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UNINTENDED CONSEQUENCES: INFORMATION RELEASES AND CEO STOCK OPTION GRANTS

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Scholars, regulators, and practitioners have long struggled with challenges emanating from the separation of ownership and control of modern corporations. Agency theory typically prescribes the use of stock options, or other outcome-based contractual arrangements, to overcome the critical issue of information asymmetry. We theorize that this arrangement, which leaves information asymmetry in place, provides CEOs an informational advantage that can be used, via impression management techniques, to circumvent some of the intended benefits of option grants. Specifically, we argue that the period leading up to an option grant creates a scenario where CEOs are incentivized to reduce the stock price of their firm for personal gain. Our results suggest that CEOs respond to this incentive by adjusting the tenor of releases from the firm during the pregrant period, providing CEOs a substantial economic gain. We also show that underpaid CEOs and CEOs with higher discretion pursue this activity more frequently. Our findings highlight a critical challenge of agency theory: if information asymmetry remains, a motivated CEO can often circumvent the contractual arrangements intended to mitigate that very problem. We offer future research paths and practical recommendations to address this issue.

Since the advent of the modern corporation with its distinctive feature of a separation of ownership and control (Berle & Means, 1932), constraining managerial opportunism remains a fundamental challenge of corporate governance. This challenge has spurred much research on governance issues, dominated by agency theory (Eisenhardt, 1989; Jensen & Meckling, 1976), and is also the target of a great deal of regulatory attention (e.g., Sarbanes–Oxley, 2002). Indeed, agency theory is described as the "dominant perspective on which governance research relies" (Dalton, Hitt, Certo, & Dalton, 2007: 2), with its cornerstone of aligning the interests of owners and managers positioned as a cure for the many ills of the modern corporation (Gomez-Mejia, Berrone, & Franco-Santos, 2010; Wiseman, Cuevas-Rodríguez, & Gomez-Mejia, 2012).

Agency theory both explains the problems related to executive behavior and proposes corporate governance solutions. First, it details the problem of managerial opportunism, or the penchant of some managers to make "use of corporate information for private benefit" (Chalmers, Dann, & Harford, 2002: 609), thereby elevating their own interests ahead of those of the firm's owners. Second, it offers potential solutions to this misalignment of interests based upon contracts and incentives. While research has provided overwhelming support regarding manager

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behaviors and organizational issues predicted by agency theory (Dalton et al., 2007), the suggested solutions have enjoyed less support (Bebchuk & Fried, 2003; Dalton, Daily, Certo, & Roengpitya, 2003; Sundaramurthy, Rhoades, & Rechner, 2005). Notably, scholars across multiple disciplines have concluded that there is little evidence that the prescriptions of agency theory—the concepts underpinning much of the regulation and supposed best practices of corporate governance—are effective. Emphasizing these points, Dalton and colleagues (2007: 2) noted:

> While we are confident that this foundation [e.g., predicted undesirable behaviors] of agency theory is unavoidable and intractable, other elements derived directly from agency theory are far less settled. Indeed, even after some 75 years of conceptualization and empirical research, the. . .fundamental means of mitigating the agency problem. . .remain contentious.

Thus, despite agency theory driving decades of research and regulation, agency problems persist.

One explanation for this may be that common solutions to agency issues are often aimed at addressing individual aspects of the agency problem, rather than the interconnected whole. Eisenhardt (1989), for example, argued that the "agency problem" is rooted in the issues of conflicting goals, differing risk preferences, and information asymmetry between the principal and agent. While agency theory argues that principals can obtain information at a cost, in practical terms the CEO has extensive control over corporate information. Further, while boards are tasked with reducing information asymmetry through monitoring, they are often unable to counter this advantage, such that it is "inevitable that executives will be more fully informed than the board" (Monks & Minow, 2011: 300). Because reducing asymmetry is so costly and difficult (Walsh & Seward, 1990), the bulk of agency theory recommendations have been focused elsewhere—on conflicting goals and risk preferences—via contracting designed to elicit desired behaviors and outcomes (Dalton et al., 2007). The goal is to create incentives that align interests, while leaving the asymmetry largely intact but less problematic. We argue that this persistence of information asymmetry helps to explain why many recommendations from agency theory prove ineffective.

As a result of having ultimate decision authority at their organizations, CEOs have substantial control over the flow of information to external stakeholders. CEOs specifically have the ability to decide whether and how various information will be released by the firm (e.g., Graffin, Haleblian, & Kiley, 2016). Indeed, prior agency theory research on information asymmetry has tended to focus on "specific information relating to decisions" (Fama & Jensen, 1983: 305) or outcomes, while ignoring the fact that CEOs also have an informational advantage in terms of when and how external stakeholders become aware of organizational developments, as well as in shaping the descriptions of them. Most importantly, and despite legal requirements for reporting "material events," CEOs have nearly total control over information releases that is largely unchecked, and perhaps uncheckable, by regulators or boards of directors.

We theorize, and find, that CEOs use their information advantage to mute the desired effects of using stock options to align interests. Specifically, the period leading up to CEO option grant dates is unique as it is the one instance when CEOs are incentivized by options to *reduce* the stock price of their company, putting the CEOs' interests in direct conflict with those of shareholders. We argue that CEOs use their information advantage to reduce their firms' stock price through impression management tactics. While impression management theories typically predict that CEOs will describe their firms in the most positive (or least negative) light possible, this logic may not hold in the small window leading to an option grant due to the perverse incentives created by those options. That is, during this time, CEOs may shape the release of information by casting the firm in a relatively more negative light which, in turn, reduces the firm's stock price, decreases the strike price of a CEO's options, and provides a private financial benefit as it becomes easier for the CEO to achieve a larger "in-the-money" option in the future. Building from equity theory, we also theorize, and find, that relatively underpaid CEOs are more likely to employ this tactic. Finally, we theorize and show that CEOs in high-discretion settings (Hambrick & Finkelstein, 1987) are more able to pursue these actions. In sum, we show that the tool commonly used to address the agency problem—stock options—may be manipulated by CEOs using a mechanism—information asymmetry—that options are designed to, at least indirectly, alleviate.

Our study makes three primary contributions. First, we contribute to agency theory by uncovering what amounts to a significant "loophole" of a common agency prescription. We demonstrate that failing to directly address information asymmetry

allows CEOs to circumvent the intended effects of one of the most prevalent recommendations emanating from the theory—the granting of options to align interests. We find that the very mechanism agency theorists have suggested will help to address the agency problem—stock options—have the unintended consequence of driving other agency behaviors related to information asymmetry. Second, despite the backlash and increased regulation following the options back-dating scandal of the mid-2000s, where some CEOs were found to have manipulated the strike price of options via post hoc selection of an option grant date when the stock price was most advantageous, we find that some CEOs still benefit from strike price manipulation, albeit through a different mechanism. Our results suggest that, despite sweeping regulations designed to reign in managerial malfeasance, CEOs continue to leverage their informational advantage to bypass regulatory efforts. Finally, in discussing our results, we generalize our findings to broader governance issues by highlighting the importance of directly addressing information asymmetry. We conclude by offering practical policy suggestions to address this persistent challenge of corporate governance. These remedies directly address major governance issues driven by information asymmetry, which, to this point, have been largely absent from the prescriptions offered by corporate governance research and policy.

THEORY AND HYPOTHESES

Background: Stock Options and Strike Price Manipulation

Scholars, regulators, shareholders, and boards of directors wrestle with the agency problem caused by the separation of ownership and control (Berle & Means, 1932; Jensen & Meckling, 1976). Agency theory asserts that managers in the modern corporation are boundedly rational, risk averse (Eisenhardt, 1989), and self-interested. While the board's central task is to specify a contract that addresses these agency issues, a long stream of research has consistently shown that, left unchecked, top executives will find ways, both legal and not, to extract greater rents from the firms they lead. Prior research has shown that "executives may 'game' the incentive system, enabled by the presence of 'information asymmetry' (Baker, 1992), behaving in ways that increase their own rewards while reducing their firm's performance" (O'Connor, Priem, Coombs, & Gilley, 2006: 487). Examples of untoward behavior include CEOs manipulating earnings and changing accounting practices to maximize bonuses (Healy, 1985), the use of derivatives to boost equity compensation value (Barton, 2001), and backdating of option grants to enhance their "in-the-money" value (Heron & Lie, 2007).

While regulation tightened the use of backdating more than a decade ago (Sarbanes–Oxley, 2002), options remain a popular means of addressing agency issues. CEOs are typically awarded the option to purchase sizable blocks of the firm's shares at some future date, often years into the future, at a strike price, or purchase price, equal to the current price of the stock. If the share price increases above the strike price, options are "in the money," creating wealth gains for the CEO equal to the new price minus the strike price times the number of options awarded. Options are an outcome-based incentive for executives (Fama & Jensen, 1983) that provide substantial upside potential to increases a CEO's willingness to take risks, incentivize them to act in the best interests of shareholders, and sometimes motivate them to pursue unethical or illegal actions (Harris & Bromiley, 2007; Priem & Butler, 2001). Importantly, however, the underlying information asymmetry is not resolved.

While stock options generally incentivize CEOs to increase the firm's share price, the time period leading up to the option grant is unique in that it can incentivize CEOs to lower the firm's share price. Indeed, *ceteris paribas* (and as was seen with the option backdating scandal), the lower the stock price at the time of grant, the higher the potential future payout for the CEO. CEOs may realize these gains in two ways. First, a lower share price at the time of grant leads to a lower strike price, which increases the executive's potential future wealth when they exercise the option. This occurs because it is easier to surpass the lower strike price. Second, option grants are often set based on their overall face value (number of shares times current price of the stock) (Walker, 2007), rather than on some specific number of shares; if the stock price goes down just before issuance, then not only is the strike price lower, but the number of share options granted increases too. If the stock price subsequently goes up, the CEO will see those increased gains across the increased number of shares. Each of these contributes to the wealth gains of the CEO while contributing to greater firm expenses in the future (Devos, Elliott, & Warr, 2015). In short, while options might align interests of shareholders and the CEO by creating common gains

from increasing the stock price *after* the grant is given, prior to the grant, options ironically incentivize behaviors that are counter to shareholder interests.

Given the amount of stock options awarded to typical CEOs, even a small shift in a firm's stock price can lead to sizable changes in wealth. Accordingly, despite the fact that options are used to align interests, this period prior to a grant incentivizes CEOs to engage in self-interested behaviors. Indeed, a well-publicized options backdating scandal erupted in the mid-2000s in this context. Rather than pricing options on the grant date, it emerged that many firms had retroactively granted CEOs' options at a price corresponding to the most advantageous date over the preceding months. Backdating options boosted the pay of CEOs by manipulating their "in-the-money" options (Heron & Lie, 2007; Wiersema & Zhang, 2013). This covert manipulation, diffused through networks of directors and corporate advisors (Bizjak, Lemmon, & Whitby, 2009; Mohliver, 2019), inflated CEOs' compensation—notably that of Steve Jobs and Michael Dell—by millions of dollars, and led to reduced investor confidence, reputational damage, financial restatements, shareholder lawsuits, and even criminal investigations.

While regulations now require the reporting of options within four days of grant, effectively eliminating backdating, CEOs seemingly continue to be "lucky" in terms of their firm's stock movements prior to option grants (Bebchuk, Grinstein, & Peyer, 2010). For example, in 2012, the CEO of a large logistics firm received options on nearly 200,000 shares. One month earlier, the stock traded about 5% higher than on the grant date. A month later, the stock price returned to pregrant levels. The same pattern occurred the prior year even though the stock price shifted little during that year. If these movements were simply a reflection of what was happening in the broader market, the CEO would benefit by chance. On the other hand, if this firm's stock price moved counter to market trends (e.g., there was a negative abnormal return) in the pre-option grant period, as happened here, then these grants may have been awarded at a discount to prevailing prices. Such changes can result in large gains for CEOs—in this case more than $1 million. What makes this example notable is that it occurred in 2011 and 2012—years after the options backdating scandal and nearly a decade after the passage of the Sarbanes–Oxley Act (SOX).

In a seemingly unending cycle of trying to restrict managerial opportunism, once practices such as option backdating are known they are patched by new regulations, but, inevitably, new practices emerge to circumvent them. Following from the basic tenets of agency theory, given the opportunity for wealth gains we expect that executives will find ways to circumvent regulations and still exhibit self-serving behavior, even after the advent of SOX. As a baseline hypothesis, then, we expect a negative return to stocks in the period before option grants are issued. More formally, we propose:

Hypothesis 1. There is a negative cumulative abnormal return (CAR) for firms in the period preceding CEO stock option grants.

Information Asymmetry and CEO Informational Advantage

Agency theory recognizes two interrelated issues principals face in monitoring agents: self-interest and information asymmetry. As discussed, proposed solutions to agency issues are often rooted in contracting arrangements attempting to align the interests of the agent with those of the principal. Among the more common is the granting of stock options. Hall (2000: 122) argued that "Options are the best compensation mechanism we have for getting managers to act in ways that ensure the long-term success of their companies and the well-being of their workers and stockholders." Others have suggested that incentive compensation, like stock options, help reduce the impact of asymmetry by causing the agent to focus on outcomes of value to the principal when the agent's behavior is difficult to observe (Conlon & Parks, 1990; Roth & O'Donnell, 1996). That is, even if CEOs maintain an information advantage, with options as a motivator, they will pursue shareholder wealth–maximizing initiatives rather than use that advantage in a purely self-interested way, as the interests of the CEO and shareholders are aligned. Indeed, a 2015 report found that options remain an important part of CEO compensation, representing about 15% of total CEO compensation at S&P 500 firms (Equilar, 2016).

At the same time, even with a motivated board, the underlying information asymmetry persists for several reasons. First, gathering information about the firm is costly and difficult, such that it is unlikely that board members will have sufficient time to effectively mitigate the information advantage held by managers (Fama & Jensen, 1983; Walsh & Seward, 1990). Second, even if board members could dedicate sufficient time and effort to gather information, they may lack day-to-day knowledge about the firm

(Fama & Jensen, 1983), limiting their ability to ask the right questions and properly interpret information once it has been gathered. This issue is amplified by the recent decline in the number of inside directors (Dalton et al., 2007). Indeed, Fama and Jensen (1983: 314) noted that for directors to effectively monitor they, "must be able to use information from the internal mutual monitoring system...To accomplish this. . .we expect the board of a large open corporation to include several of the organization's top managers." As the number of inside directors declines (the CEO is now often the only inside director), this source of information becomes unavailable. Third, and perhaps most notable for our purposes, prior notions of asymmetry are typically limited to observing CEOs' decisions and decision processes, which is why agency theory solutions to this issue typically focus on outcome-based compensation schemes, like options. In contrast, our broader view of asymmetry, focusing on all of the details about firm operations and events, means that "directors can never know as much about the operation of the company as management" (Monks & Minow, 2011: 295).

Finally, because directors must largely rely on the CEO and other managers for firm information (Fama & Jensen, 1983), they are at an informational disadvantage relative to the CEO. That is, even if directors spent the requisite time and asked the proper questions, CEOs may elect to reveal only partial, or even self-serving, information. This information advantage has received little attention in the corporate governance literature and is largely unaffected by efforts aimed at transparency. That is, even with the required quarterly and annual reports, reporting of executive compensation, disclosure of material events, and the many other mandated releases, CEOs still enjoy an informational advantage simply because of the position they hold.

Impression Management

Impression management tactics use strategic releases of information to shape the perceptions of various audiences both within and outside organizations (Elsbach, Sutton, & Principe, 1998; Graffin, Carpenter, & Boivie, 2011). CEOs use impression management tactics to achieve various goals, such as affirming the quality of their firm's governance following negative analyst reports (Westphal & Graebner, 2010) and avoiding bad press (Westphal & Deephouse, 2011; Westphal, Park, McDonald, & Hayward, 2012). Moreover, studies have shown that these tactics are effective, as they can influence external stakeholders' perceptions of acquisitions (Graffin et al., 2016), CEO succession announcements (Graffin et al., 2011), product recalls (Zavyalova, Pfarrer, Reger, & Shapiro, 2012), and other events (for a review, see Elsbach, 2006). Because these tactics are effective, "many managers systematically behave as if impression management were a core part of their task" (Davis, 2009: 96).

Much like the relationship between executives and directors, firm leaders can leverage information asymmetry between themselves and stakeholders through impression management tactics. Executives do so by selectively crafting releases to positively influence stakeholders' assessments of the firm (Porac, Wade, & Pollock, 1999; Westphal & Zajac, 1995). That is, as firms work to shape how an event is understood (Coombs, 2007), leaders try to ensure that stakeholders see the most positive aspects of an event (Zajac & Westphal, 2004). While research has typically not focused on deliberate attempts to *negatively* shape firm perceptions, such tactics exist. For example, when firms hire a new CEO (Pourciau, 1993) or face a proxy battle (DeAngelo, 1988), they may take "big baths," or large accounting charges, to "create an advantageous financial base conducive to enhancing the rate-of-return in subsequent years" (Walsh, Craig, & Clarke, 1991: 173). Firms may also attempt to reduce analysts' expectations when they are too optimistic (Bartov, Givoly, & Hayn, 2002), or "obfuscate" by releasing unrelated news around potentially negative events (Elsbach et al., 1998; Graffin et al., 2011).

Though CEOs play an important role in shaping firm information releases, there are regulations to limit that control. Section 409 of SOX addresses this as follows:

> Each issuer. . .shall disclose to the public on a rapid and current basis such additional information concerning material changes in the financial condition or operations of the issuers, in plain English, which may include trend and qualitative information. (Securities and Exchange Commission, 2004)

This rule was clarified and the SEC now requires organizations to disclose material events by the end of the fourth day following the event (Marchetti, 2005).

In practice, despite this seemingly clear legal guidance, enduring information asymmetry allows CEOs to still have substantial discretion in three

key areas: first, whether discretionary information is released; second, when mandatory information is released; and, finally, when information is released, how that information is crafted. The idea that CEOs can determine whether a disclosure happens is likely the most important, but least discussed, element by which CEOs can leverage their informational advantage. For instance, if the firm is interested in an acquisition, the CEO can announce it while searching, upon finding a suitable target, or only after making an offer. While information about an acquisition must eventually come out, there are many points in the process where a CEO has latitude regarding the timing of disclosure. Second, when CEOs elect to disclose an occurrence externally, they control whether the release has a positive, negative, or neutral valence. For instance, if a firm enters a new country it could (1) simply state this fact, (2) focus on the potential upside of the market, or (3) emphasize potential risks of the move (or a mixture of these). Similarly, if CEOs reveal a pending lawsuit, they have leeway in terms of discussing the chances of winning or losing the case, or the size of any liability.

In the period prior to the issuance of stock options, their structure incentivizes CEOs to reduce their firm's share price. Additionally, information asymmetry gives CEOs the latitude to release negative (or less positive) information[1] and shape the tenor of their releases. Taken together, this creates a situation where CEOs are incentivized and enabled to release negative news in an effort to reduce the strike price of their options. We thus hypothesize:

Hypotheses 2. Relative to other times of the year, firms release a larger quantity of negatively valanced press releases in the period preceding CEO stock option grants.[2]

To complete our logic and highlight the mechanism driving these results, we link these two hypotheses. Specifically, core to our argument is the notion that a CEO's informational advantage and their ability to use impression management lead to more negatively valanced releases in the weeks prior to option grants, which, in turn, drives the negative abnormal return in that period as well. Hypothesis 3 links these two arguments by hypothesizing that the negative releases issued by firms prior to option grants drive the negative abnormal returns observed in a firm's share price.

Hypothesis 3. In the period preceding CEO stock option grants, the quantity of negatively valanced press releases issued by a firm is negatively related to the CAR over that period.

While the idea that negative news results in stock price declines may seem intuitive, it is important to investigate the specific releases issued just prior to an option grant. That is, Hypothesis 3 tests the mechanism—negative news prior to an option grant—for our outcome of interest—lower option strike prices. This provides an empirical test for an important aspect of our overall nomological network (Cronbach & Meehl, 1955).

Leading Executives to Use this Mechanism: CEO Underpayment and Discretion

Our arguments thus far focus on the agency problem, whereby managers, due to information asymmetry, can enhance their own outcomes. While agency theory argues that individuals pursue self-interested acts when given the opportunity, research rooted in social psychology indicates that situational factors can affect the level of self-interest exhibited by individuals (Wang & Murnighan, 2011). We next focus on two factors that should amplify our hypothesized relationships—CEO underpayment, which may be a potential motive to engage in this behavior, and managerial discretion, which provides a means to do it.

CEO underpayment. CEOs are keenly aware of their pay relative to others in their industry (Donaldson & Lorsch, 1983), and researchers have noted that "pay is a primary scorecard for managerial success" (Finkelstein, Hambrick, & Cannella, 2009: 345). Equity theory proposes that individuals are aware of the rewards for their efforts compared to others and, when rewards are out of line, they try to restore equity. Equity theory has four key propositions. First, individuals

[1] We do not mean to imply that firms are actively releasing extremely or strictly negative press releases. We are proposing that they will release a higher quantity of relatively negative, or less positive, press releases. Press releases are generally positive. In our sample the mean press release tenor is 0.81, meaning 81% of the affective words in these press releases are positive and 19% are negative. What we examine here are relatively negatively valanced press releases compared to other press releases.

[2] There are two mechanisms by which this could occur. CEOs could either elect to release a larger quantity of negative news during this period or they could more negatively shade the tenor of releases. We test both mechanisms.

"evaluate their relationships with others by assessing the ratio of their outcomes from and inputs to the relationship against the outcome/input ratio of a comparison other" (Huseman, Hatfield, & Miles, 1987: 222). Second, when a person recognizes the ratios to be unequal, perceived inequity exists. Third, people feel distress in proportion to the level of inequity. Finally, the greater the distress, the more people will work to restore equity. They can restore equity by "altering or cognitively distorting inputs or outcomes," among other techniques (Huseman et al., 1987: 222).

For example, if a CEO sees him- or herself as underpaid relative to peers, equity theory suggests that there is a desire to correct the imbalance (Adams, 1963; Greenberg, 1982), even in the executive suite. Research has suggested that relatively underpaid CEOs engage in more acquisitions (Seo, Gamache, Devers, & Carpenter, 2015) and increase R&D spending (Fong, Misangyi, & Tosi, 2009) to increase their pay and reduce inequity. Other studies have linked inequity with theft, shirking, and other unethical behavior (Greenberg, 1990; Wang & Murnighan, 2011).

While we noted that all CEOs enjoy information advantages, in the context of option grants underpaid CEOs should be more motivated to reduce perceived inequity. By lowering the strike price of their options, CEOs gain two compensatory benefits. First, since options are often granted based on overall value, a lower strike price means the CEO will receive a larger number of stock options (Walker, 2007). Second, if a CEO reduces the strike price through a temporary shift in the firm's stock price, they will increase the potential future gain when exercising those options. Underpaid CEOs will, therefore, be more inclined to reduce inequity, through lower strike prices, by releasing a larger quantity of negative news prior to a grant. We thus hypothesize:

Hypothesis 4: In the period before an option grant, underpaid CEOs will release a larger quantity of negative press releases, which, in turn, will drive increasingly negative CARs.

Managerial discretion. We next consider the influence of managerial discretion—the extent to which managers can pursue varied courses of action (Hambrick & Finkelstein, 1987)—on CEOs' efforts to lower their options strike price. In low-discretion settings, courses of action are limited because of industry norms, resource constraints, prior investments, or regulation. In contrast, high-discretion settings have greater means–ends ambiguity (Hambrick & Abrahamson, 1995; Thompson, 1967) that allows CEOs broader latitude to pursue unique strategies. When it comes to communicating firm information externally, CEOs in high-discretion settings are likely to have greater latitude in the way they craft information releases. Further, they will face less scrutiny if releases deviate from industry norms. All of this affords CEOs greater opportunity to craft and issue more press releases with negative tenor. Moreover, because CEOs in high-discretion settings can have a greater impact on firm outcomes (Crossland & Hambrick, 2011), markets should be more attuned to high-discretion CEOs, and quickly react to subtle differences in the way these CEOs release information. Overall, then, we expect that CEOs with higher levels of discretion will be more likely to use this mechanism to affect their stock option strike price.

Hypothesis 5: In the period before an option grant, high-discretion CEOs will release a larger quantity of negative press releases, which, in turn, will drive increasingly negative CARs.

Our logic implies that underpayment and discretion lead to negative releases before a grant, which then reduce a firm's stock price. This implies mediation, which we use in our formal tests of Hypotheses 4 and 5.

METHODS

Sample

Our sample consisted of option grants to CEOs of large U.S. publicly traded companies from 2009 to 2013. This period is well after the backdating scandal and the implementation of SOX, allowing enough time for these regulations to take effect. We formed our sample by first searching "Table 2" of the Thompson-Reuters insider filings database via Wharton Research Data Service (WRDS) to find grants of stock options to CEOs. We then merged the data with Execucomp (for CEO-related data) and Institutional Shareholder Services Director database (for board data); removed grants from the first year of a CEO's tenure (because these CEOs cannot affect news releases prior to grants awarded as they are hired); removed grants that occurred within 60 days of another grant to the same individual; eliminated firms that did not issue press releases from 2009 to 2013; and combined multiple grants received on the same day. The resulting

sample included 1,753 option grant dates representing 659 CEOs across 627 firms.

Dependent Variables

Cumulative abnormal returns. To test Hypothesis 1—that there is a negative CAR for firms in the period preceding CEO stock option grants—we performed an event study (McWilliams & Siegel, 1997). Event studies capture the abnormal stock market return around an event—in this case, the period leading up to a CEO's stock option grant. We envision that CEOs can affect the desired outcome over several weeks leading up to the grant. Moreover, CEOs are unlikely to manipulate the stock price through news releases immediately before an option grant as this might invite unwanted scrutiny. Thus, focusing on a small window likely would not capture the entirety of the underlying behavior. As a result, we focused our primary analysis on a six-week period (30 trading days) prior to the grant, but also confirmed our results using other periods, as discussed below. Additional details on our Eventus models are provided in the "Analyses" section below. The average C*AR* across all option grants was used to test Hypothesis 1, and the individual CARs associated with each grant were used as the dependent variable in our test of Hypotheses 3, 4, and 5.

Negative press releases. We measured the dependent variable for Hypothesis 2 in two ways: (1) the number of *negative press releases* issued by the firm in the period before the option grant and (2) the *overall affective tone* of the releases. To form these measures, we searched for each firm using Business Wire and PR Newswire through LexisNexis covering one year before each grant. Each release was reviewed to ensure it was released by the firm rather than some other entity mentioning the firm. A total of 49,436 press releases were collected.

We used Linguistic Inquiry and Word Count (2015) software (Pennebaker, Booth, & Francis, 2007) to content analyze the press releases. Specifically, the software counted the total positive affective and total negative affective words for each press release. Next, the tenor of each press release was calculated as:

$$\textit{Press Release Tenor} = \frac{\textit{positive words}}{(\textit{positive words} + \textit{negative words})}$$

Generally, press releases were written positively—the mean tenor was 80.9%, indicating that eight out of 10 affective words were positive. A press release was categorized as being negative if the tenor was in the bottom quartile of all releases. For the first test of Hypothesis 2, negative press releases were the count of these bottom-quartile releases issued by a firm in the period.

For the second test of Hypothesis 2, we calculated press release tenor in the same way but combined all releases in a period together for the calculation. Unlike the count of negative releases, which is measured as 0 when no press releases are issued in a given period, the overall affective tone takes a missing value for periods without press releases, thus excluding them from our analyses. If we instead replace them with mean values, our results are unchanged.

Because our interest was in comparing the count and overall tenor of press releases in the period prior to a grant versus other times of the year, we created a series of six-week (30-trading-day) periods starting from the option grant date and working backward.[3] Additional six-week periods were created until the resulting period included a new option grant for the CEO (which would trigger the start of a new set of observations) or a maximum of one year. Since most CEOs receive options on or about the same date each year, this typically resulted in a panel of eight six-week periods per grant. The total number of negative press releases and the overall affective tone of releases were calculated for each of these periods.

Independent Variables

Option grant at end of period. For testing Hypothesis 2, our variable of interest was a dummy taking the value of 1 for the six-week period that ended with an option grant for a given CEO. This variable was coded as 0 for all other periods.

Negative press releases in period of option grant. For testing Hypothesis 3, our variable of interest was the number of negative press releases issued in the period before an option grant, and the overall affective tone (same as the dependent variables for Hypothesis 2).

CEO underpayment. CEO underpayment represents the difference between a CEO's actual pay and how much that particular CEO should receive, relative to other CEOs, as indicated by industry, firm size, performance, and other factors noted below (e.g., Combs & Skill, 2003; Ezzamel & Watson, 1998). We chose to assess each CEO's actual and

[3] We repeated our analysis using five- and seven-week periods, with results substantively unchanged from reported models.

expected pay using a wage model estimating the natural log of their total direct compensation. This variable was winsorized (first and 99th percentile) to reduce the influence of outliers. Total direct compensation (TDC1 in Execucomp) is the sum of salary, bonuses, restricted stock grants, option grants, performance share grants, and other income. We used a number of indicators to predict the pay a CEO could expect to receive: sales, research and development (R&D) intensity (R&D expenses divided by sales), return on assets, market-to-book ratio, total shareholder returns, the natural log of firm age, presence on the S&P 500 index, CEO tenure, an adjustment for the cost of living for the company's headquarters location, four-digit Global Industry Classification Standard (GICS) industry code, and year. Sales, R&D intensity, return on assets, market-to-book ratio, and total shareholder returns were averaged over the prior two years. We used a generalized estimating equations model (Hardin & Hilbe, 2003; Liang & Zeger, 1986) to predict pay for each CEO based on the above factors. We then subtracted the estimated pay from the actual total direct compensation; this result was multiplied by −1, so positive numbers indicate greater underpayment relative to a given CEO's peers.

Managerial discretion. For Hypothesis 5, we measured managerial discretion, or the latitude CEOs have to consider multiple courses of action (Hambrick & Finkelstein, 1987) at the industry level (two-digit SIC) using multiple indicators. Following Chen, Crossland, and Luo (2015), the measure included R&D intensity (industry mean R&D expense divided by total revenue), industry munificence (average market growth over the previous five years), industry concentration ratio (Herfindahl index) (reverse coded), and average capital intensity (industry mean net property, plant and equipment divided by the number of employees; reverse coded).

Control Variables

We controlled for several factors that might affect the number of negative press releases issued by the firm or the abnormal return. At the firm level, we controlled for *firm size* (natural log of total assets) and recent performance (*return on assets*, the firm's net income divided by total assets) in the prior year. These variables were collected from Compustat. We controlled for *board independence* (percentage of true outsiders on the board, as coded by the Institutional Shareholder Services), as this might constrain a CEO's ability to manipulate firm news. We also controlled for *CEO duality* (if the CEO also served as board chair) and *CEO ownership* (natural log of the percentage of shares outstanding owned by the CEO), as these might afford the CEO more ability to control information. We also controlled for *CEO age*, *gender*, *tenure* (years in the CEO position), and *total compensation* (natural log of TDC1) collected from Execucomp. For models predicting negative news in a period, we controlled for a count of the *total press releases in the period*. For models predicting the negative abnormal return prior to the option grant, we controlled for the count of the *negative press releases issued during the rest of the year* when using the count of negative press releases as the independent variable. These press releases were collected in the same manner as the prior press release variables.

Analyses

To test Hypothesis 1, we used the event study methodology (McWilliams & Siegel, 1997) via the Eventus software of WRDS. Following prior event studies, we calculated market model abnormal returns (Wade, Porac, Pollock, & Graffin, 2006) using an estimation model period of 255 trading days ending 46 days prior to the event date. Eventus generates a CAR for each event by subtracting the calculated return from the actual return of each stock. The mean CAR of our events was used to evaluate Hypothesis 1.

To test Hypotheses 2, we used generalized estimating equations (Hardin & Hilbe, 2003; Liang & Zeger, 1986), which account for a panel dataset with repeated measures within a single firm. As our measures were repeated over time, we specified an autoregressive-1 (AR1) correlation structure. Our test of Hypothesis 2, using the count variable (number of negative press releases), used a negative binomial model family with a log link. For our affect measure, the dependent variable was continuous, so we specified a normal distribution and identity link function. The test of Hypotheses 2 and 3 used the *xtgee* command in Stata 15.1. To test Hypothesis 3, we used linear, ordinary least squares regression with robust standard errors clustered on firms (the *reg* command in Stata 15.1).

Hypotheses 4 and 5 propose that underpayment and managerial discretion increase the likelihood that CEOs use negative press releases to reduce the stock price in the period leading up to option grant dates. To test these hypotheses, we used structural equation modeling (SEM) (Kline, 2010) using the *sem* command in Stata 15.1. SEM is suitable for testing indirect effects, especially with multiple independent

variables and mediators. All SEM models were run using robust standard errors clustered by firm. Further, all control variables in the primary models were used as controls for the mediator and dependent variables in each model. Because we use clustered standard errors, only fit statistics based on the size of residuals are available; as such, each model is reported with the standardized root mean squared residual.

RESULTS

Tables 1A and 1B provide descriptive statistics and correlations for our sample. We tested for multicollinearity in our data using a variance inflation factor (VIF) analysis. Mean VIFs were 1.29 and 1.46 for our models testing Hypotheses 2 and 3, respectively, with no individual values greater than 2.25, which is well below the thresholds commonly used to indicate model misspecification (Cohen, Cohen, West, & Aiken, 2003).

Table 2 provides the CAR for various periods leading up to the option grant date. It shows a mean CAR of –1.31% in the 30 trading days (six weeks) leading up to an option grant, which suggests statistical support for our first hypothesis ($p < 0.001$). This CAR is similar to the –1.78% found in the 30-day pregrant period by Aboody and Kasznik (2000) in a study prior to SOX. The CAR is even more negative, at –2.24%, in the 45 trading days leading up to an option grant ($p < 0.001$). This value continues to be negative in the shorter period between 0 and 20 days before the grant. While its size is reduced, it continues to be statistically significant (–0.61%, $p < 0.05$). When the window is reduced to 0 to 15 days prior to an option grant, the value decreases further, but still has a 90% likelihood of being different than 0 (–0.29%, $p = 0.104$). In short, the strong negative CAR in the period just before an option grant provides support for Hypothesis 1. Further, it appears that returns are most negative several weeks prior to the actual grant, rather than in the days immediately preceding the grant.

For CEOs to benefit from the release of negative news, the decline must be temporary. That is, subsequent gains must be in excess of the market to make up for the decline prior to the grant. To assess this, we calculated abnormal returns in the three years following the grant (most options vest in one, two, or three years, with 81.5% of options vested within three years; CEOs typically have between seven and 10 years to exercise options before expiration). By year 3, average abnormal returns approached 5.5% ($p < 0.001$). We also looked more closely at the reactions for individual grants. CEOs who are more effective at manipulating their option grants might be expected to see more proximal returns to normal than the average CEO. To assess this, we considered CEOs in our sample with two or more options grants (460 total CEOs) who also had at least two grants where the stock saw an abnormal decline of more than 2% in the 30 trading days prior to the grant and more than 2% rebound in the 30 trading days following; 51, or 11.1%, matched this pattern. For at least some CEOs, the gains seemed to accrue almost immediately.

The decline in share price prior to a grant results in substantial monetary gains as well. The average option grant in our sample had a base value of $6.41 million (the number of options granted multiplied by the strike price). Thus, a –2.24% average CAR in our longest period equates to an average gain of $143,500 at the time of issue relative to the price that existed several weeks before the grant. If, on the other hand, we consider only those grants that had negative CARs—that is, those grants where the CEOs might have successfully manipulated the strike price—the average CAR was –13.1%. This is comparable to the 12% discount reported for backdated options (Bebchuk et al., 2010; Walker, 2007). To the extent that this reduced sample better represents those who likely engaged in strike price manipulation, we estimate that this practice equated to an average gain of $839,000 for these CEOs.[4] Both of these estimates set aside the impact of an inflated number of options granted due to the lower strike price, which would further increase the net value of this form of manipulation (Walker, 2007). For example, consider the average firm that targeted a stock option grant value of $6.41 million with a stock price of $50 per share. This CEO would receive options on 128,200 shares. A 2.24% reduction in the share price of the stock would result in an option grant on 131,352 shares at a strike price of 48.80. Assuming a 10% yearly raw return for the firm's stock, this CEO would realize a gain of nearly $60,000 from those additional shares (for a grand total financial gain of about $200,000 for the average case in our sample) or an additional $450,000 gain (and a total of nearly $1.3 million) for just those with a negative CAR. These

[4] We considered the impact of potential outliers on this calculation. Winsorizing at the 1st and 99th percentile slightly lowered the mean CAR to –12.9%, leaving the overall value impact to the typical CEO essentially unchanged. Winsorizing also had no meaningful impact on the CAR for the entire sample.

TABLE 1A
Descriptive Statistics and Correlations for Full Dataset

		Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Negative Press Releases	1.05	1.76													
2.	Total Press Releases in Period	4.45	6.18	0.51												
3.	Firm Size	8.24	1.66	0.14	0.38											
4.	Return on Assets	4.99	7.52	−0.05	−0.03	−0.07										
5.	Board Independence	0.40	0.28	0.03	0.06	0.11	0.01									
6.	Managerial Discretion	1.17	2.57	0.12	0.06	−0.19	0.12	0.11								
7.	CEO Duality	0.54	0.50	0.07	0.06	0.12	0.03	−0.21	−0.04							
8.	CEO Ownership	0.40	0.60	−0.06	−0.14	−0.25	−0.09	−0.27	−0.15	0.05						
9.	CEO Age	55.02	6.42	0.04	0.00	0.17	0.01	−0.20	−0.07	0.26	0.10					
10.	CEO Gender	0.03	0.18	−0.06	−0.06	−0.05	0.04	0.05	−0.03	−0.05	−0.03	−0.05				
11.	CEO Tenure	7.57	5.98	0.02	−0.07	−0.10	0.01	−0.62	−0.06	0.32	0.35	0.34	−0.05			
12.	CEO Total Compensation	8.43	0.85	0.13	0.29	0.67	0.02	0.06	−0.03	0.12	−0.25	0.12	−0.03	−0.07		
13.	CEO Underpayment	−0.10	0.61	0.03	0.03	−0.03	0.05	0.08	0.06	−0.11	−0.01	−0.06	0.05	−0.09	−0.32	
14.	Option Grant at End of Period	0.16	0.36	0.02	0.01	0.00	−0.01	−0.02	−0.01	0.02	−0.01	0.02	0.00	0.00	0.02	0.00

Notes: $n = 11{,}116$; all correlations greater than or equal to $|0.01|$ are significant at $p < 0.05$.

TABLE 1B
Descriptive Statistics and Correlations for Preoption Grant Periods Only

		Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1.	CAR (–30.0)	−1.29	12.76													
2.	Firm Size	8.26	1.66	−0.05												
3.	Return on Assets	4.84	7.56	0.04	−0.06											
4.	Board Independence	0.39	0.28	−0.02	0.12	0.00										
5.	Managerial Discretion	1.10	2.61	0.07	−0.20	0.09	0.13									
6.	CEO Duality	0.56	0.50	0.02	0.15	0.03	−0.22	−0.06								
7.	CEO Ownership	0.40	0.59	−0.02	−0.26	−0.09	−0.28	−0.14	0.07							
8.	CEO Age	55.26	6.41	0.00	0.17	0.02	−0.20	−0.09	0.29	0.13						
9.	CEO Gender	0.03	0.18	−0.02	−0.05	0.04	0.05	−0.03	−0.06	−0.04	−0.05					
10.	CEO Tenure	7.59	5.93	0.03	−0.10	0.00	−0.64	−0.08	0.33	0.39	0.38	−0.06				
11.	CEO Total Compensation	8.46	0.84	0.02	0.69	0.04	0.04	−0.06	0.15	−0.24	0.15	−0.02	−0.06			
12.	CEO Underpayment	−0.10	0.60	−0.01	−0.02	0.04	0.07	0.06	−0.10	0.00	−0.05	0.03	−0.08	−0.31		
13.	Negative Press Releases, Rest of Year	7.36	10.03	−0.02	0.18	−0.05	0.08	0.16	0.11	−0.10	0.03	−0.08	−0.01	0.18	0.04	
14.	Negative Press Releases, Period of Option Grant	1.14	1.72	−0.05	0.11	−0.07	0.05	0.12	0.05	−0.07	0.04	−0.06	0.01	0.11	0.04	0.68

Notes: $n = 1{,}753$; all correlations greater than or equal to $|0.01|$ are significant at $p < 0.05$.

TABLE 2
Cumulative Abnormal Returns Prior to CEO Option Grants

Trading Days	Mean CAR (%)	Patell *Z*	*p*-value
(–45.0)	−2.24***	−5.35	0.000
(–35.0)	−1.65***	−4.29	0.000
(–30.0)	−1.31***	−3.74	0.000
(–25.0)	−0.88**	−2.84	0.002
(–20.0)	−0.61*	−2.04	0.021
(–15.0)	−0.29	−1.26	0.104

Note: $n = 1{,}753$.
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

additional gains to the CEO are fully recognized by the firm as an expense when the options are exercised (Devos et al., 2015).

Hypothesis 2 predicted that firms release a greater number of negative press releases or releases with lower overall affective tone in the period prior to a grant. Our results for the first test of this hypothesis are shown in Table 3. Model 1 includes controls, while Model 2 adds a dummy variable for periods when a grant occurs. As predicted, this variable is a positive predictor of the count of negative releases ($\beta = 0.14$, $p < 0.001$), supporting Hypothesis 2. Firms, on average, issue a single negative release in a typical six-week period. This increases to 1.14, on average, in the six-week period just prior to an option grant. As we noted, not all CEOs engage in these activities. Thus, it is likely that some CEOs have no change in the rate of negative news releases, while others that engage in these tactics see larger shifts. We also considered whether CEOs released more information in the period before a grant, and found they did not (mean number of releases in period leading up to grant = 4.64, all other periods = 4.41, n.s.). Thus, it seems some releases are just more negative in the pregrant period. In sum, we find support for Hypothesis 2.

As a supplemental analysis, we reran this analysis using the count of positive and neutral press releases.[5] Models 4 and 5 show that neither the count of positive press releases ($\beta = 0.03$, n.s.) nor the count of neutral press releases ($\beta = 0.03$, n.s.) change in the option grant period. This provides further evidence that negative press releases are driving our observed outcome.

We also tested Hypothesis 2 using the continuous overall affective tone measure. We predict that the overall affective tone of press releases in the period leading up to an option grant will be lower than in other periods. The results of our analysis, shown in Model 3 of Table 3, show a negative and statistically significant relationship between the period dummy and the overall affective tone of overall press releases issued during the period ($\beta = –0.02$, $p < 0.001$). This represents a 2% drop in overall affective tone in the period leading up to the grant, compared to other periods in the year. Overall, this provides further support for Hypothesis 2.

Hypothesis 3 theorized that these negative news releases are predictive of the decline in stock price seen in our sample. That is, it is conceivable that firms might see a decline in share price prior to an option grant for reasons unrelated to the negative releases we see in this period. Our results for this test are shown in Table 4. Again, Model 1 includes controls, while Model 2 adds our variable of interest, the number of negative releases. As predicted, this variable was negatively related to the CAR in the 30 days leading up to an option grant ($\beta = –0.49$, $p < 0.05$). Each additional negative release is related to approximately 0.5% negative abnormal return.

To further evaluate these findings, we ran a supplemental analysis examining the potential influence of both positive and neutral releases during the period. In Table 4, Model 4 predicts the abnormal return during the period with all three types of releases simultaneously—negative ($\beta = –0.40$, $p < 0.05$), neutral ($\beta = –0.01$, n.s.), and positive ($\beta = –0.10$, n.s.). These results show that negative releases have a statistically significant relationship with the CAR during the period while neutral and positive releases have no effect, providing further support for Hypothesis 3, while also highlighting a nonlinear relationship. That is, increasing counts of negative releases seem to matter, while changes in neutral or positive releases have no impact.

[5] Positive press releases were assessed as those being in the top quartile of tenor, and neutral press releases were those in the middle 50th percentile of press release tenor.

TABLE 3
Generalized Estimating Equations Models Predicting the Count of Negative Press Releases and Overall Affective Tone

	Main Models			Supplementals	
	Model 1	Model 2	Model 3	Model 4	Model 5
Independent Variables	**Negative Press Releases**	**Negative Press Releases**	**Overall Affective Tone**	**Positive Press Releases**	**Neutral Press Releases**
Total Press Releases in Period	0.14***	0.14***	0.00	0.14***	0.18***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm Size	−0.11***	−0.11***	0.01***	0.06***	0.01
	(0.02)	(0.02)	(0.00)	(0.02)	(0.02)
Return on Assets	−0.01**	−0.01**	0.00***	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Board Independence	0.34***	0.35***	−0.04***	−0.12	−0.23**
	(0.09)	(0.09)	(0.01)	(0.09)	(0.08)
Managerial Discretion	0.03***	0.03***	−0.00***	−0.02*	−0.01
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
CEO Duality	0.14**	0.14**	−0.00	0.15***	−0.07†
	(0.05)	(0.05)	(0.00)	(0.05)	(0.04)
CEO Ownership	−0.01	−0.01	−0.00	−0.02	−0.03
	(0.04)	(0.04)	(0.00)	(0.04)	(0.04)
CEO Age	0.01	0.00	−0.00***	−0.00	−0.01**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
CEO Gender	−0.31*	−0.31*	0.01	0.07	−0.06
	(0.13)	(0.13)	(0.01)	(0.12)	(0.11)
CEO Tenure	0.02***	0.02***	−0.00***	−0.01**	−0.00
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)
CEO Total Compensation	0.05	0.05	0.01**	−0.02	0.13***
	(0.03)	(0.03)	(0.00)	(0.03)	(0.03)
CEO Underpayment	0.07*	0.07*	−0.00	−0.02	0.02
	(0.03)	(0.03)	(0.00)	(0.03)	(0.03)
Option Grant at End of Period (Hypothesis 2)		**0.14*** **	**–0.02*** **	0.03	0.03
		(0.03)	**(0.00)**	(0.03)	(0.03)
Constant	−0.82**	−0.82**	0.77***	−0.84**	−1.05***
	(0.30)	(0.30)	(0.03)	(0.31)	(0.26)
Observations	11,116	11,116	9,114	11,116	11,116
Firms	627	627	600	627	627
Wald χ^2	4167	4182	504.9	4652	8060

Notes: Standard errors in parentheses. Calendar year and month dummies included in all models. In Model 3, overall affective tone cannot be calculated in the periods without press releases being issued by the firm and, thus, are recorded as missing values for the dependent variable.

† $p < .10$
* $p < .05$
** $p < .01$
*** $p < .001$

Hypothesis 3 was also tested using overall affective tone of press releases as a predictor of the CAR during the period, as shown in Model 3 of Table 4. While the results of this test are directionally consistent (affective tone is related to CAR, thus a negative tone would reduce the stock price), the strength of the relationship falls just below typical thresholds of statistical significance ($\beta = 3.77$, $p = 0.12$). Based on the results seen with our first test of Hypothesis 3, we performed a supplemental spline analysis. We centered our affective tone variable at 0 by subtracting the mean. We then set the variable *low tenor* to its value if negative (below the mean), or 0 otherwise, and the variable *high tenor* to its value if positive, or 0 otherwise. As shown in Table 4, Model 5, the low tenor variable is significant ($\beta = –9.52$, $p < 0.05$),

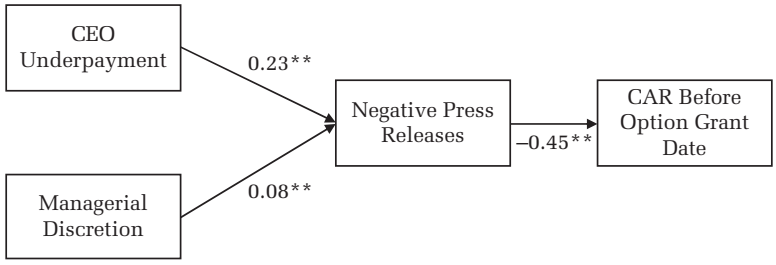
TABLE 4
Models Predicting Cumulative Abnormal Return Six Weeks Prior to Option Grant

	Main Models			Supplementals	
Independent Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Firm Size	−0.67*	−0.69*	−1.00**	−0.69*	−1.02**
	(0.31)	(0.31)	(0.33)	(0.31)	(0.33)
Return on Assets	0.06	0.06	0.06	0.06	0.05
	(0.04)	(0.04)	(0.05)	(0.04)	(0.05)
Board Independence	0.75	0.80	1.33	0.83	1.58
	(1.38)	(1.39)	(1.52)	(1.39)	(1.52)
Managerial Discretion	0.15	0.15	0.17	0.16	0.17
	(0.12)	(0.12)	(0.13)	(0.12)	(0.13)
CEO Duality	0.61	0.57	0.30	0.62	0.30
	(0.61)	(0.61)	(0.70)	(0.61)	(0.70)
CEO Ownership	−0.61	−0.63	−0.65	−0.62	−0.66
	(0.72)	(0.72)	(0.78)	(0.72)	(0.78)
CEO Age	−0.06	−0.06	−0.01	−0.05	−0.01
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
CEO Gender	−1.01	−1.03	−0.67	−1.07	−0.59
	(1.42)	(1.41)	(1.91)	(1.41)	(1.92)
CEO Tenure	0.12†	0.13†	0.13	0.13†	0.14+
	(0.07)	(0.07)	(0.08)	(0.07)	(0.08)
CEO Total Compensation	1.45*	1.47*	2.18**	1.49*	2.17**
	(0.64)	(0.63)	(0.67)	(0.64)	(0.68)
CEO Underpayment	0.38	0.40	0.19	0.42	0.20
	(0.55)	(0.54)	(0.58)	(0.54)	(0.59)
Negative Press Releases, Rest of Year	−0.02	0.04			
	(0.03)	(0.04)			
Total Press Releases, Rest of Year				0.01	
				(0.01)	
Negative Press Releases, Option Grant Period (Hypothesis 3)		**–0.49***		**–0.40***	
		(0.21)		**(0.16)**	
Overall Affective Tone, Option Grant Period (Hypothesis 3)			**3.77**		
			(2.45)		
Positive Press Releases, Option Grant Period				−0.10	
				(0.16)	
Neutral Press Releases, Option Grant Period				−0.01	
				(0.06)	
Low Tenor, Option Grant Period					−9.52*
					(4.11)
High Tenor, Option Grant Period					−3.56
					(4.88)
Constant	−11.56*	−11.76*	−21.48*	−11.93*	−17.74**
	(4.67)	(4.68)	(5.63)	(4.72)	(5.38)
Observations	1,753	1,753	1,458	1,753	1,458
R-squared	0.076	0.079	0.091	0.079	0.092

Notes: Robust standard errors in parentheses. Calendar year and month dummies included in all models. In Models 3 and 5, overall affective tone cannot be calculated in the periods without press releases being issued by the firm and, thus, are recorded as missing values for the independent variable.

† $p < .10$
* $p < .05$
** $p < .01$

FIGURE 1
Results of Structural Equation Modeling Assessing the Indirect Effects on Cumulative Abnormal Returns



Notes: n = 1,753. Standardized root mean squared residual = 0.015. All controls from other models were included as predictors of both the mediator and the dependent variable. Standard errors were clustered by firm.

Indirect effect of CEO underpayment on CAR before grant date = –0.10†.

Indirect effect of managerial discretion on CAR before grant date = –0.04*.

$^{\dagger}p < .10$

* $p < .05$

** $p < .01$

while the high tenor variable is not significant. In practical terms, press release tenor one standard deviation below the mean in the period before an option grant is related to a CAR that is 1.33 percentage points lower. While the relationships are somewhat more complicated than hypothesized, these findings show a strong link between the negative press release activity and the preoption grant CAR, adding further support for our theory and for Hypothesis 3.

In Hypotheses 4 and 5, we argued that CEO underpayment (Hypothesis 4) and managerial discretion (Hypothesis 5) would be related to a larger quantity of negative press releases and larger negative CARs in the period before an option grant. We tested these hypotheses in the same structural equation model, which allowed us to assess direct and indirect effects. Our model used all control variables as predictors of all endogenous variables—that is, we used the same controls as in our prior analyses in all stages of the model (not shown, but available on request). We also employed robust standard errors clustered by firm. Figure 1 graphically depicts our model and results.[6]

As shown in Figure 1, CEO underpayment and managerial discretion each have a positive and statistically significant effect on the quantity of negative releases issued in the period leading up to a grant (β = 0.23, $p < 0.01$; β = 0.08, $p < 0.01$, respectively). In addition, the count of negative releases has a negative and statically significant effect on the CAR in the period leading up to the grant date (β = –0.45, $p < 0.01$). From these results, we used the product method (employed using the *estat teffects* command in Stata 15.1) to calculate the indirect effects and their statistical significance. The results show that underpayment has a marginally negative indirect effect on the CARs through higher numbers of negative releases (indirect effect = –0.10, $p < 0.10$). This provides marginal support for Hypothesis 4. The results also show that discretion has a negative and statistically significant indirect effect on the CAR through more negative releases in the period leading up to option grant dates (indirect effect = –0.04, $p < 0.05$). This supports Hypothesis 5.

SUPPLEMENTAL ANALYSES

We performed several supplemental analyses to explore the robustness of our results.

Assessing the Theory Beyond the CEO

While the CEO has ultimate authority over the release of information, the actual act of crafting and issuing press releases may be delegated to others, who may also be receiving options, creating the possibility that non-CEO executives are driving our findings. To test this prospect, we identified option

[6] As an additional analysis, we tested Hypotheses 4 and 5 using the continuous measure of affect. Given our lack of support for Hypothesis 3 with this measure, it is not surprising that we did not find a mediating effect for underpayment or managerial discretion (β = –0.02, n.s.; β = –0.02, n.s., respectively). When we use a splined version of overall affective tone, as done in Model 5 of Table 4, we do see a statistically significant negative indirect effect of managerial discretion on CAR through Negative Affective Tone (β = –0.03, $p < 0.10$).

grant dates reported in Thompson-Reuters for all other executives, excluding the CEO (a total of 5,503 unique firm-grant dates). We then removed grants that occurred on the same date as CEO grants, leaving a final sample of 2,215 non-CEO option grant dates. We next ran an event study identical to one used to test Hypothesis 1, with results showing a negligible change leading up to non-CEO grant dates (e.g., –0.27%, $p = 0.232$ for the 45 trading days before a non-CEO option grant). Moreover, for the –15 and –20-day periods just prior to non-CEO grants, there is a small *positive* CAR (+0.17%, $p < 0.10$ and +0.25%, $p < 0.05$ respectively). In short, other top executives do not seem to enjoy the same reduction in option strike price as the CEO. This provides additional support for the argument that manipulation leading up to CEO option grant dates is likely instigated by CEOs, rather than collectively or individually by other employees.

Assessing Sensitivity of Results to Bias and Omitted Variables

In our next analysis, we wanted to assess the sensitivity of our inferences in Hypotheses 2 and 3—our primary hypotheses regarding the release of negative press releases and their effect on stock prices—to bias and omitted variables (Frank, 2000). We ran two tests, used in recent management studies (e.g., Busenbark, Lange, & Certo, 2017; Hubbard, Christensen, & Graffin, 2017), to assess the amount of bias—both within our sample and considering omitted variables—that would be required to overturn our results (Frank, 2000).

For Hypothesis 2, which predicted that firms would release a larger quantity of negative press releases in the period before an option grant, we calculated the threshold for percent bias to invalidate the inference (Frank, 2000) using two-tailed tests. The results show that to invalidate our inferences about Hypothesis 2, 46% of the sample would have to be biased. That is, 5,127 cases would have to be replaced with cases for which the effect of the event window on the quantity of negative press releases was 0 to invalidate our findings.

Second, we calculated the impact that an omitted variable would have to have to invalidate our inferences using the impact threshold of a confounding variable (ITCV). The analysis for Hypothesis 2 suggests an omitted variable would need to be correlated with the event window at 0.12, and with the release of negative press releases at 0.12, to invalidate the inference. To put this in perspective, a correlated omitted variable would have to have an impact twice as strong as our strongest observed covariate: the total count of press releases issued during the period. Using the continuous measure of affect for Hypothesis 2, almost 65% of our cases would have to be replaced with cases for which there was zero effect, or 5,921 cases total. Further, an omitted variable would have to be correlated with the event window at 0.18 and with overall affective tone at –0.18 (signs interchangeable). This corresponds to an ITCV of –0.03 (–0.18 × 0.18), which is over 20 times the strength of the largest observed impact of the CEO's total pay. Overall, this demonstrates the robustness of these results.

We repeated these tests for Hypothesis 3. The results show that 19%, or 330 of our 1,753 observations, would have to be replaced by observations having no relationship between the issuance of negative press releases and the CARs of the period. Further, an omitted variable would have to be correlated at 0.10 with the count of negative press releases, and at –0.10 with the CAR of the period (signs interchangeable). The impact of a correlated omitted variable must be –0.01 (–0.10 × 0.10), 1.69 times stronger than our strongest negative observed impact, to invalidate this inference. Again, this indicates that these potential biases are not likely to be affecting our inferences.

Mandatory Versus Discretionary Press Releases

Next, we examined the types of press releases used to manipulate stock option values. We wanted to specifically consider whether CEOs use mandatory or discretionary releases to influence stock prices—where each release was categorized based on its topic. Given the large volume of releases—49,436 were used in our analyses—manual coding was not feasible. Instead, we used machine learning to classify releases as either mandatory or discretionary (Stewart, 2015) using the scikit-learn package in Python 3. We extracted features of each class of release based on the frequency of words within it. We applied a naïve Bayes classifier; each feature was independent and contributed to the likelihood that a document was within a class. This process was started by a primary rater, an author in this study, who read and then coded 75 randomly selected releases to assess whether they were mandatory or discretionary. Coding was informed simply by the latitude a rater believed a firm to have with regard to releasing the information. Material events, earnings, lawsuits, and related items are generally mandatory, while product marketing announcements, community relations activities, and other informational releases were viewed as discretionary. In total, 37 of the releases were coded as mandatory and 38 were

discretionary. This test sample was then used to train the machine learning algorithm. To assess the machine's ability to categorize releases, a separate randomly selected sample of 75 releases was coded by the computer, the original rater, and two additional expert coders. The computer and all three expert raters agreed on the coding for 81% of these releases (Cohen's κ of 0.80), representing a strong level of agreement. The computer then coded the entire corpus of releases, resulting in 47.7% that were mandatory and 52.3% that were discretionary. This shows that neither mandatory nor discretionary releases dominate the discourse coming from firms.

After our categorization of the press releases, we assessed basic descriptive statistics for each type. First, there were no differences in the number of discretionary press releases prior to a grant versus the rest of the year (mean leading up to grant = 2.42, mean other times = 2.48, n.s.). Further, we did not observe a statistically significant difference in mean affective tenor of discretionary releases (mean leading up to grant = 0.87, mean other times = 0.87, n.s.). Second, we examined the mandatory press releases and found that they were more frequently seen in the period leading up to the option grant date (mean leading up to grant = 2.22, mean other times = 1.92, $p < 0.01$). Further, these releases were generally more negative in the period leading up to a grant compared with other periods (mean leading up to grant = 0.73, other times = 0.75, $p < 0.01$). Overall, this shows that discretionary releases are relatively consistent in terms of frequency and tenor; mandatory press releases, however, are typically more negative and frequent in the period leading up to the option grant date. Table 5 summarizes the findings of this analysis—broken down by overall results, and then split out by discretionary and mandatory.

Next, we reran the analyses for our hypothesized relationships using the press releases split out by discretionary or mandatory. Recall that in our primary analysis for Hypothesis 2, we found that there is a positive effect of the event window on the count of negative releases issued (e.g., Model 2 in Table 3). We replicated this analysis using negative discretionary and negative mandatory releases as the dependent variables. The results show no statistically significant effect of the event window on discretionary releases ($\beta = -0.08$, n.s.). There was, however, a positive and statistically significant relationship between the event window and the count of negative mandatory releases ($\beta = 0.22$, $p < 0.01$). Using the measure of overall affective tone, we found a similar pattern: no statistically significant effect of period on overall affective tone of the discretionary releases ($\beta = 0.00$, n.s.), but a statistically significant effect on the overall affective tone of mandatory releases ($\beta = -0.02$, $p < 0.01$). These analyses suggest that firms release a larger quantity of negative releases about substantive events in the period leading up to a CEO's option grant date.

Second, for Hypothesis 3, recall that the results of our primary analysis showed that the count of negative press releases had a negative effect on the CAR in the period leading up to the option grant date (e.g., Model 2 of Table 4). As before, we replicated this analysis, but substituted the count of negative discretionary and negative mandatory press releases as the independent variables in our analyses. These results show that there is no effect of negative discretionary press releases on the CAR in the period leading up to a CEO's option grant date ($\beta = -0.22$, n.s.). There is, however, a negative effect of the count of negative, mandatory press releases on the CAR in that period ($\beta = -0.52$, $p < 0.05$). As a further test, we entered the count of both negative discretionary and negative mandatory releases in the same regression predicting the CAR in the period leading up to the CEO's option grant date.[7] As shown in the other analyses, when entered together, negative discretionary press releases were not related to the CARs ($\beta = -0.26$, n.s.)[8], while negative mandatory press releases had a significant negative effect ($\beta = -0.54$, $p < 0.05$). These results show that while negative discretionary press releases do not influence the stock price in the period leading up to a CEO's option grant date, negative mandatory press releases have an impact. In total, these results collectively suggest that mandatory releases seem to be driving our findings for Hypotheses 2 and 3.

Finally, we considered whether the indirect effects from Hypotheses 4 and 5 continued to be significant when negative releases were disaggregated into discretionary and mandatory. We reran our analysis using the negative press releases split out. Overall, the analysis still shows that underpayment (indirect effect = –0.11, $p < 0.10$) and managerial discretion (indirect effect = –0.04, $p < 0.10$) have a marginally statistically significant negative effect on CAR through these releases. Examining the

[7] Since a press release has to be either discretionary or mandatory, there is no overlap between these variables.

[8] The p-value for this effect is $p = 0.177$, and, while not statistically significant, approaches marginal significance in this robust analysis. In our analysis of the indirect effects, on the other hand, this relationship meets the criteria for marginal statistical significance ($p < 0.10$).

TABLE 5
Summary of Results Broken Down by Press Release Type

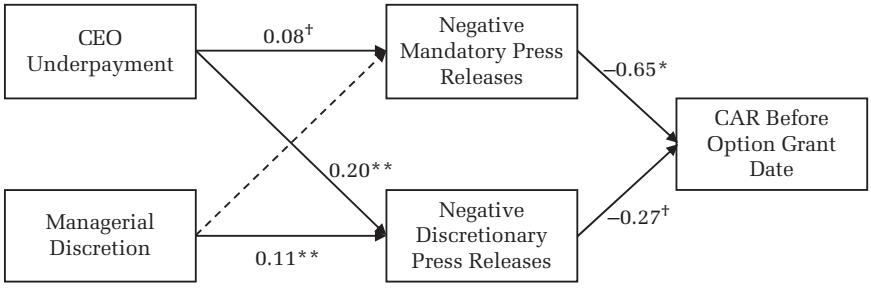
	Press Release Type		
	Overall	**Discretionary**	**Mandatory**
Frequency of press releases in period leading up to CEO option grant date, compared to other times of the year	No difference	No difference	**More frequent**
Overall affective tone of press releases by type leading up to CEO option grant date, compared to other times of the year	**More negative**	No difference	**More negative**
Hypothesis 2: Predicting negative press releases (by type) using in-grant-period dummy	**Positive effect**	No effect	**Positive effect**
Hypothesis 3: Influence of negative press releases (overall, and by type) on the CAR of the stock in the period leading up to the option grant date	**Negative effect**	No effect	**Negative effect**
Hypothesis 4: Indirect effect of CEO underpayment on CAR in the period leading up to the CEO option grant date	**Negative indirect effect**	**Negative indirect effect**	**Negative indirect effect**
Hypothesis 5: Indirect effect of managerial discretion on CAR in the period leading up to the CEO option grant date	**Negative indirect effect**	No indirect effect	**Negative indirect effect**

coefficients and statistical significance leads to several conclusions. First, underpayment leads CEOs to release both more negative mandatory ($\beta = 0.08$, $p < 0.10$) and more negative discretionary releases ($\beta = 0.20$, $p < 0.01$), while managerial discretion only leads executives to release more discretionary press releases in the period leading up to a CEO's option grant date ($\beta = 0.11$, $p < 0.01$). This shows that underpayment pushes executives to use more mechanisms to try to correct their pay by influencing the strike price of their options. Second, both types of releases have an influence on the CAR for that period, although the negative discretionary releases have a weaker effect. This suggests that, for CEOs to influence firm stock price, they need to use meaningful events, not just release negative immaterial news. We address these results in greater detail in the discussion section below.

Stock Grants

Over the last decade, firms have begun issuing more stock grants while reducing reliance on option

FIGURE 2
Results of Structural Equation Modeling Examining the Effect of Underpayment and Managerial Discretion on Cumulative Abnormal Returns as Mediated Through Negative Press Releases



Notes: n = 1,753. Standardized root mean squared residual = 0.037. All controls from other models were included as predictors of both the mediators and the dependent variable. Standard errors were clustered by firm.

Indirect effect of CEO underpayment on CAR before grant date = –0.11†.

Indirect effect of managerial discretion on CAR before grant date = –0.04†.

† $p < .10$

* $p < .05$

** $p < .01$

grants (e.g., Irving, Landsman, & Lindsey, 2011). For example, in 2006, options and stock grants made up nearly equal proportions of average CEO compensation for Execucomp firms (19% vs. 21% of total pay, respectively). In 2017 those values shifted to 10% and 35%, respectively. While these shifts are significant, options remain an important part of the overall CEO compensation, with 48.4% of S&P 500 firms awarding options to their CEOs in 2015 (Equilar, 2016). However, because of this shift, we also considered whether there was a similar decline in share price prior to stock grants. We repeated our analysis for Hypothesis 1 using a sample of 3,286 stock grants from the same time period as our primary sample. The CAR for stock grants was somewhat smaller than we found for options, but still significant (e.g., –1.05% at 45 days, $p < 0.001$, –0.62% at 35 days, $p < 0.01$, and –0.31% at 30 days, $p < 0.10$). This makes sense, as the motivation is somewhat smaller. While a negative CAR before an option grant affords CEOs two sources of gains—via a lower strike price and additional shares—a negative CAR before a stock grant only allows a gain via the additional shares granted (the smaller of the two sources of gain). In short, the effect is likely smaller because the incentive is smaller as well.

DISCUSSION

Our study provides several relevant findings for the strategic management literature, executives, and regulators. First, our results suggest that there is a dip in stock price leading up to the option grant dates for CEOs, even after the implementation of SOX. This stock price decline is material, as much as 2.24%, depending on the window of analysis. Second, we provide evidence that firms tend to release a larger quantity of negative information in the period leading up to option grants. This provides one potential mechanism—that is, the timing and tenor of press releases—that CEOs use for their own personal benefit.

Third, we find a link between the negative press releases issued prior to an option grant date and a firm's stock price. This finding suggests that the decision to release negative news in the period before an option grant leads to a *negative*—and *favorable to the CEO*—change in stock price. We also find support for our hypotheses that CEO underpayment and managerial discretion each increase the usage of this mechanism to depress a firm's stock price before an option grant which suggests that certain CEOs are more likely to engage in this behavior.

These findings offer a number of theoretical contributions. First, we offer new insights on agency theory. Based on decades of research, the granting of stock options is a common recommendation of agency theory (Hall, 2000) to help indirectly mitigate the issues associated with information asymmetry by aligning the long-term interests of CEOs and shareholders. We theorize and find that, ironically, these option grants allow CEOs to leverage their informational advantage for personal gain. That is, while options may align interests of CEOs and shareholders in the long term, in the short window before the options are granted the interests of CEOs and shareholders diverge. Accordingly, because options are outcome based and do not directly eliminate information asymmetry, CEOs are still free to use their informational control to act in their own interests. Our results suggest that many CEOs take advantage of this opportunity.

We also theorize and find that CEOs use corporate information releases for personal gain. This extends current impression management literature, which has shown how informational releases can influence perceptions of firm-level issues such as acquisitions (Graffin et al., 2016), CEO succession announcements (Graffin et al., 2011), and product recalls (Zavyalova et al., 2012). While most impression management tactics are meant to create positive sentiment, we provide evidence that impression management is being used to create negative impressions among stakeholders. This highlights avenues for future research into theories about the "dark side" of impression management.

Third, our findings suggest that there is an important, yet understudied, source of control that CEOs have at their disposal for personal gain. Specifically, because the practices emanating from agency theory generally focus on outcome-based contracts, a root issue driving the agency problems—information asymmetry—remains. This information asymmetry allows CEOs to have ultimate decision authority in determining the timing and content of various informational releases from the firm. Our study provides evidence that CEOs can leverage this information asymmetry to shape perceptions among shareholders in a self-serving manner (though it probably affects others, including directors, the media, and the public at large, too). This suggests new research directions that may consider how CEOs use this advantage, and how it can be mitigated.

Our supplemental analyses also offer several important results that add nuance to our theoretical contributions. We do not find a decrease in stock price leading up to option grants for non-CEO employees. This provides support for the notion that manipulation leading up to CEO option grant dates is

likely instigated by CEOs, rather than collectively or individually by other employees. Finally, we see a smaller negative CAR in the period before stock grants than we do with options, highlighting that this tactic remains an issue even as options become a somewhat smaller, yet significant, portion of overall CEO pay. This finding also highlights the motivational aspect in that options provide two pathways for enrichment (more shares, and the gap between strike price and exercise price), while stock grants only provide one (more shares granted).

Having assessed our primary hypotheses and baseline supplemental analyses, we considered the specific press releases in more detail. At a high level, these results show that press releases that contain information required release per SEC regulations, which we label "mandatory," play a major role in understanding this behavior, while discretionary releases are less important. Investors probably view discretionary releases as public relations or impression management tactics that are obvious attempts to manipulate, rather than inform about financially relevant matters. Thus, investors may simply ignore these releases. Mandatory releases, on the other hand, which pertain to sales, earnings, acquisitions, lawsuits, and other material events, are clearly more germane to shareholders. Thus, the tone of these releases offers more consequential cues that influence investor perceptions. As a result, subtle manipulation of these mandatory press releases provides CEOs a stronger opportunity to affect the stock price prior to an option grant. Put differently, even though the SEC mandates the release of certain information, CEOs can affect the tone and tenor of that information to their advantage.

In terms of how widely used this tactic is, we found that approximately 55% of CEOs saw a negative abnormal return in the 45-day trading period before an option grant, and so benefited from the stock price decline. Further, 11% of CEOs had at least two grants where the stock saw an abnormal decline of more than 2% in the 30 trading days prior to the grant and more than 2% rebound in the 30 days after. It is notable that other scholars have found similarly substantial rates of potentially self-serving behavior using information releases in other settings. Prior studies have found that 20% of firms engaged in issuing "strategic noise" around the time a new CEO was hired (Graffin et al., 2011), 26% used "impression offsetting" during acquisitions (Graffin et al., 2016), and 31% used outside industry comparisons as a form of impression management when justifying executive compensation (Porac et al., 1999).

Practical Implications

Our results suggest that CEOs may be manipulating shareholders and markets to alter their firm's stock price for their own benefit, and that the timing and tenor of press releases is one mechanism that executives can use to do so. While this might seem innocuous, the manipulation of a firm's stock price for personal benefit is significant as it affects shareholders who happen to sell in the period and results in higher expenses for the firm when the options are exercised (Devos et al., 2015). Indeed, lawmakers included specific language in SOX to reduce this sort of manipulation, yet we find it continues.

CEOs' ability to control the release of information is counter to the intention of SOX. Indeed, around option grant dates CEOs might be more apt to withhold positive information about the firm, while preferring to release negative information—regardless of the actual materiality of that information. While firms are required to disclose numerous events, there is still substantial subjectivity to assessing the materiality of the events and exactly when that information should be released, and especially discretion around the tenor of the release—which provides leeway for manipulation of the stock price.

In elaborating this last point, our results suggest that while regulations require disclosure of material information in a timely manner, they do not provide guidance on the tenor of these releases. This creates an opportunity for CEOs. While general practice is that CEOs will choose to cast descriptions about their firms in the most positive (or least negative) light possible, this logic may shift just prior to an option grant. That is, during this time, CEOs may attempt to manipulate the tenor for personal gain. Executives are thus able to meet the legal requirements of disclosure while still manipulating shareholders and markets in a self-serving manner.

To combat this, boards or regulators may wish to consider several preventative actions. The simplest, and perhaps most effective, approach would be to issue smaller option grants more frequently. That is, instead of offering one large grant per year, a practice undertaken by most firms, boards could simply issue smaller grants quarterly, monthly, or even daily. To that end, when we analyzed grants issued by firms following this practice (e.g., monthly, bimonthly, or quarterly grants), we saw no evidence of negative abnormal returns prior to grant dates. Alternatively, boards might consider increasing the use of stock grants, a practice that, as we noted above, has increased in the last decade. While there is still a negative abnormal return

prior to these grants, it is somewhat smaller than is seen with option grants. Perhaps the ideal scenario is the issuance of stock grants on a quarterly or monthly basis, which would reduce both the incentive and the ability to manipulate the grants.

While issuing options or stock more frequently will likely quell the use of information to depress strike prices, CEOs could still use this information advantage for other purposes, some instances of which may also be misaligned with shareholder interests. For example, a CEO might suppress or tone down negative information or oversell positive information just prior to their own contract negotiations or succession, to being acquired [e.g., Yahoo delaying release about the hacking of personal information while negotiating sale to Verizon (Fildes, Murgia, & Bradshaw, 2016)], to announcing a new product, or even to a planned sale of shares. To combat this, boards and regulators may consider reviewing the information releases issued by the firm and, perhaps, go as far as auditing information releases to be sure they reasonably reflect the underlying news rather than serve the narrow interests of the CEO. While such auditing might appear somewhat onerous, especially if mandated by regulators, it is not unprecedented. For example, oversight of communications was included as part of a recent settlement between Tesla and the Securities and Exchange Commission over Elon Musk's Twitter posts about potentially taking the firm private (Securities and Exchange Commission, 2018).

More fundamentally, scholars and practitioners should remain mindful of the persistence of the information asymmetry driving these and other agency issues. While creating outcome-based alignment through contracting mechanisms indirectly addresses some of these concerns, the informational advantage remains. Recent trends in governance, such as reducing the number of inside directors, may have the unintended consequence of amplifying the information asymmetry between the CEO and the board. To combat this, outside directors should ensure that there are information pathways connecting them to various executives and even lower-level managers to ensure the board develops a more accurate view of the firm. While recent trends have made it such that the CEO is often the only inside director on the board, it may be beneficial to maintain some insider presence on the board beyond the CEO.

Limitations and Future Research Directions

This study has a few limitations that may provide opportunities for future research. First, this study only examines CEOs in the United States. There might be alternative governance controls in other countries that are more—or less—effective in reducing this practice. Future studies could extend our analyses to consider other countries with different regulatory environments and governance practices.

Similarly, our study was focused on large, publicly traded firms where the challenges of information asymmetry are likely to be accentuated. The sheer size and complexity of the firms in question create large barriers for those attempting to monitor the firm. Future research might further consider how size and complexity affect the theoretical links we have highlighted here.

Another limitation of this study is that we do not assess whether stock price depression is a conscious behavior. While we provide evidence that the stock price is being depressed and that the timing and tenor of press releases may be one mechanism for accomplishing this, we do not provide direct evidence as to whether this is something that executives choose to do, or whether it is a natural tendency. Laboratory studies could assess this issue. Further, future studies could look at the diffusion of the practice—much like the studies of poison pills (Davis, 1991) and golden parachutes (Fiss, Kennedy, & Davis, 2012)—to see whether this tactic is being spread through board interlocks, geography, or other types of networks. It would be especially interesting to see whether, and how, adoption of these tactics spread following implementation of the SOX regulations that brought an end to the prior practice of backdating. It may be that CEOs or firms inclined to take advantage of one mechanism of self-enrichment might spur the adoption of newer tactics as well. Further, network connections via boards, to firms that engaged in backdating, might explain how CEOs developed new tactics to achieve the same end goal (Westphal, Seidel, & Stewart, 2001). On the other hand, the subtle nature of this approach might simply arise in the population independently, rather than through active planning and diffusion.

We also do not examine whether the tenor of these more negative information releases makes its way into a firm's press coverage. While it would be consistent with our theorizing that media reports would pick up on this more negative tenor and that, in turn, a firm's media coverage becomes more negative during the period leading up to a stock grant, we did not examine this outcome. Future research may wish

to take the next step in our proposed causal chain and assess how a firm's impression management tactics prior to option grants affect media coverage.

CONCLUSION

Despite the negative publicity around CEOs who were caught up in the options backdating scandal, and the subsequent regulatory changes to prevent such practices, we provide evidence that manipulation of the granting of options to the benefit of CEOs still occurs. We develop theory around the CEO's informational advantage and their control of the tenor of firm news releases, which results in personal benefit. This study highlights an important limitation of agency theory, opens new avenues of research into the negative side of impression management, and contributes to our understanding of how information asymmetry allows the CEO to engage in self-interested impression management.

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