more likely, rather than equally likely, to be fired than executives at the control firms, after conditioning on observable factors in the contracting environment in the form of the covariates included in our propensity-score model. Stated differently, our result is only sensitive to a correlated omitted variable that would more than triple the odds of manager turnover at backdating firms relative to the control firms. As it is

unlikely that such a correlated omitted variable exists, our results do not appear susceptible to hidden biases.

Our second robustness test redefines executive turnover to include the CEO, CFO, and Chair positions. The overall turnover rate at backdating firms increases modestly (to 48.9 percent from 46.1 percent) and remains significantly higher ($p < 0.01$) than the corresponding turnover rate for control firms (25.5 percent). The regression results are also consistent with those presented in Table 4.

Our third robustness test controls for other non-backdating-related restatements announced by the sample firms. Our concern is that the manager turnover we observe could be due to a coincident but unrelated accounting irregularity. Using data provided by Hennes et al. (2008), we create an indicator variable (*OTHER IRREG*) that is equal to 1 if a firm announces an unrelated accounting irregularity in 2005 or 2006, and 0 otherwise. We find *OTHER IRREG* is positive but insignificant ($p = 0.645$) in predicting executive turnover.

VIII. CONCLUSION

We contribute to the literature on the effectiveness of private sector disciplinary mechanisms by investigating how boards of directors and the managerial labor market treat executives alleged to have backdated options. We conduct a thorough analysis by considering senior manager turnover rates, employment opportunities for displaced executives, and changes in company compensation practices. We focus on the CEO and CFO, but also provide information about the General Counsel.

The SEC has recently brought charges against several companies for backdating options. In those cases, the SEC faces the difficult task of proving fraudulent intent, which may explain why only 31 companies have been legally charged by the SEC to-date. Our results indicate that

executives who are not charged by the SEC do not necessarily avoid adverse consequences. We find that the likelihood of turnover increases very substantially for the CEO, CFO, and/or GC involved in backdating relative to a propensity-score matched control sample, and the future employment prospects for backdating executives are significantly worse than for control firm executives. In conclusion, private-sector disciplining of executives involved in option backdating provides an important complement to regulatory sanctions. An important caveat is that the private sector might not have responded so decisively without the adverse publicity that accompanied a revelation of backdating and, if this is the case, unreported instances of compensation abuse may go unpunished or not be punished severely.

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APPENDIX

Excerpts of Firm Press Releases

American Tower Finds Option Flaws

A special committee of the company's board blames "look-backs" in assigning stock option rights on ex-senior management. Stephen Taub, CFO.com November 08, 2006

American Tower reported that former senior managers were responsible for a policy of reporting option grant dates that differed from the dates on which the grants were legally effective.

The operator of wireless and broadcast communications sites said a special committee probing its past options practices found that flawed practices occurred from June 1998, when the company went public, through 2005. The committee cited inadequate processes, procedures, and controls. "The company also had inadequate controls relating to, and failed to account properly for, certain modifications of outstanding stock option rights," it added.

The special committee found that the company's flawed option practices began with past management, "whose members frequently looked back to select option grant dates," the company said in a press release. At the same time "with the likely exception of one past member of management," the evidence doesn't suggest that management at the time knew that, in looking back to choose a past grant date with a more favorable closing price, the company was failing to take needed accounting charges or was acting in a different way than its disclosures indicated, American Tower indicated.

"However, certain members of past management who initiated and were involved with the option practices should have been aware of the accounting or legal issues or sought legal and accounting advice as to the practice," the wireless and broadcast company added.

Cyberonics Restates; CFO, CEO Out

The new chairman, a former U.S. Congressman, reportedly was awarded below-market options by the company in 1994. Stephen Taub and David M. Katz, CFO.com November 21, 2006

Cyberonics, Inc., a maker of medical devices, announced the resignations of Robert Cummins as chairman, chief executive officer, and president, and Pamela Westbrook as CFO and vice president of finance and administration.

No reason was given for the departures. They were announced at the same time that the company reported that its audit committee had found that incorrect measurement dates were tied to the financial reporting of a number of option grants between 1999 and 2003. The incorrect measurements will cause Cyberonics to take an added non-cash, stock-based compensation expense of roughly \$10 million and restate its results for the six fiscal years going back to 2000 and the first three fiscal quarters of 2006.

Reese S. Terry, Jr., the company's co-founder, former CEO, and a current director, was tapped as interim chief executive. The board also voted to separate the roles of CEO and chairman and elected Tony Coelho, a former U.S. representative and director of the Company since 1997, to the position of non-executive chairman. A day later, however, *USA Today*, citing Securities and Exchange Commission filings, reported that Coelho was awarded below-market options from Cyberonics in early 1994, "at a much deeper discount to the market price than the company's stock-option plan provided for at the time.

Cyberonics also announced a series of governance changes, including separating the roles of CEO and chairman. Among a number of actions concerning stock options, the company will limit option grants to

specific limited time periods during the year; require approval all option grants at compensation committee meetings, rather than by written consent; and require that all internal approvals of award grants be obtained in writing before the board or compensation committee can grant an equity award.

Monster Fires Counsel Amid Options Probe, By VINNEE TONG, AP Business Writer
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NEW YORK (AP) - Monster Worldwide Inc., the parent of job search site Monster.com, said Wednesday it terminated Myron Olesnyckyj, the company's lead lawyer, as part of its investigation into past stock-option grant practices.

Olesnyckyj, the company's general counsel, is the second high-ranking executive to leave the company over backdated stock options. Andrew J. McKelvey resigned his posts as chairman and chief executive on Oct. 9 but at the time retained his seat on the board as chairman emeritus. He resigned fully on Oct. 30, citing an unwillingness to sit for further questions over the company's backdating practices in the past.

Monster spokesman Robert Jones said Wednesday that no other employees have been suspended.

The U.S. attorney's office in the Southern District of New York has issued a subpoena to the company over options backdating, and a special committee of company directors has said it wants to complete its own investigation by the end of the year.

Olesnyckyj was suspended on Sept. 19. He had held the titles of senior vice president, general counsel and secretary.

The company said on Oct. 25 that it found pricing problems in a "substantial number" of its past option grants, and as a result it expected to restate its results from 1997 through 2005. Monster said it does not expect the restatements to affect its results for this year.

The company has delayed filing its earnings results for the second and third quarters. Jones said the company would file its second quarter results on Dec. 13. Third-quarter numbers would be issued "as soon as practicable," according to a Nov. 7 statement from the company.

Backdating an option means retroactively setting the option's strike price to a day when the stock traded cheaply. An option with a lower strike price is more valuable because it's less expensive to exercise. The practice is not necessarily illegal, but must be disclosed to shareholders.

In a statement, the company said Olesnyckyj was terminated "for cause."

Monster is one of more than 180 companies conducting internal investigations or subject to probes by the Securities and Exchange Commission or the Department of Justice concerning potential backdating of stock options.

Several top executives at other companies have resigned over options investigations. They include: UnitedHealth Group Inc. Chief Executive William McGuire, KLA-Tencor Corp. Chairman Kenneth Levy, CNet Networks Inc. Chief Executive Shelby Bonnie and McAfee Inc. CEO George Samenuk. McGuire quit as chairman earlier this month and will resign as CEO by Dec. 1.

Shares of Monster rose 8 cents to close at \$45.02 on the Nasdaq Stock Market.

TABLE 1
Sample Composition

Panel A: Sample Derivation

	Backdate Firms
Initial sample of backdating firms ^a	240
<i>Less:</i> foreign-incorporated firms (with CRSP share codes of 10 or 11)	(8)
<i>Less:</i> firms with incomplete financial and/or corporate governance data ^b	<u>(91)</u>
Final Backdating Sample	141

Panel B: Industry Composition

Two-Digit SIC Code	Backdate Firms	
	Number	Percent
13 --- Oil and gas extraction	1	0.71%
15 --- Building construction and general contractor	1	0.71%
16 --- Heavy construction contractors	1	0.71%
20 --- Food and kindred products	2	1.42%
28 --- Chemicals and allied products	10	7.09%
32 --- Stone, clay, glass, and concrete products	1	0.71%
35 --- Industry & commercial machinery and computers	15	10.64%
36 --- Electrical and electronic equipment	29	20.57%
38 --- Measuring and analyzing instruments	7	4.96%
39 --- Misc. manufacturing industries	1	0.71%
47 --- Transportation services	1	0.71%
48 --- Communications	6	4.26%
50 --- Wholesale trade-durable goods	4	2.84%
53 --- General merchandise stores	2	1.42%
56 --- Apparel and accessory stores	2	1.42%
57 --- Furniture, home furnishings, and equipment stores	1	0.71%
58 --- Eating and drinking places	2	1.42%
59 --- Misc. retail	6	4.26%
60 --- Depository institutions	1	0.71%
63 --- Insurance carriers	3	2.13%
67 --- Holding and other investment offices	2	1.42%
73 --- Business services	36	25.53%
80 --- Health services	1	0.71%
82 --- Legal services	2	1.42%
87 --- Engineering, accounting, research, and management services	4	2.84%
	141	100%

^a Our initial sample is a combination of suspected backdating firms announced by the *Wall Street Journal*, Bloomberg, Reuters, and our own hand collection as of December 31, 2006.

^b Financial data is from Compustat and CRSP; corporate governance data is collected from proxy statements and/or annual reports (10-Ks).

TABLE 2
Descriptive Statistics for Sample and Control Firms

Panel A: Covariate Balance between Propensity-Score Matched Pairs

Variable used in propensity-score estimation ^a	Backdating (Treatment) Firms		Propensity-Score Matched (Control) Firms		t-test Difference p-value	Wilcoxon test p-value
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>		
<i>CEO TENURE</i>	9.06	7.00	9.70	7.00	0.498	0.400
<i>INTERLOCKING</i>	14.2%	0.0%	15.6%	0.0%	0.739	0.739
<i>lnVOLATILITY</i>	-1.81	-1.74	-1.92	-1.82	0.011	0.000
<i>BIGN</i>	0.91	1.00	0.91	1.00	0.999	0.999
<i>lnASSETS</i>	6.71	6.60	6.89	6.66	0.337	0.811
<i>HIGH TECH</i>	22.7%	0.0%	17.0%	0.0%	0.234	0.234

Panel B: Comparison of Financial and Governance Characteristics across Sample and Control Firms

	Backdating (Treatment) Firms		Propensity-Score Matched (Control) Firms		t-test Difference p-value	Wilcoxon test p-value
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>		
<u>Financial Data^a</u>						
<i>MKT VALUE</i>	4,127	1,436	6,447	1,055	0.271	0.499
<i>BTM</i>	0.39	0.32	0.42	0.39	0.570	0.103
<i>DEBT/ASSETS</i>	0.15	0.05	0.17	0.13	0.485	0.168
<i>ROA</i>	0.08	0.11	0.12	0.12	0.070	0.091
<i>FIRM RISK</i>	0.02	0.02	0.02	0.02	0.939	0.116
<i>OP. ACCRUALS</i>	-0.07	-0.06	-0.07	-0.05	0.840	0.560
<i>TOTAL ACCRUALS</i>	0.00	0.01	-0.01	0.01	0.668	0.934
<i>PRIOR RETURNS</i> <i>(-12,-1)</i>	0.11	0.04	0.11	0.06	0.984	0.663
<i>POST RETURNS</i> <i>(+1,+12)</i>	0.14	0.10	0.21	0.13	0.201	0.091
<u>Governance Data^a</u>						
<i>DUALITY</i>	0.56	1.00	0.56	1.00	0.905	0.905
<i>INSIDE DIR.</i>	24.4%	22.2%	29.5%	28.6%	0.001	<0.001
<i>GRAY DIRECTORS</i>	5.7%	0.0%	10.9%	9.1%	<0.001	<0.001
<i>CEO FOUNDER</i>	0.30	0.00	0.23	0.00	0.177	0.177
<i>BOARD SIZE</i>	8.01	8.00	8.19	8.00	0.497	0.657
<i>BOARD MEETINGS</i>	9.20	8.00	7.78	7.00	0.008	0.028
<i>CEO AGE</i>	51.77	51.00	51.87	51.00	0.922	0.945
<i>CFO AGE</i>	48.49	48.00	49.15	49.00	0.448	0.603
<i>CEO TENURE</i>	9.06	7.00	9.70	7.00	0.499	0.400
<i>CFO TENURE</i>	3.78	2.00	4.78	4.00	0.053	0.050
<i>INST OWN</i>	29.6%	27.0%	25.5%	23.6%	0.045	0.042
<i>INSIDER OWN</i>	10.6%	7.6%	9.0%	5.4%	0.185	0.190

Panel A displays the mean and median value of each covariate used in our propensity-score model and compares these values across the backdating and propensity-score matched control firms. Panel B compares the backdating and propensity-score matched control firms along other observable firm and governance characteristics.

The t-test and Wilcoxon signed rank test are used to determine the statistical significance of mean and median differences of the backdating and propensity-score matched control firms. Two-tailed p-values are presented in the two far right columns.

Financial data are from Compustat and CRSP; corporate governance data are from Risk Metrics, Corporate Library, proxy statements, and 10-K filings. All variables are measured as of the fiscal year-end preceding the backdating event date, unless otherwise noted.

^a Variable definitions: *CEO TENURE* = the number of years as CEO of the firm; *INTERLOCKING* = an indicator variable equal to 1 if at least one director also sits on a second board for the same fiscal year and the second board is at a backdating firm, and zero otherwise; *lnVOLATILITY* = the natural logarithm of the standard deviation of stock returns over the prior 60 months, winsorized at the 1st and 99th percentiles; *BIGN* = an indicator variable equal to 1 if the auditor is a Big N auditor, and zero otherwise; *lnASSETS* = the natural logarithm of total assets (Compustat field at); *HIGH TECH* = an indicator variable equal to 1 for firms with SIC codes between 7370 and 7379 (computers, electronic equipment, or measuring and control equipment industries) and zero otherwise; *MKT VALUE* = the market value of the firm, defined as common shares outstanding (csho) * closing stock price (prcc_f); *BTM* = book value of equity (ceq) divided by market value (csho*prcc_f); *DEBT/ASSETS* = total long-term debt (dltt) plus current liabilities (dlc), divided by total assets (at); *ROA* = operating income before depreciation (oibdp) divided by total assets (at); *FIRM RISK* = the standard deviation of residuals from a regression of daily stock returns on daily value-weighted market returns; *OP. ACCRUALS* = income before extraordinary items (ib) less net cash flow from operating activities (oancf), divided by total assets (at); *TOTAL ACCRUALS* = income before extraordinary items (ib) less net cash flow from operating (oancf) and investing (ivncf) activities, divided by total assets (at); *PRIOR RETURNS (-12,-1)* = buy-and-hold returns in the 12 months prior to the backdating event date, with the event date month excluded; *POST RETURNS (+1, +12)* = buy-and-hold returns in the 12 months following the backdating event date, with the event date month excluded; *DUALITY* = an indicator variable equal to 1 if the CEO and Chair are the same individual, and 0 otherwise; *INSIDE DIR.* = the percentage of inside directors on the board; *GRAY DIRECTORS* = the percentage of gray outside directors on the board. An outside director is defined as “gray” if he or she is (a) a former employee, (b) an employee of a significant service provider, supplier, or customer, (c) a recipient of charitable funds, (d) an interlocking director, or (e) a family member of an executive officer; *CEO FOUNDER* = an indicator variable equal to 1 if the firm’s CEO is described as a founder and 0 otherwise; *BOARD SIZE* = the number of directors on the board; *BOARD MEETINGS* = the number of board meetings held during the year; *CEO and CFO AGE* = the age of the individual; *CEO and CFO TENURE* = the number of years the individual has held the same position within the firm; *INST OWN* = the number of shares held by institutional investors, scaled by the total number of shares outstanding; *INSIDER OWN* = the number of shares held by insiders, scaled by the total number of shares outstanding.

TABLE 3
Management Turnover Summary

	Backdating Firms		Propensity-Score Matched Control Firms		χ^2 p-value^c
	<i>Frequency</i>	<i>Percent</i>	<i>Frequency</i>	<i>Percent</i>	
All Executive Turnover ^a					
CEO or CFO	65	46.1%	31	22.0%	<0.001
CEO	42	29.8%	9	6.4%	<0.001
CFO	49	34.8%	28	19.9%	0.005
Sample Firms	141		141		
Forced Executive Turnover ^b					
CEO or CFO	51	36.2%	15	10.6%	<0.001
CEO	34	24.1%	7	5.0%	<0.001
CFO	35	24.8%	11	7.8%	<0.001
Sample Firms	141		141		

^a We consider a firm to have executive turnover if an individual holding the title of CEO or CFO leaves the firm anytime between the backdating event date and the end of 2007. We do not consider turnover to have occurred if the individual remains with the firm, but in a different position, or if the individual leaves following a merger. Management changes are identified by searching proxy statements, annual reports (10-Ks), and Form 8-Ks.

^b For each executive departure, we first identify those instances in which: (1) the CEO/CFO is fired, forced from the position, or departs due to unspecified policy differences; or (2) the departing CEO/CFO's age is less than 60, but the announcement does not report that the CEO/CFO died, left because of poor health, or accepted another position within the firm; or (3) the CEO/CFO retires but leaves the job within six months of the "retirement" announcement. Departures meeting these criteria are initially classified as forced, subject to further review; all others are considered voluntary resignations. Second, we further investigate the circumstances surrounding the departures in the forced turnover group by reading proxy statements, annual reports, and news reports. The departures are then reclassified as voluntary if the incumbent takes a comparable position at another firm, takes a lower-ranking position elsewhere but receives higher compensation, or leaves for previously undisclosed personal or business reasons that are unrelated to the firm's activity.

^c The reported p-values are based on two-tailed Chi-square tests of the differences between groups .

TABLE 4
Likelihood of Management Turnover
(Backdating Firms and Propensity-Score Matched Control Firms)

Logistic Regression Predicting <i>TURNOVER</i> or <i>FORCED TURNOVER</i>					
<u>Variable^a</u>	<u>Prediction</u>	(1) <u>Turnover</u>	(2) <u>Forced Turnover</u>	(3) <u>Forced Turnover</u>	(4) <u>Forced Turnover</u>
Intercept		2.075 (0.253)	-0.602 (0.768)	-1.935 (0.386)	-2.289 (0.322)
<i>BACKDATE</i>	?	0.494 (0.002)	0.742 (<0.001)	-0.654 (0.121)	-0.454 (0.356)
<i>INVESTIGATION</i>	(+)			1.114 (0.039)	1.345 (0.021)
<i>RESTATE</i>	?			2.626 (<0.001)	2.788 (<0.001)
<i>BACKDATE*MLUCKY GRANTS</i>	(+)				0.003 (0.416)
<i>BACKDATE*DLUCKY GRANTS</i>	(-)				-0.031 (0.029)
<i>MLUCKY GRANTS</i>	(+)	0.006 (0.181)	0.008 (0.118)	0.003 (0.356)	0.002 (0.437)
<i>DLUCKY GRANTS</i>	(-)	-0.005 (0.020)	-0.010 (0.086)	-0.014 (0.044)	0.003 (0.792)
<u>Performance and Risk</u>					
<i>PRIOR RETURNS (-12, -1)</i>	(-)	-0.858 (0.029)	-1.070 (0.022)	-0.882 (0.056)	-0.935 (0.050)
<i>POST RETURNS (+1, +12)</i>	(-)	-0.555 (0.056)	-0.802 (0.028)	-1.035 (0.010)	-1.162 (0.006)
<i>lnFIRM RISK</i>	(+)	0.507 (0.158)	0.143 (0.401)	0.014 (0.491)	0.008 (0.495)
<i>ROA</i>	(-)	0.848 (0.490)	1.650 (0.234)	1.780 (0.243)	2.033 (0.200)
<u>Corporate Governance</u>					
<i>CEO TENURE</i>	(-)	0.037 (0.125)	0.041 (0.125)	0.034 (0.239)	0.029 (0.335)
<i>DUALITY</i>	(-)	-0.178 (0.299)	0.187 (0.623)	0.127 (0.756)	0.223 (0.596)

<i>INSIDE DIRECTORS</i>	(-)	-0.021 (0.072)	-0.002 (0.446)	-0.007 (0.328)	-0.005 (0.382)
<i>GRAY DIRECTORS</i>	(-)	0.010 (0.506)	0.015 (0.372)	0.013 (0.470)	0.045 (0.427)
<i>CEO FOUNDER</i>	(-)	-0.818 (0.026)	-0.743 (0.055)	-1.037 (0.020)	-0.999 (0.026)
<i>BOARD SIZE</i>	?	-0.045 (0.573)	-0.084 (0.363)	-0.082 (0.405)	-0.074 (0.455)
<i>INSIDER OWN</i>	(-)	-0.005 (0.370)	-0.018 (0.149)	-0.016 (0.213)	-0.021 (0.154)
<i>INST OWN</i>	?	0.002 (0.770)	0.014 (0.188)	0.014 (0.228)	0.014 (0.227)

Joint Test of Coefficients

MLUCKY GRANTS + (*MLUCKY GRANTS***BACKDATE*) = 0
DLUCKY GRANTS + (*DLUCKY GRANTS***BACKDATE*) = 0

p-value
0.590
0.015

n	233 ^b	233 ^b	233 ^b	233 ^b
Pseudo R ²	11.00%	14.19%	24.51%	25.66%
-2 log likelihood	272.62	259.27	259.27	259.27
Model chi-square	27.13	35.67	65.50	69.08
p-value	0.03	<0.01	<0.01	<0.01
Correctly Classified	70.9	76.2	83.0	84.1

The sample consists of 141 backdating firms and 141 propensity-score matched control firms. Please see Section III for details on the propensity-score matching procedure. Column 1 presents the results of a logistic regression predicting *TURNOVER*, and columns 2-4 present the results of logistic regressions predicting *FORCED TURNOVER*. P-values are in parentheses below the regression coefficients. One-tailed tests are shown for variables with a signed prediction. Two-tailed tests are shown for variables without a signed prediction or when the coefficient sign is opposite of our prediction. All control variables are measured as of the fiscal year-end preceding the backdating event date, unless otherwise specified.

^a Variable Definitions: *TURNOVER* = an indicator variable equal to 1 if the CEO or CFO leaves the firm at any time between the backdating event date and the end of 2007, and 0 otherwise; *FORCED TURNOVER* = an indicator variable equal to 1 if the CEO or CFO is forced out of their position, and 0 otherwise; *BACKDATE* = an indicator variable equal to 1 if the firm is accused of option backdating, and 0 otherwise; *INVESTIGATION* = an indicator variable set equal to 1 if the SEC, DOJ, or Attorney General's office investigated the backdating firm or its managers, and 0 otherwise (note that this variable equals 0 for all control firms, as well as any backdating firms without a regulatory investigation); *RESTATE* = an indicator variable set equal to 1 if a backdating firm announced an earnings restatement in direct response to the discovery of option backdating, and 0 otherwise (note that this variable equals 0 for all control firms, as well as any backdating firms without a restatement); *MLUCKY GRANTS* = the proportion (as a percent of total grants issued) of option grants issued to

the CEO, CFO, or Chair in the 10 years preceding the event date for which the stock price at grant date falls in the bottom 25th percentile of the firm's stock price distribution over a 240-day window around the option grant date (i.e., 120 days before to 120 days after), winsorized at the 1st and 99th percentiles; *DLUCKY GRANTS* = the proportion (as a percent of total grants issued) of option grants issued to directors in the 10 years preceding the event date for which the stock price at grant date falls in the bottom 25th percentile of the firm's stock price distribution over a 240-day window around the option grant date (i.e., 120 days before to 120 days after), winsorized at the 1st and 99th percentiles; *PRIOR RETURNS* (-12, -1) = the buy-and-hold return in the 12 months prior to the event date, with the event date month excluded; *POST RETURNS* (+1, +12) = the buy-and-hold return in the 12 months following the event date, with the event date month excluded; *lnFIRM RISK* = the natural logarithm of the standard deviation of residuals from a regression of daily stock returns on daily value-weighted market returns; *ROA* = return on assets, defined as operating income before depreciation divided by total assets; *CEO TENURE* = the number of years that an individual has served as CEO for the firm; *DUALITY* = an indicator variable equal to 1 if the CEO and Chair are the same individual, and 0 otherwise; *INSIDE DIRECTORS* = the percentage of inside directors on the board; *GRAY DIRECTORS* = the percentage of gray outside directors on the board. An outside director is defined as "gray" if he or she is (a) a former employee, (b) an employee of a significant service provider, supplier, or customer, (c) a recipient of charitable funds, (d) an interlocking director, or (e) a family member of an executive officer; *CEO FOUNDER* = an indicator variable equal to 1 if the firm's CEO is described as a founder and 0 otherwise; *BOARD SIZE* = the number of directors on the board; *INSIDER OWN* = the number of shares held by insiders, scaled by the total number of shares outstanding; *INST OWN* = the number of shares held by institutional investors, scaled by the total number of shares outstanding.

^b Forty-nine observations are excluded due to missing values for *MLUCKY GRANTS*, *DLUCKY GRANTS*, *FIRM RISK*, and *ROA*.

TABLE 5
Subsequent Employment for Displaced Managers

Panel A: Subsequent Employment for CEOs and CFOs of Backdating Firms and Control Firms

	<u>Subsequent Employment of Displaced CEOs and CFOs^a</u>		
	<u>Backdating Firms</u>	<u>Propensity-Score Matched Control Firms</u>	<u>χ^2 p-value</u>
Total Managers Displaced (CEO, CFO)	91	37	--
Comparable employment at public firm (<i>REHIRE1</i>)	18.7% (17)	35.1% (13)	0.046
Hired as employee at public or private firm (<i>REHIRE2</i>)	48.4% (44)	83.8% (31)	<0.001
Hired as employee or director at public or private firm (<i>REHIRE3</i>)	70.3% (64)	89.2% (33)	0.024
Not rehired or unable to identify subsequent employment	29.7% (27)	10.8% (4)	

Panel B: Multivariate Model of Subsequent Employment for CEOs and CFOs of Backdating Firms

<u>Variable^a</u>	<u>Logistic Regression Predicting <i>REHIRE2</i></u>		
	<u>Prediction</u>	<u>Coefficient</u>	<u>P-value</u>
Intercept		0.737	(0.225)
<i>BACKDATE</i>	?	-0.877	(0.056)
<i>INVESTIGATION</i>	(-)	0.438	(0.561)
<i>RESTATE</i>	(-)	-0.077	(0.461)
<i>MLUCKY GRANTS</i>	?	0.006	(0.507)
<i>DLUCKY GRANTS</i>	?	-0.001	(0.916)
<u>Performance and Risk</u>			
<i>PRIOR RETURNS (-12,-1)</i>	(+)	0.632	(0.154)
<i>POST RETURNS (+1,+12)</i>	(+)	0.401	(0.258)
<i>ROA</i>	(+)	-1.433	(0.416)
<i>FIRM SIZE</i>	(+)	-0.000	(0.766)
<u>Other</u>			
<i>CEO TENURE</i>	(-)	-0.001	(0.489)
<i>CEO FOUNDER</i>	(+)	1.096	(0.044)
<i>DUALITY</i>	(-)	-0.779	(0.072)
	n	106 ^b	
	Pseudo R2	14.62%	
	-2 Log likelihood	143.15	
	Model chi-square	16.75	
	p-value	0.16	
	Correctly Classified	71.4	

Panel A reports the percentage and frequency (shown in parentheses below the percent) of displaced managers whose subsequent employment falls into the *REHIRE1*, *REHIRE2*, *REHIRE3*, or Not Rehired categories. χ^2 tests compare the rehire rates of the propensity-score matched control firms to the rehire rates of backdating firms.

Panel B presents the results of a logistic regression predicting *REHIRE2*. The sample includes one observation for each displaced manager at the backdating and propensity-score matched control firms (n = 128). P-values are in parentheses to the right of the regression coefficients. One-tailed tests are shown for variables with a signed prediction. Two-tailed tests are shown for variables without a signed prediction or when the coefficient sign is opposite of our prediction.

^a Variable Definitions: *REHIRE1* = an indicator variable equal to 1 if the displaced CEO (CFO) obtained subsequent employment at another public firm as either President or CEO (President, CEO, or CFO), and 0 otherwise; *REHIRE2* = an indicator variable equal to 1 if the displaced manager obtained subsequent employment at either a public or private firm in any capacity, and 0 otherwise; *REHIRE3* = an indicator variable equal to 1 if the displaced manager obtained subsequent employment at either a private or public firm in any capacity, or took a position as a nonemployee director at either a public or private firm, and 0 otherwise; *FIRM SIZE* = total assets of the firm in millions, winsorized at the 1st and 99th percentiles. All other variables are defined in previous tables.

^b Twenty-two observations are excluded due to missing values for *MLUCKY GRANTS* and *DLUCKY GRANTS*.

TABLE 6
CEO Compensation Changes following Backdating Allegations

Panel A: CEO Compensation Changes between years $t-1$ and $t+2$ for Backdating and Control Firms (No. of observations in parentheses)

Mean Difference between years $t+2$ and $t-1$	Backdating Firms	Propensity-Score Matched Control Firms	t-test Difference p-value
<u>Option Compensation</u>			
$\Delta \#Option\ Grants\%$	-0.1% (83)	0.0% (127)	0.037
$\Delta \$Option\ Grants\%$	-30.3% (94)	-8.1% (125)	0.004
<u>Cash Compensation</u>			
$\Delta Salary\%$	-1.4% (118)	-1.8% (125)	0.459
$\Delta Bonus\%$	-15.2% (110)	-16.7% (125)	0.288

Panel B: CEO Compensation Changes across CEO Turnover categories

Mean Difference between years $t+2$ and $t-1$	<i>CEO Turnover</i>			<i>No CEO Turnover</i>		
	Backdating Firms	Propensity-Score Matched Control Firms	t-test Difference p-value	Backdating Firms	Propensity-Score Matched Control Firms	t-test Difference p-value
<u>Option Compensation</u>						
$\Delta \#Option\ Grants\%$	-0.1% (22)	0.3% (8)	0.048	-0.1% (61)	-0.0% (119)	0.073
$\Delta \$Option\ Grants\%$	-48.8% (25)	15.4% (8)	<0.001	-23.6% (69)	-9.7% (117)	0.084
<u>Cash Compensation</u>						
$\Delta Salary\%$	-1.7% (32)	-9.7% (8)	0.227	-1.3% (86)	-1.2% (117)	0.491
$\Delta Bonus\%$	-14.3% (31)	-23.2% (8)	0.140	-15.6% (79)	-16.3% (117)	0.412

This table details CEO compensation in the periods before and after backdating announcements. The number of observations in each compensation category is included in parentheses next to the compensation amount. Panel A compares changes in compensation between the backdating and propensity-score matched control firms. Panel B splits our sample into those with and without CEO turnover and compares CEO compensation changes among the two groups.

All compensation changes are calculated as the value in year t+2 less the value in year t-1, consistent with Cheng and Farber (2008). Each variable is winsorized at the 1st and 99th percentiles. One-tailed p-values are based on t-statistics for differences in means. Compensation data is from Execucomp and firm proxy statements.

Variable Definitions: #Option Grants% = the number of options granted to the CEO in a given year, scaled by total shares outstanding in the same year and multiplied by 100; \$Option Grants% = the dollar value of options granted to the CEO in a given year, scaled by total compensation in the same year and multiplied by 100; Salary% = CEO salary in a given year scaled by total compensation the same year and multiplied by 100; Bonus% = CEO bonus in a given year scaled by total compensation in the same year and multiplied by 100; Total compensation = CEO salary + bonus + other annual income + restricted stock grants + long-term incentive payouts (LTIP) + all other income + the value of option grants.

TABLE 7
General Counsel (GC) Turnover

Panel A: Comparison of Turnover Rates across Positions

	Backdate Firms			Propensity-Score Matched Control Firms			Difference ^b (p-value)
	N	Frequency	Percent	N	Frequency	Percent	
GC Turnover ^a	95	41	43.2%	110	23	20.9%	<0.001
CEO Turnover	141	42	29.8%	141	13	9.2%	<0.001
CFO Turnover	141	49	34.8%	141	28	19.9%	0.005
All Executive Turnover (GC, CEO, <i>or</i> CFO)	141	88	62.4%	141	49	34.8%	<0.001

Panel B: Comparison of Turnover Rates across Backdating Outcome Categories

	Full Sample Turnover (n = 141)	Restatement (n=91)		No Restatement (n=50)		Difference ^b (p-value)	Regulatory Investigation (n=94)		No Regulatory Investigation (n=47)		Difference ^b (p-value)
		<u>Frequency</u>	<u>Percent</u>	<u>Frequency</u>	<u>Percent</u>		<u>Frequency</u>	<u>Percent</u>	<u>Frequency</u>	<u>Percent</u>	
GC Turnover	41	29	31.9%	12	24.0%	0.329	27	28.7%	14	29.8%	0.784
CEO Turnover	42	34	37.4%	8	16.0%	0.008	35	37.2%	7	14.9%	0.006
CFO Turnover	49	39	42.9%	10	20.0%	0.006	37	39.4%	12	25.5%	0.104

Panel A reports turnover frequency for General Counsel (GC), CEO, and CFO. Panel B documents the relative frequency of turnover for each individual across backdating outcome categories. To determine GC turnover, we search proxy statements one year before and two years after the backdating event date. We assume turnover has occurred if the individual holding the position of GC is different in the two periods.

^a Sample size of backdating firms differs from that of control firms due to missing data.

^b The reported p-values are based on two-tailed Chi-square tests of the differences in turnover across categories.