Strategic News Releases in Equity Vesting Months *

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Abstract

We show that CEOs strategically time corporate news releases to coincide with months in which their equity vests. These vesting months are determined by equity grants made several years prior, and thus unlikely driven by the current information environment. CEOs reallocate news into vesting months, and away from prior and subsequent months. They release 5% more discretionary news in vesting months than prior months, but there is no difference for non-discretionary news. These news releases lead to favourable media coverage, suggesting they are positive in tone. They also generate a temporary run-up in stock prices and market liquidity, potentially resulting from increased investor attention or reduced information asymmetry. The CEO takes advantage of these effects by cashing out shortly after the news releases.

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1 Introduction

The timely release of information is central to the efficiency of both financial markets and the real economy. Information can influence real decisions either directly, or indirectly via affecting stock prices which agents use as signals (see the survey of Bond, Edmans, and Goldstein (2012)). For example, suppliers, employees, and investors may base their decision of whether to initiate, continue, or terminate their relationship with a firm on news releases, or stock prices that are affected by news.[1]

News can also have distributional as well as efficiency effects. In particular, news reduces information asymmetry between investors, thus protecting uninformed investors from trading losses. Indeed, Regulation FD aims to "level the playing field" between investors by restricting selective disclosure. Moreover, these distributional consequences in the secondary market may feed back into efficiency consequences in the primary market. Uninformed investors, who expect future trading losses due to information asymmetry, may withdraw from the market (Bhattacharya and Spiegel (1991)) or require a higher cost of capital (Diamond and Verrecchia (1991)), in turn hindering investment.

Timely information flows are thus important. Subsequent to Regulation FD in October 2000 and Sarbanes-Oxley in July 2002, corporate news releases have been particularly important in communicating new information to investors (Neuhierl, Scherbina, and Schlusche (2013)). News releases do not occur mechanically whenever corporate events take place, but are a discretionary decision of the CEO. This paper investigates whether CEOs strategically time news releases for personal gain. Specifically, we hypothesize that a CEO who intends to sell equity in a given month will delay otherwise past news releases until that month, and accelerate otherwise future news releases into that month. This is because disclosure can temporarily boost the stock price through two channels. First, disclosure can attract investor attention. Barber and Odean (2008) argue that investors need to browse through thousands of stocks when making a buy decision, and so

[1] Moreover, real decisions may be affected not only by specific releases of information, but also the general informativeness of stock prices. For example, Faure-Grimaud and Gromb (2004) show that a blockholder will base her decision to undertake a costly intervention on whether the benefits of this intervention will be reflected in prices within her investment horizon.

are particularly likely to buy attention-grabbing stocks. They indeed find that retail investors are net buyers of such stocks, and Da, Engelberg, and Gao (2011) show that such buying leads to temporary price increases. Second, disclosure can reduce information asymmetry between investors, encouraging uninformed investors to buy the stock and raising its price. Indeed, Balakrishnan, Billings, Kelly, and Ljungqvist (2014) find that voluntary disclosures increase liquidity and thus firm value. Separately, in addition to releasing a greater volume of news, the CEO may also release more favorable news.

However, documenting that CEOs disclose more (favorable) news in months in which they sell equity would not imply a causal relationship from equity sales to disclosure, because the decision to sell equity is endogenous. For example, if a particular month happens to coincide with many favorable events, the CEO will undertake many positive news releases (even in the absence of strategic considerations) and take advantage of any resulting stock price increase by opportunistically selling equity. Thus, disclosure causes equity sales rather than expected equity sales causing disclosure.

We identify a CEO's likelihood of selling equity in a given month by whether he has stock or options scheduled to vest in that month. These "vesting months" depend on the timing and vesting schedule of equity grants made several years prior[2], and thus are unlikely to be affected by the current information environment. It is unlikely that boards can forecast, to the exact month, when news is most likely to be released several years in the future. We identify vesting months between 2006 and 2011 using a new dataset from Equilar, and hand-collect it from proxy statements and SEC Form 4 filings from 1994 to 2005.

We find that CEOs are likely to sell equity shortly after it vests, consistent with the optimal exercise behavior of an undiversified agent (e.g., Kahl, Liu, and Longstaff (2003) and Hall and Murphy (2002)). Controlling for CEOs' unvested and vested equity and other determinants of equity sales, they are 23% (14%) more likely to sell shares in months in which their stock (options) vest, compared to non-vesting months. Thus, scheduled vesting of equity indeed leads to equity sales and thus short-term stock price concerns.

[2] The average vesting horizon in our sample is three years, with a maximum of seven years.

We use novel data from Capital IQ's Key Developments database as our source for news releases. Unlike other news sources such as Factiva, LexisNexis, and Dow Jones Newswires, this database filters the data to eliminate duplicates and extraneous information, and classifies news into categories. This allows us to stratify the releases into discretionary news (the timing of which is likely to be under the CEO's control, such as conferences, client and product announcements, and special dividends) and non-discretionary news (such as earnings announcements or annual general meetings ("AGMs")). Capital IQ also allows us to filter the news by source, thus enabling us to focus on news released by the firm, rather than the media.

We show that firms release significantly more discretionary news in vesting months than in non-vesting months, controlling for other determinants of news releases, such as months in which there is an earnings announcement, AGM or board meeting, analyst coverage, and unvested and vested equity. Firms also significantly reduce disclosures in the months before and after the vesting month. There are 2% more discretionary news releases in vesting months than non-vesting months, and 5% more than in prior months. The value of vesting equity is also significantly associated with the number of news releases. In contrast, the amount of non-discretionary news releases is no different between vesting and non-vesting months. These results are robust to removing out-of-the-money options, which are unlikely to be exercised upon vesting, and equity with performance-based vesting provisions, which may not vest if performance thresholds have not been met.

We then examine the positivity of news releases by studying the tone of media coverage immediately afterwards. Textual analysis from Thomson Reuters News Analytics indicates that media articles after discretionary news releases are more favorable in vesting months than non-vesting months, suggesting that the CEO releases more favorable discretionary news in vesting months. There is no difference in the tone of media coverage following non-discretionary news.

Next, we study the effect of news releases on stock returns and trading volume to verify whether they indeed improve the conditions for equity sales. The disclosure of one discretionary news item in a vesting month generates a significant 16-day abnormal return of 28 basis points ("bps"). The 31-day return is smaller (14 bps), suggesting a temporary attention boost.

The average CEO equity sale is 6.2% of the average daily trading volume. Thus, the CEO may benefit from not only the higher price that results from disclosure, but also any increased liquidity. On the first day after a discretionary news release, abnormal trading volume rises by 0.32% of shares outstanding, compared to the mean of 0.22%. This value decreases over time, consistent with an attention story. The CEO's average equity sale (on a sale day) represents 0.165% of shares outstanding. Thus, the abnormal trading volume generated by the news releases, which is nearly double, can provide adequate camouflage.

The final step is to show that CEOs indeed take advantage of the observed short-term run-ups in stock price and trading volume. We find that the median interval between a discretionary disclosure in a vesting month and the first equity sale by a CEO is 5 days, and the median interval until the CEO sells the entire vesting amount is 7 days.

Our paper is mainly related to two literatures: corporate disclosures and equity vesting. Starting with the former, several papers examine the relation between disclosure and equity incentives (Penman (1982), Noe (1999), Nagar, Nanda, and Wysocki (2003), Cheng and Lo (2006), and Brockman, Khurana, and Martin (2008)). These studies investigate standard measures of incentives which are likely to be endogenous to the information environment. Other papers study disclosure incentives that stem from channels other than the CEO's contract. In Balakrishnan, Billings, Kelly, and Ljungqvist (2014), exogenous broker closures or mergers reduce public information and thus increase managers' incentives to disclose in response. Yermack (2014) finds that firms release less news when the CEO is on vacation and thus disclosures involve particularly high effort. Ahern and Sosyura (2014) find that bidders in stock mergers with fixed exchange ratios originate significantly more positive news stories, which improves their stock price and thus merger terms. While the decision to undertake a stock-financed merger may be driven by the expectation of imminent positive news releases[3], we study disclosure incentives that result from equity grants made several years prior. Another difference is that we study the incentives of the CEO in particular, rather than the firm in general: the news releases in our setting benefit the CEO specifically. While Bebchuk and Fried (2004) argue that CEOs negotiate higher grant-date pay, we show that CEOs can also

[3] Ahern and Sosyura (2014) thus undertake a battery of tests to address alternative explanations for their results.

increase the value of their pay upon vesting. For example, applied to the average annual CEO vesting equity of $5.18 million, the 16-day return of 28 bps translates into a gain of $14,504, in line with the gains to illegal insider trading. These gains come at little cost: changing the timing of news releases is legal[4], and involves less effort than other actions to boost the stock price, such as cutting investment projects. However, while meaningful for the CEO, these gains are small compared to firm value. Thus, we do not claim to identify a major agency problem between the CEO and shareholders. The main effect of delaying news releases may be on stakeholders who made decisions prior to the vesting month with less information, or on the distribution of wealth between shareholders who traded in prior months.

Other papers study disclosures around option award (rather than vesting) dates. Aboody and Kasznik (2000) hypothesize that managers who receive scheduled option grants just before earnings announcements are more likely to have private information than those who receive grants afterwards. Studying 70 earnings forecasts, they find that the former group is more likely to issue pessimistic earnings forecasts, which may lower the grant strike price. Daines, McQueen, and Schonlau (2014) find that before (after) scheduled option grants, management issues negative (positive) earnings guidance, and 8-K filings of material corporate events exhibit negative (positive) announcement returns. We study the CEO's incentives to time news in general, using a sample of 166,000 news releases that predominantly contains disclosures other than earnings guidance and 8-K filings, and show how the effect differs across discretionary and non-discretionary news. Many of these news releases do not have a clear direction (e.g. company conference presentations, earnings release dates). They thus affect the stock price through a different mechanism than earnings forecasts or 8-K filings – attracting attention or reducing information asymmetry – and thus also affect trading volumes. While options have been markedly replaced by stock in recent

[4] See the Internet Appendix of Ahern and Sosyura (2014) for the legality of strategic news disclosure.

years (Frydman and Jenter (2010)), we show that the CEO's existing stock as well as option holdings affect his disclosure incentives.[5]

The second literature studies the relationship between vesting equity and corporate decisions. Edmans, Fang, and Lewellen (2014) show that newly-vesting equity is associated with declines in investment and a greater likelihood of meeting or narrowly beating earnings forecasts. Ladika and Sautner (2013) show that, in response to the adoption of FAS 123R, some firms chose to accelerate option vesting, and such accelerated vesting was associated with a reduction in capital expenditure. While those papers show that newly-vesting equity affects real decisions, we show that it can affect the information environment, thus linking a corporate finance variable (the CEO's contract) to financial markets. Since news releases are much easier to manage than real decisions, disclosure is arguably the most plausible arena in which short-term concerns will manifest. In addition, Edmans, Fang, and Lewellen (2014) study the Equilar data, which starts in 2006, while Ladika and Sautner (2013) use the R.G. Associates Option Accelerated Vester Database, which covers May 2004 to February 2006. We use the Equilar data from 2006 to 2011, and hand-collect data from 1994 to 2005. Gopalan, Milbourn, Song, and Thakor (2014) study a different measure of short-term incentives – the duration (average vesting horizon) of the CEO's equity holdings. We do not use duration in our setting as it is endogenous to current equity grants and the decision to retain previously-vested equity, both of which may be correlated with the current information environment.

In addition to the literature on short-term incentives in particular, our paper also contributes to the literature on CEO compensation in general. While this literature is substantial, it is very difficult to document causal effects. The survey of Frydman and Jenter (2010) notes that "compensation arrangements are the endogenous outcome of a complex process. This makes it extremely difficult to interpret any observed correlation between executive pay and firm outcomes as evidence

[5] Yermack (1997) shows that CEOs can also increase the value of their option grants by influencing their award dates around pre-scheduled earnings announcements. Options are more likely to be awarded before (after) positive (negative) earnings surprises. Smukler (2009) documents anecdotal examples of companies releasing negative information shortly after what he assumes to be the vesting dates of options. We have data on actual vesting dates and conduct a systematic study.

of a causal relationship." We use a measure of CEO incentives that is unlikely to be driven by the current contracting environment, allowing us to show that CEO contracts affect behavior.

This paper is organized as follows. Section 2 describes the data and Section 3 shows that CEOs frequently sell equity in vesting months. Section 4 presents our core results, linking the frequency and positivity of discretionary news releases with equity vesting schedules. Section 5 shows that news releases lead to short-term increases in stock prices and trading volume, and that the CEO takes advantage of these increases by selling equity shortly after such releases. Section 6 discusses robustness tests and Section 7 concludes.

2 Data and Variable Construction

This section describes the variables used in our analysis. Our goal is to study how disclosure is affected by the CEO's concerns for the stock price in a given month. Theoretically, these concerns will arise if he has equity vesting in that month, because he is likely to sell his vesting equity for diversification reasons (e.g., Kahl, Liu, and Longstaff (2003) and Hall and Murphy (2002)). We thus seek to identify these vesting months. Information on vesting schedules is available in SEC Form 4, which must be filed after a stock or option award. For each grant, the Form 4 filing provides the number of securities granted and the grant date in a standardized table, and vesting information in a footnote. For example, Form 4 indicates that John H. Eyler, Jr. of Toys "R" Us was awarded 20,000 restricted shares on April 1, 2004. The footnote reads:

"These shares vest 50% on the second anniversary of the award date and 100% on the third anniversary of the award date."

We use these footnotes to calculate the number of shares scheduled to vest on each date. Here, 10,000 shares vest on April 1, 2006, and the remaining 10,000 vest on April 1, 2007.

For option grants, a second source of vesting information is SEC proxy statements, which provide information on all options granted during the year in a format comparable to Form 4. The number of securities, exercise price, and maturity are in a standardized table, and the vesting schedule is in

a footnote. For example, the 2001 proxy filing of IBM states that Louis Gerstner received 650,000 options with an exercise price of $109.62. The footnote reads:

"Mr. Gerstner's grant becomes exercisable in two equal installments, on March 1, 2001, and on March 1, 2002."

Here, 325,000 options vest on March 1, 2001, and the remaining 325,000 vest on March 1, 2002.

In a randomized sample of options, we find that the information quality is higher in proxy statements than in Form 4 filings, which are not filed regularly and sometimes missing altogether. Unfortunately, proxy statements do not provide grant-level vesting information on restricted stock, which would allow identification of vesting months, but only the number of shares vesting in the current fiscal year as a whole. Therefore, we hand-collect option vesting information from proxy statements and stock vesting information from Form 4 filings, from 1994 (when SEC filings become available electronically) to 2005. To make the hand-collection manageable, we restrict our pre-2006 sample to firms that were part of the S&P 500 Index in any year within that period.

For grants starting from 2006-2011, we use the Equilar dataset. Using proxy statements and Form 4 filings, Equilar provides vesting information for all stock and option grants to executives of Russell 3000 firms, in a standardized format. For each grant, Equilar records the date and size of the grant, the vesting period, and whether the grant exhibits cliff vesting (where the entire grant vests at the end of the vesting period) or graded vesting. Graded vesting means that part of the grant vests prior to the end of the vesting period, but it is unclear whether it corresponds to straight-line, back-loaded, or front-loaded vesting. We assume that graded vesting refers to straight-line vesting on an annual schedule, as most pre-2006 grants with graded vesting vest on this basis.

We use these vesting schedules to create the variable $VestingMonth$, a dummy variable that equals one if the CEO has any equity vesting in a given month. We also create $VestingSensitivity$, the dollar sensitivity of the vesting securities to a 100% change in the stock price, which takes into account the amount of vesting equity. To do so, we first calculate the delta of the vesting securities. We obtain the strike price and maturity date of a given option grant from either the proxy statement or Equilar. We use this information, together with the average monthly stock return volatility over the past 12 months, annual dividend yield from CRSP, and the one-month Treasury bill rate as

the risk-free rate, to calculate the Black-Scholes delta. We sum across the deltas of all vesting option grants and add the number of vesting shares (since the delta of a share is 1) to calculate the aggregate delta of all vesting securities. This delta measures the dollar sensitivity of the vesting securities to a $1 increase in the stock price. We multiply it by the stock price at prior month-end to form $VestingSensitivity$. This sensitivity is comparable across firms with different stock prices and is analogous to the Hall and Liebman (1998) incentive measure, but focuses on vesting equity rather than the entire equity portfolio. While the delta represents the effective number of vesting shares, the sensitivity represents their effective value. We use the logarithm of one plus $VestingSensitivity$ due to significant skewness.

Edmans, Fang, and Lewellen (2014) use $VestingSensitivity$ as their key independent variable, because they study the link between short-term incentives and investment. Since reductions in investment lower future firm value and thus the CEO's unvested equity holdings, the CEO will trade off the short-term gain from disinvestment with the potential long-term loss. In contrast, it is less clear that strategically timing news has a substantial effect on long-run firm value; instead, its main effects are likely to be on other stakeholders or on the distribution of wealth between trading shareholders. In addition, news timing arguably involves less effort than changing investment plans, and so it may be that vesting equity of any amount induces the CEO to increase disclosures. We thus use both $VestingMonth$ and Log(1+$VestingSensitivity$) as independent variables in different specifications. Our discussion will primarily concern the $VestingMonth$ results since they are easier to interpret – in particular, we can compare the amount of news disclosed in vesting versus non-vesting months, and versus the previous and the following month.[6]

Our identification strategy is that vesting equity causes the CEO to be concerned about the current stock price, because he is likely to sell vesting equity for diversification reasons. Some CEOs hold already-vested equity, which could also lead to stock price concerns if they are free to sell it. However, any association between vested equity and news releases is difficult to interpret

[6] Our method of identifying equity vesting also differs from Edmans, Fang, and Lewellen (2014), who study the actual equity that vests in a given year. By looking at actual vesting ex-post, they do not require the assumption that graded vesting refers to straight-line vesting. However, their measure is only available on an annual basis, consistent with their analysis of investment, which is also available on an annual basis. We study the number of news releases in a given month, which requires us to estimate the number of shares and options that vest in a given month. Thus, we follow Gopalan, Milbourn, Song, and Thakor (2014) by studying predicted vesting ex-ante.

because the CEO's decision to hold onto vested equity is endogenous – for example, it could be driven by the anticipation of future positive news releases. In addition, the CEO may face explicit or implicit constraints on selling his vested equity. These same constraints also support our identifying assumption that CEOs increase equity sales in vesting months, because vesting relaxes these constraints. One constraint may result from ownership guidelines set by the board. These guidelines are typically satisfied only by vested equity (Core and Larcker (2002)), and so vesting allows the CEO to sell equity without violating the guidelines. Second, the CEO may hold vested equity voluntarily for control reasons. Since unvested equity does not provide voting rights, vesting allows additional sales without falling below his desired level of voting rights. Similarly, the CEO may hold a threshold level of vested equity to signal confidence in the firm. Consistent with these points, we show in Section 3 that CEOs sell significantly more equity in vesting months, even after controlling for already-vested equity. Note that our identification does not require the CEO to sell his entire equity upon vesting, only that vesting months are a significant determinant of equity sales.

Our main analysis links equity vesting to news releases. We obtain data on news releases from Capital IQ's Key Developments database, which starts in 2002. This database consists of information from over 20,000 public news sources, company press releases, regulatory filings, call transcripts, investor presentations, stock exchanges, regulatory websites, and company websites. The database has several attractive features compared to other standard news data sources, such as Factiva, LexisNexis, and Dow Jones Newswires. First, it pre-filters the data to eliminate duplicates and extraneous information. This results in a much cleaner dataset which consolidates all the different sources of a particular news item in a single record. Second, it classifies news releases into different items, allowing us to stratify them into two main categories. The first is discretionary news, the timing of which is likely to be under the CEO's control, such as conferences, client and product announcements, and special dividends. Non-discretionary news is likely outside the CEO's control, such as earnings announcements or AGMs. Appendix B provides the full classification, as well as the frequency of the different news items, and Appendix C shows examples of Capital IQ news items for Wal-Mart in the first quarter of 2012. Third, Capital IQ allows us to filter the news

by source. We exclude news released by the media, and retain only news items generated from within the firm: those whose sources are company websites, newswires that disseminate corporate press releases (e.g. Business Wire, PR Newswire, Market Wire, and GlobeNewsWire), SEC filings, and the Capital IQ transactions database (e.g. M&A announcements, debt issuances, and share buybacks). Some of the other data providers (e.g. Factiva) forbid automated downloads, thus restricting their use in academic research. While researchers have frequently used the Capital IQ database for transactions, we are one of the first to use its Key Developments database of news items.[7]

We relate $NewsEvents$, the number of news events, to either $VestingMonth$ or Log(1+$VestingSensitivity$). We control for several other determinants of news releases, described in more detail in Appendix A. AGM and $Board$ are dummy variables for whether there is an AGM or board meeting that month, which Dimitrov and Jain (2011) show are positively associated with news releases. $EAYearly$ and $EAQuarterly$ are dummy variables for whether that month featured a yearly or quarterly earnings announcement. $EarningsSurprise$ is that quarter's earnings surprise, taken from the Institutional Broker Estimates Services ("I/B/E/S") database. $Analyst$ is the log of one plus the number of analysts following the stock (from I/B/E/S). Balakrishnan, Billings, Kelly, and Ljungqvist (2014) show that firms release more news to compensate for a loss in analyst coverage. After filtering for the availability of these controls, we have 166,041 news releases.

We also control for $VestedSensitivity$ and $UnvestedSensitivity$, the sensitivity of the CEO's already-vested and unvested equity, which are calculated analogously to $VestingSensitivity$. We also use the logs of one plus those variables due to strong skewness. Due to the aforementioned potential constraints on the sale of vested equity, we do not have clear predictions for the sign of its coefficient. Since the strategic reallocation of news releases may not have a significant long-term effect on firm value, the association with unvested equity is also unclear.

To gauge whether the news releases are positive or negative, we use data on the tone of subsequent media coverage from the Thomson Reuters News Analytics ("News Analytics") database.

[7] We are aware of only two working papers that use the Key Developments database: Nichols (2009) and Cohn, Gurun, and Moussawi (2014)

This database contains firm-specific news articles from 41 media outlets that Thomson Reuters transmits to its clients. It uses linguistic parsing to measure the proportion of words in a media article that are positive, neutral, or negative.[8]

A separate analysis links equity vesting to equity sales, to show that vesting equity indeed induces short-term stock price concerns. (For brevity, we will use the term "equity sales" to refer to both standard sales of stock, and sales of shares acquired after option exercises.) We obtain data from the Thomson Financial Insider Trading database, which is collected from SEC Form 4. $SalesMonth$ is an indicator that equals one if the CEO sells any equity in a given month, and $SalesAll$ is an indicator that equals one if, by that month, the CEO has sold all the equity that vested in the most recent vesting month. We control for Log(1+$VestedSensitivity$) and Log(1+$UnvestedSensitivity$), because a CEO with significant unvested equity may have greater diversification needs and thus sell equity more readily upon vesting. We also control for AGM, $Board$, $EAYearly$, $EAQuarterly$, and $EarningsSurprise$, because these events may lead to news releases that temporarily boost the stock price and encourage equity sales.

Our remaining tests investigate the stock price and trading volume reaction to news releases, which we study using a standard event-study methodology, and we also study the interval between news releases and equity sales.

Table 1 presents the summary statistics for our main variables. Panel A shows that vesting periods average 3.4 years for stock and 3.6 years for options, with a maximum of 7 and 6.3 years, respectively. Thus, vesting equity is determined by equity grants awarded to the CEO several years prior, and can plausibly be considered exogenous to the current information environment. In months with corporate news events in Capital IQ, a typical firm has an average of 4 news releases, of which 3 are discretionary. Including the months with no news, the averages are 1.8 and 1.5. The average (median) media article comprises 36% (23%) positive words, 38% (32%) negative words, and 26% (16%) neutral words.

[8] The News Analytics database covers 1996-2011; we only use the data starting from 2003, due to potential survivorship bias prior to 2003 (see Scherbina and Schlusche (2013)).

In Panel B, we provide summary statistics on equity vesting and equity sales by CEOs. CEOs sell on average $5.4 million of equity per year, there are 3 vesting months on average per year, and CEOs trade in 4 out of 12 months on average.

Appendix D reports the correlations between some of the main variables used in this study. Appendix E shows the distribution of events across the months in a calendar year. The first quarter contains nearly 40% of vesting months and more than 70% of yearly earnings announcements. It will therefore be important to control for month fixed effects in our analyses.

3 Equity Vesting Months and CEO Sales

This section studies whether CEOs indeed sell equity soon after it vests. In Table 2, we compute the average distance between the month in which a CEO's equity vests and the month in which we first observe a subsequent equity sale.[9]

Panel A shows that in more than 50% of cases, the CEO sells stock in the vesting month. The frequency of first equity sales in any subsequent month is less than 10%. The pattern is similar for the exercise of options, but with lower magnitudes for the vesting month. In Panel B, we report the time it takes for a CEO to sell all the equity that vests in a vesting month. In 17% of cases, the CEO sells all the equity within the vesting month. The differences between the vesting month and future months, although significant, are smaller in Panel B because it measures the likelihood of selling equity *by* a particular month. Thus, mechanically, the further out the month, the more time the CEO has to sell all of his vesting equity. However, the frequency of all sales in any subsequent month remains below 10%.

The CEO pays a lower, long-term, capital gains tax rate if he waits 12 months after stock vesting or option exercise before selling his shares (e.g. Cicero (2009) and Fos and Jiang (2014)). However, in Table 2, equity sales in month 12 are only 2% higher than in month 11, and much

[9] The following example illustrates how we treat the case of multiple vesting months before a sale. Assume that equity vests in March and June, and that the first observed sale is in July. We consider this observation as both a first sale 4 months after the March vesting month, and a first sale 1 month after the June vesting month.

smaller than the frequency of sales in the vesting month. Since most vesting-related trades happen in the vesting month, we use this month for identification.

In Table 3, we conduct a multivariate regression on the determinants of CEO sales:

$$\begin{aligned} Sales_{s,t} &= \alpha + \beta * VestingMonth_{s,t} + \rho * MonthBefore_{s,t} + \\ &+ \nu * MonthAfter_{s,t} + \gamma * Controls + \text{Fixed Effects} + \epsilon_{s,t}, \end{aligned} \tag{1}$$

where s indexes a firm and t indexes a month. We use year, month, and firm fixed effects to control for unobservable firm-level or time-specific determinants of equity sales. The dependent variable *Sales* is $SalesMonth$ in Panel A and $SalesAll$ in Panel B. Our key independent variable of interest is $VestingMonth$. We also include indicators for one month before ($MonthBefore$) and one month after ($MonthAfter$) the vesting month. The remaining controls are as described in Section 2.

The results in Table 3 are consistent with those in Table 2. In column (1), we report that CEOs are 23% more likely to sell shares in a month in which stock vests than in a month in which no stock vests; this figure is 14% for options (column (2)). Moreover, CEOs are 15% more likely to sell the full amount of vesting stock in the vesting month than by any subsequent month (column (3)); this figure is 8% for options (column (4)). The control variables load with the expected sign. CEOs are more likely to sell equity in months where earnings are announced or there is an AGM, the greater the earnings surprise, and the greater his unvested equity.

Overall, the results in Tables 2 and 3 suggest that managers sell equity shortly after vesting, and so vesting equity induces the CEO to be concerned with short-term stock prices. Since the results are similar between stock and options, we will consider aggregate vesting of all equity in the bulk of the paper.

4 News Releases in Equity Vesting Months

This section studies the relation between equity vesting months and the quantity and positivity of news releases.

4.1 Quantity of News Releases

Table 4 reports the core result of this paper, that vesting equity is significantly related to news releases. We run the following model for the number of news events, under the assumption of a Poisson error structure:

$$\begin{aligned} NewsEvents_{s,t} &= \alpha + \beta * VestingMeasure_{s,t} + \rho * MonthBefore_{s,t} + \\ &+ \nu * MonthAfter_{s,t} + \gamma * Controls + \text{Fixed Effects} + \epsilon_{s,t} \end{aligned} \tag{2}$$

This model accounts for the discreteness and skewness of our data by using an explicit stochastic specification for the news variable. In particular, we assume that our dependent variable ($NewsEvents$) follows a Poisson distribution.

In Panel A, our independent variable of interest ($VestingMeasure$) is the $VestingMonth$ dummy. We add indicators for the one month before and after (*MonthBefore* and *MonthAfter*, respectively). All specifications include year, month, and firm fixed effects.[10] Column (1) includes the non-compensation controls: indicators for other newsworthy months AGM, $Board$, $EAYearly$, and $EAQuarterly$), as well as $EarningsSurprise$ and $Analyst$. It shows that firms release 2% more discretionary news in vesting months.[11] Column (3) adds the compensation controls of Log(1+$VestedSensitivity$) and Log(1+$UnvestedSensitivity$) and the figure rises to 5%.[12] In contrast, columns (2) and (4) show that the amount of non-discretionary news is no different between vesting and non-vesting months, consistent with the CEO having less latitude to control non-discretionary news.

There is also a significant reduction in discretionary news both one month before and one month after the vesting month, suggesting that the CEO may be strategically delaying news until the vesting month and accelerating it into the vesting month. Firms release 6% more discretionary

[10] The results are unchanged when using CEO instead of firm fixed effects. They are also unchanged when using fiscal year instead of calendar year effects.

[11] To obtain this figure, we divide the coefficient of 0.0355 by the average number of discretionary news releases of 1.48 per month, which is reported in Table 1, Panel A.

[12] We present specification (1) without the compensation controls since the sensitivity of vested equity mechanically falls in vesting months, potentially leading to multicollinearity. However, Appendix D shows that the correlation between $VestingMonth$ and Log(1+$VestedSensitivity$) is small in practice.

news in the vesting month compared to the prior month (column (1)). This figure is 5% both when adding the non-compensation controls (column (3)) and with all controls (column (5)).

Panel B uses Log(1+$VestingSensitivity$) as the main independent variable. The sensitivity of vesting equity is significantly positively related to discretionary news releases, but unrelated to non-discretionary news releases.

The above analysis quantifies the increase in news releases in vesting months versus non-vesting months. A broader question is the extent to which news releases are higher in months in which the CEO sells equity in general. Equity sales can stem from channels other than vesting equity – for example, a CEO may voluntarily hold already-vested equity as a long-term investment, but later decides to rebalance his portfolio. Since actual equity sales are endogenous, we use vesting months as an instrument. The two properties of vesting months discussed earlier – their high correlation with sale months and their determination by equity grants awarded several years prior – are analogous to the relevance criterion and the exclusion restriction for a valid instrument.

In Table 5, we report the results of an instrumental variables Poisson regression estimated via Generalized Method of Moments, in which we instrument the endogenous regressor $SalesMonth$ using $VestingMonth$. The control variables are as in Table 4, except that we remove $MonthBefore$ and $MonthAfter$, as well as firm fixed effects. We test how the probability of selling in a given month $\widehat{SalesMonth}$ affects $NewsEvents$. We find significant coefficients on $\widehat{SalesMonth}$ for discretionary news but not non-discretionary news. Thus, in months in which CEOs are predicted to sell equity, they release more discretionary but not non-discretionary news.

4.2 Positivity of News Releases

While Section 4.1 studies the quantity of news items released, this section studies their positivity. Our hypothesis is that, in vesting months, the CEO should release not only a greater number of news items, but also more positive news. We measure the positivity of news releases using the tone of media coverage immediately after the disclosure, since more positive news should lead the media to write more favorable articles about the company.

In Table 6, we conduct an "event-study"-type analysis of the effect of news releases on the tone of subsequent media coverage. Our dependent variable is the abnormal tone of a media article, measured by the percentage of positive, neutral, or negative words as reported in News Analytics in the 2-day ([0,1]), 16-day ([0,15]), and 31-day ([0,30]) period afterwards, minus the average positive, neutral, or negative tone score for media articles over [-300,-46]. The univariate analysis in Panel A shows that discretionary disclosures in vesting months lead to media coverage with more positive (columns (1)-(3)) words and fewer neutral (columns (4)-(6)) words across all windows, consistent with the news releases themselves being positive. Columns (7)-(9) show no systematic change in the proportion of negative words, but columns (10)-(12) show that the "net positivity" of media coverage (proportion of positive words minus proportion of negative words) is significantly greater in all windows. There is no systematic pattern for non-discretionary news releases in the vesting month. For example, the net positivity measure is significantly negative for [0,1] but significantly positive for [0,30]. Similarly, there is no systematic pattern for non-vesting months. For both discretionary and non-discretionary news, the net positivity measure is significantly negative for [0,1] but significantly positive for [0,15].

Panel B controls for other newsworthy events on the day of the news release: days of earnings announcements ($EADay$), AGM meetings ($AGMDay$), and board meetings ($BoardDay$). The results are similar to Panel A. We also test for the difference in media tone between vesting and non-vesting months after controlling for these events. Discretionary news releases lead to the proportion of positive words in a [0,1] window being 1.3 percentage points higher in vesting than non-vesting months, significant at the 1% level. The difference is also significant at the 1% level for the [0,15] and [0,30] windows, and for the net positivity measure over all three windows. In contrast, the difference for non-discretionary news releases is insignificant across all three windows, for both the positivity and net positivity measures. These results suggest that managers release significantly more positive discretionary news in vesting months than non-vesting months, but the positivity of non-discretionary news is no different.

Figure 1 graphically illustrates the results of Table 6. It depicts the difference in tone of media coverage over a [0,30] day window after discretionary news releases in vesting months versus non-

vesting months. The frequency of positive words is significantly larger after discretionary news released in vesting months compared to non-vesting months. It is negatively correlated with the frequency of neutral words, suggesting that the media is substituting away from neutral into positive words, consistent with Table 6.

5 Returns and Volume in Equity Vesting Months

We have shown that CEOs release more news in vesting months, and that such news is more likely to be positive. Our hypothesis is that they do so to increase the stock price and trading volume, by reducing information asymmetry and attracting investor attention. In Table 7, we study whether news releases indeed have these effects. In Panel A, we calculate the average 2-day ([0,1]), 16-day ([0,15]), and 31-day ([0,30]) cumulative abnormal return (CAR) and daily abnormal trading volume around the release of discretionary news. We use these different windows to test whether any price and volume increases are temporary, as predicted by an attention story. The CAR is calculated over the CRSP value-weighted index, using a beta estimated over [-300,-46]. The daily abnormal trading volume is the daily trading volume minus the average trading volume over [-70,-31], divided by the number of shares outstanding, and excludes the CEO's own trades.

The univariate analysis of Panel A shows that a discretionary news release in a vesting month is associated with a 16-day CAR of 28 bps ($t = 4.54$); the 2-day CAR is similar. The positive stock price reaction to discretionary news releases in vesting months is consistent with these releases being more positive, as documented in Table 6. However, it could also arise from the news attracting attention to the stock – thus, Section 4 uses the tone of media articles, rather than the stock price reaction, as our measure of the positivity of news releases. As a back-of-the-envelope calculation of the dollar gain to the CEO, Table 1, Panel B reports that the average annual value of CEO equity vesting is \$5.18 million.[13] Therefore, a 28 bp CAR implies an average gain of \$14,504. While this gain appears modest, it is in line with gains reported in cases of illegal insider trading.

[13] This figure represents the CEO's gain if he discloses one additional news item in each vesting month, and sells the vesting equity 16 days after the disclosure. Instead of using the CEO's average annual vesting equity, we could use his average annual equity sales of \$5.44 million. This would imply slightly higher gains for the CEO.

For example, Meulbroek (1992) reports a median gain per security of \$17,628.[14] This figure is for 1980-9 (i.e. with a midpoint of 1985) whereas our numbers are for 2002-11 (i.e. with a midpoint of 2007). Adjusting for inflation, the Meulbroek (1992) number becomes \$33,968 in 2007 terms. Since insider trading is illegal and thus highly risky, it is logical that the benefit should be higher than for strategic news timing. Moreover, the gain to strategic news timing is even higher if the CEO discloses several news items. In addition to entailing no legal cost, it arguably involves less effort than other attempts to inflate the stock price (such as changing investment projects). The estimated gains to the CEO are economically meaningful but also plausible. In particular, while significant for the CEO (especially because they come at little cost), they are not substantial compared to firm value, and so it is unlikely that boards would intervene to prevent such strategic timing. The main effect is on stakeholders who base their decisions on the stock price, or on the distribution of wealth between trading shareholders.

Panel A also reports the price reactions to disclosures in non-vesting months. The 2-day CAR for discretionary news in non-vesting months is smaller than for vesting months, at 17 bps compared to 25 bps, while the 16- and 31-day CARs are higher. These results suggest that the CEO may be releasing particularly attention-grabbing news in vesting months, which has a short-lived price impact. Panel B shows that, after controlling for $EADay$, $AGMDay$, and $BoardDay$, the 2-day (25 bps) and 16-day (28 bps) CARs to discretionary news releases are significant at the 1% level, and the 31-day (15 bps) CAR is significant at the 10% level. The 2-day reaction to discretionary news is 8 bps higher for vesting months than non-vesting months, significant at the 5% level. In contrast, the difference in reactions for non-discretionary news is insignificant, consistent with the CEO having less latitude to affect non-discretionary news.

In addition to increasing the stock price, news releases can also benefit the CEO by increasing the trading volume, thus reducing the price impact of his equity sales. The right-hand side of Table 7, Panel A, reports that, in a vesting month, the release of discretionary news generates significant average daily abnormal trading volume of 0.32% ($t = 31.53$) of shares outstanding over 2 days,

[14] This figure includes not only CEOs but all defendants formally charged with insider trading. As an example of a high-profile case, Martha Stewart avoided losses of \$45,673 when she sold shares of ImClone Systems in 2001, leading to a insider trading trial and indictment.

and 0.03% ($t = 7.47$) over 16 days.[15] The average abnormal trading volume is insignificant over 31 days, consistent with news releases creating a short-lived attention boost, consistent with the CAR being lower over [0,30] than [0,15]. The above figures compare to an average daily trading volume of 0.22%, and the CEO's average equity sale (on a sale day) of 0.165% of shares outstanding. Thus, the 2-day abnormal trading volume is nearly double the average CEO equity sale, and so can provide adequate camouflage. Note that this high ratio is not because CEO sale volumes are small: the average CEO equity sale is 6.2% of the average daily trading volume.

Panel B adds controls for other events and finds a similar pattern. The abnormal trading volume associated with discretionary news is significantly higher for vesting than non-vesting months using a 2- or 16-day window (0.05% and 0.01% with p-values of 0.00 and 0.03, respectively), suggesting that news in vesting months attract more attention. The difference is insignificant for the 31-day window (0.01% with a p-value of 0.29). For non-discretionary news, the difference in abnormal trading volume between vesting and non-vesting months is insignificant across all windows (p-values ranging from 0.55 to 0.86). The abnormal trading volume for non-discretionary news is higher than for discretionary news, likely because the former category includes earnings announcements.

Since the stock price and volume increases are temporary, we study whether CEOs indeed take advantage of these short-term effects by selling their equity shortly after news releases in vesting months. Figure 2 illustrates the number of trading days between a discretionary news release and the first subsequent CEO equity sale. We focus on discretionary news releases that are within 30 days of the most recent vesting date, as these releases are most likely to be prompted by vesting (and thus the intention to sell) rather than other reasons. Half of the first equity sales occur within 5 days after the release of discretionary news in vesting months, compared to more than 45 days for non-discretionary news.[16] In Figure 3, we show that it takes the median CEO only 7 days to sell all of his newly-vested equity after the release of a discretionary news item that is within 30 days of the most recent vesting date.

[15] The figures in Table 7 exclude the CEO trades from the calculation of abnormal trading volume. Including them has very little effect on the results.

[16] We also consider only the release of non-discretionary news that is within 30 days of the most recent vesting date.

Overall, our results indicate that the timing of corporate news may be influenced by CEOs seeking to attract investor attention, reduce information asymmetry, or release more positive news. The greater price reaction to discretionary news releases in vesting versus non-vesting months suggests that the market does not take into account the CEO's greater incentives to release news in vesting months. Thus, news releases *do* affect stock prices, and so potentially have redistributional consequences and affect real decisions. One potential explanation for why the market does not take into account the CEO's short-term concerns is that data on equity vesting is not salient and must be hand-collected from footnotes and Form 4 filings. Lilienfeld-Toal and Ruenzi (2014) find long-run abnormal returns to portfolios formed on standard measures of CEO incentives (wealth-performance sensitivity). That even standard elements of the CEO's contract are not fully incorporated by the market is consistent with the market not taking into account the CEO's equity vesting schedule, the calculation of which requires hand collection from footnotes. Similarly, Edmans, Fang, and Lewellen (2014) find that CEOs with significant vesting equity enjoy superior earnings announcement returns. In addition, while a rational market may discount the information content of positive news releases issued by a manager with vesting equity, the positive returns to disclosures may stem from them attracting attention (rather than their information content), which is less likely to be discounted. Indeed, we also find a greater volume reaction to discretionary news released in vesting versus non-vesting months, consistent with an attention story.

6 Robustness Tests

This section examines the robustness of our main findings in Table 4 to alternative samples and measurement choices. In Table 8, we report estimates obtained from using the same specification as column (3) of Table 4 (the effect of vesting equity on the number of discretionary news releases, including all controls), unless otherwise noted. To save space, we report only the coefficients on the independent variables of interest. Panel A studies $VestingMonth$, $MonthBefore$, and $MonthAfter$, and Panel B investigates Log(1+$VestingSensitivity$).

In column (1) of Panel A, we restrict our sample to firms that were part of the S&P 500 at some point during the period between 1994 and 2011. This restriction excludes small firms in the Russell 3000 covered by Equilar. The positive and significant coefficient on $VestingMonth$, and the negative and significant coefficients on $MonthBefore$ and $MonthAfter$, suggest that our results in Table 4 are not driven by small firms that could be illiquid or release little news.

In column (2), we restrict our sample to firms covered in the Equilar database, which covers Russell 3000 firms from 2006 to 2011 and has been used by prior literature, such as Gopalan, Milbourn, Song, and Thakor (2014) and Edmans, Fang, and Lewellen (2014). This excludes our hand-collected data of S&P 500 firms for the period between 1994 and 2005. Our results remain significant, which suggests that they are not due to any particular feature or systematic bias of our hand-collected data.

Aboody and Kasznik (2000) and Daines, McQueen, and Schonlau (2014) argue that CEOs release more negative news before the award date of an option grant, and more positive news after the award date. In column (3), we control for $GrantMonth$, a dummy variable for the award date of (actual) option grants. The coefficient on $VestingMonth$ remains positive and significant and the coefficients on both adjacent months remain negative and significant.[17]

In column (4), we run a placebo test in the spirit of Daines, McQueen, and Schonlau (2014). In particular, we create a pseudo-vesting month that is exactly 6 months after the actual vesting month. The coefficient is insignificant, suggesting that the result is not driven by other spurious events with a cyclical pattern.

Bettis, Bizjak, Coles, and Kalpathy (2010) find that performance-based vesting provisions have become increasingly common in equity grants. Such grants will not vest on their scheduled vesting date if certain performance thresholds have not been met, and so may provide weaker incentives to release news. Column (5) excludes from our sample all equity grants with performance-based vesting provisions; this information is available in Equilar and the footnotes of Form 4 filings and proxy statements. Our results are unchanged.

[17] Appendix D shows the distribution of vesting and award months across the calendar year.

The award of restricted stock to CEOs has become more common than options recently (Frydman and Jenter (2010)), in part due to the option backdating scandal. In columns (6) and (7) we limit our sample to stock and options, respectively. For both stock and options, $VestingMonth$ remains positive and significant; thus, our results are not driven by a component of compensation (options) that is becoming less common nowadays. The coefficients on $MonthBefore$ and $MonthAfter$ remain negative in both columns, although they are now insignificant, likely because each specification only uses partial information on the CEO's equity.

In column (8) we define a vesting month as a month in which either stock and/or in-the-money options vest. The rationale is that out-of-the-money options are unlikely to be exercised upon vesting, and thus provide the CEO with incentives to increase the stock price. The coefficient on $VestingMonth$ remains positive and significant, and the coefficient on $MonthBefore$ is negative and significant.

In Panel B of Table 8, our main independent variable is (Log(1+ *VestingSensitivity*)). The model specifications presented in Panel B are similar to those in Panel A, except that in column (3) we control for Log(1+*GrantSensitivity*) (the log of one plus the sensitivity of new equity grants) instead of $GrantMonth$. In column (4), we replace option deltas with intrinsic values and calculate *VestingSensitivityAdjusted*, which assigns a value of 0 for out-of-the-money options and a value of 1 for in-the-money options. Again, the rationale is that only in-the-money options are likely to be exercised immediately upon vesting. The results remain significant.

7 Conclusion

This paper shows that managers strategically time the disclosure of discretionary corporate news to coincide with the scheduled vesting of their equity grants. Discretionary disclosures are significantly higher in months in which equity is scheduled to vest, and significantly lower in the months before and after vesting. They are associated with favorable media coverage, suggesting that they are positive in tone. The news releases lead to temporary increases in the stock price and trading

volume, consistent with an attention story. CEOs exploit these temporary effects: the median CEO sells all his vesting equity within 7 days of a discretionary news release in a vesting month.

Our results have two main implications. First, we show that a CEO's contract affects firm behavior; moreover it affects not just corporate decisions (as typically studied by the myopia literature) but also the firm's information environment. This result links corporate finance to financial markets. Second, we provide evidence that CEOs strategically time the release of news, using a measure of CEO incentives that is likely exogenous to the current information environment. Information does not just flow mechanically to financial markets when events occur, but instead the timing of news releases can be strategically chosen by the CEO. These news releases in turn affect stock prices, and thus may have distributional consequences on shareholders who trade, and efficiency consequences on stakeholders who base their decisions on corporate news or stock prices.

References

Aboody, D., and R. Kasznik, 2000, "CEO Stock Option Awards and the Timing of Corporate Voluntary Disclosures," *Journal of Accounting and Economics*, 29, 73–100.

Ahern, K., and D. Sosyura, 2014, "Who Writes the News? Corporate Press Releases During Merger Negotiations," *Journal of Finance*, 69, 241–291.

Balakrishnan, K., M. Billings, B. Kelly, and A. Ljungqvist, 2014, "Shaping Liquidity: On the Causal Effects of Voluntary Disclosure," *Journal of Finance*, forthcoming.

Barber, B., and T. Odean, 2008, "All That Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors," *Review of Financial Studies*, 21, 785–818.

Bebchuk, L., and J. Fried, 2004, *Pay Without Performance: The Unfulfilled Promise of Executive Compensation*. Harvard University Press, Cambridge, MA.

Bettis, C., J. Bizjak, J. Coles, and S. Kalpathy, 2010, "Stock and Option Grants with Performance-Based Vesting Provisions," *Review of Financial Studies*, 23, 3849–3888.

Bhattacharya, U., and M. Spiegel, 1991, "Insiders, Outsiders, and Market Breakdowns," *Review of Financial Studies*, 4, 255–282.

Bond, P., A. Edmans, and I. Goldstein, 2012, "The Real Effects of Financial Markets," *Annual Review of Financial Economics*, 4, 339–360.

Brockman, P., I. Khurana, and X. Martin, 2008, "Voluntary Disclosure around Share Repurchases," *Journal of Financial Economics*, 89, 175–191.

Cheng, S., and L. Lo, 2006, "Insider Trading and Voluntary Disclosures," *Journal of Accounting Research*, 44, 815–848.

Cicero, D., 2009, "The Manipulation of Executive Stock Option Exercise Strategies: Information Timing and Backdating," *Journal of Finance*, 64, 2627–2663.

Cohn, J. B., U. G. Gurun, and R. Moussawi, 2014, "Micro-Level Value Creation Under CEO Short-Termism," Working Paper, University of Texas at Austin.

Core, J., and D. Larcker, 2002, "Performance Consequences of Mandatory Increases in Executive Stock Ownership," *Journal of Financial Economics*, 64, 317–340.

Da, Z., J. Engelberg, and P. Gao, 2011, "In Search of Attention," *Journal of Finance*, 66, 1461–1499.

Daines, R. M., G. R. McQueen, and R. J. Schonlau, 2014, "Right On Schedule: CEO Options Grants and Opportunism," Working Paper, Stanford University.

Diamond, D., and R. Verrecchia, 1991, "Disclosure, Liquidity, and the Cost of Capital," *Journal of Finance*, 46, 1325–1359.

Dimitrov, V., and P. C. Jain, 2011, "It's Showtime: Do Managers Report Better News Before Annual Shareholder Meetings?," *Journal of Accounting Research*, 49, 1193–1221.

Edmans, A., V. Fang, and K. Lewellen, 2014, "Equity Vesting and Managerial Myopia," Working Paper, London Business School.

Faure-Grimaud, A., and D. Gromb, 2004, "Public Trading and Private Incentives," *Review of Financial Studies*, 17, 985–1014.

Fos, V., and W. Jiang, 2014, "Out-Of-The-Money CEOs: Inferring Private Control Premium from CEO Option Exercise," Working Paper, University of Illinois at Urbana-Champaign.

Frydman, C., and D. Jenter, 2010, "CEO Compensation," *Annual Review of Financial Economics*, 2, 75–102.

Gopalan, R., T. Milbourn, F. Song, and A. Thakor, 2014, "Duration of Executive Compensation," *Journal of Finance*, forthcoming.

Hall, B., and J. Liebman, 1998, "Are CEOs Really Paid Like Bureaucrats?," *Quarterly Journal of Economics*, 113, 653–691.

Hall, B., and K. Murphy, 2002, "Stock Options for Undiversified Executives," *Journal of Accounting and Economics*, 33, 3–42.

Kahl, M., J. Liu, and F. Longstaff, 2003, "Paper Millionaires: How Valuable Is Stock to a Stockholder Who Is Restricted from Selling It?," *Journal of Financial Economics*, 67, 385–410.

Ladika, T., and Z. Sautner, 2013, "Managerial Short-Termism and Investment: Evidence from Accelerated Option Vesting," Working Paper, University of Amsterdam.

Lilienfeld-Toal, U. V., and S. Ruenzi, 2014, "CEO Ownership, Stock Market Performance, and Managerial Discretion," *Journal of Finance*, 69, 1013–1050.

Meulbroek, L., 1992, "An Empirical Analysis of Illegal Insider Trading," *Journal of Finance*, 47, 1661–1699.

Nagar, C., D. Nanda, and P. Wysocki, 2003, "Discretionary Disclosure and Stock-Based Incentives," *Journal of Accounting and Economics*, 34, 283–309.

Neuhierl, A., A. Scherbina, and B. Schlusche, 2013, "Market Reaction to Corporate Press Releases," *Journal of Financial and Quantitative Analysis*, 48, 1207–1240.

Nichols, D. C., 2009, "Proprietary Costs and Other Determinants of Nonfinancial Disclosures," Working Paper, Cornell University.

Noe, C., 1999, "Voluntary Disclosures and Insider Transactions," *Journal of Accounting and Economics*, 27, 305–326.

Penman, S., 1982, "Insider Trading and the Dissemination of Firms' Forecast Information," *Journal of Business*, 55, 479–503.

Scherbina, A., and B. Schlusche, 2013, "Economic Linkages Inferred from News Stories and the Predictability of Stock Returns," Working Paper, University of California Davis.

Smukler, R., 2009, "Executive Compensation: Further Investigation Into Option Award Vesting Dates," Unpublished Manuscript, New York University.

Yermack, D., 1997, "Good Timing: CEO Stock Option Awards and Company News Announcements," *Journal of Finance*, 52, 449–476.

——— , 2014, "Tailspotting: Identifying and Profiting from CEO Vacation Trips," *Journal of Financial Economics*, 113, 252–269.

Table 1: Sample Statistics

This table reports the summary statistics for the main variables used in this study. The data on vesting schedules is hand-collected from proxy statements (options) and Insider Trading filings (restricted stock) for S&P 500 firms for 1994-2005. For 2006-2011, vesting schedules are extracted from the Equilar database, which covers Russell 3000 firms. The data on insiders' transactions is extracted from Thomson Reuters Insider Trading filings (SEC Form 4), and the data on firm and stock characteristics comes from Compustat and CRSP, respectively. Data on corporate news events is from the Capital IQ database, which covers 2002-2011. Data on the tone of media coverage is from Thomson Reuters News Analytics, which covers 2003-2011.

PANEL A: Equity Granted, CEO Incentives, News Events, and Stock/Firm Characteristics

	Obs	Mean	Median	STD	Skewness	Kurtosis	1st Pctile	25th Pctile	75th Pctile	99th Pctile
Stock Grants:										
Vesting Period	10,877	3.42	3.00	1.22	1.44	13.59	1.00	3.00	4.00	7.00
Value Granted (millions)	10,877	1.06	0.70	0.95	0.00	0.00	0.01	0.26	1.74	2.73
% Cliff	10,877	0.37	0.00	0.48	0.54	1.29	0.00	0.00	1.00	1.00
Option Grants:										
Vesting Period	14,947	3.61	4.00	1.13	0.59	7.64	1.00	3.00	4.00	6.33
Value Granted (millions)	14,947	0.45	0.23	0.51	0.00	0.00	0.00	0.07	0.67	1.52
% Cliff	14,947	0.15	0.00	0.36	1.93	4.73	0.00	0.00	0.00	1.00
CEO Incentives:										
$VestedSensitivity$ (dollar units)	65,400	13,594	3,982	39,730	15.39	380.97	0	2	13,095	139,444
$VestingSensitivity$ (dollar units)	35,100	16,000	3,328	48,000	9	173	0	750	12,000	230,000
$UnvestedSensitivity$ (dollar units)	114,000	26,000	8,075	51,000	5	42	1	1,778	27,000	260,000
Corporate News Events (Excluding No-News Months):										
All News	51,100	4.02	3	3.52	8.65	192.05	1	2	5	14
Discretionary News	48,100	3.53	3	3.40	10.15	235.01	1	2	4	13
Corporate News Events (Including No-News Months):										
All News	115,000	1.79	0	3.09	7.05	163.89	0	0	3	11
Discretionary News	115,000	1.48	0	2.81	8.98	235.97	0	0	2	10
Stock Characteristics:										
Return	100,287	0.011	0.006	0.164	7.61	485.97	-0.374	-0.064	0.075	0.488
Trading Volume	99,407	0.217	0.160	0.224	7.62	189.19	0.012	0.092	0.269	1.034
News Coverage	105,047	3.908	3.85	0.992	0.48	4.262	1.609	3.332	4.407	6.759
Number of Analysts Following	103,330	7.953	6	6.072	1.328	4.876	1	3	11	28
Firm Characteristics:										
Market Capitalization (millions)	114,000	3,700	720	15,000	13	213	19	250	2,200	54,000
Earnings Surprise	100,417	0.22	0	1.22	2.90	17.36	-3.54	0	0	7
Tone of Media Coverage:										
Positive Score	850,932	0.359	0.232	0.275	0.615	1.913	0.046	0.164	0.563	0.856
Neutral Score	850,932	0.381	0.318	0.262	0.673	2.230	0.112	0.137	0.589	0.926
Negative Score	850,932	0.260	0.162	0.267	1.016	2.577	0.007	0.041	0.404	0.819
Positive TWN	115,000	2.08	0.595	5.33	10.83	208.35	0	0	2.25	21.83
Neutral TWN	115,000	2.04	0.595	5.65	9.32	151.42	0	0	1.92	27.03
Negative TWN	115,000	1.51	0.224	5.78	24.54	1,219.05	0	0	1.35	18.13

Table 1: Continued

PANEL B: Equity Vesting and CEO Equity Sales

	Obs	Mean	Median	STD	Skewness	Kurtosis	1st Pctile	25th Pctile	75th Pctile	99th Pctile
Monthly Calculations (All Months):										
VestingMonth Dummy	114,623	0.16	0.00	0.37	1.83	4.33	0.00	0.00	0.00	1.00
SalesMonth Dummy	114,623	0.09	0.00	0.28	2.92	9.53	0.00	0.00	0.00	1.00
Average Number of Trades	10,028	5.44	1.00	18.21	9.59	143.48	1.00	1.00	3.00	84.00
Vesting Quantity (Stock and Options) [000's]	114,623	14.73	0.00	174.35	136.70	23,000.00	0.00	0.00	0.00	266.90
Vesting Quantity (Stock Only) [000's]	114,623	3.52	0.00	37.66	94.41	14,000.00	0.00	0.00	0.00	81.00
Vesting Quantity (Options Only) [000's]	114,623	11.20	0.00	168.78	149.61	26,000.00	0.00	0.00	0.00	225.98
Vesting Value (Stock and Options) [000's]	114,385	291.44	0.00	2,110.12	26.27	1,381.99	0.00	0.00	0.00	6,183.08
Average Quantity Traded [000's]	114,623	3.98	0.00	55.57	95.89	14,000.00	0.00	0.00	0.00	85.78
Average Value Traded [000's]	114,385	114.79	0.00	1,581.97	99.85	16,000.00	0.00	0.00	0.00	2,581.89
Deep-OTM Options at Vesting (=1)	10,900	0.757	1	0.333	-0.853	2.048	0.051	0.44	1	1
Monthly Calculations (Non-Zero Months Only):										
Average Number of Trades	10,028	5.44	1.00	18.21	9.59	143.48	1.00	1.00	3.00	84.00
Vesting Quantity (Stock and Options) [000's]	18,682	90.34	35.33	423.90	57.82	4,001.19	0.51	12.50	93.75	750.00
Vesting Quantity (Stock Only) [000's]	10,362	38.95	16.00	119.61	31.68	1498.19	0.33	6.25	39.33	333.33
Vesting Quantity (Options Only) [000's]	13,312	96.47	41.25	486.89	53.13	3,219.40	1.00	16.31	100.00	758.33
Vesting Value (Stock and Options) [000's]	18,641	1,788.34	473.75	4,964.49	11.45	262.44	3.92	146.66	1,474.83	21,000.00
Average Quantity Traded [000's]	10,028	45.54	13.13	182.77	30.11	1,373.40	0.16	4.45	40.00	480.00
Average Value Traded [000's]	10,025	1,309.73	287.90	5,195.41	31.47	1,584.53	2.42	77.31	1,036.58	15,000.00
Yearly Calculations (Non-Zero Vesting or Non-Zero Trading Only):										
Number of Vesting Months	1,287	3.11	2.00	3.47	3.53	19.41	1.00	1.00	3.00	19.00
Number of Trading Months	721	4.23	3.00	4.07	2.94	16.43	1.00	2.00	5.00	20.00
Vesting Quantity [000's]	1,287	255.94	101.09	518.70	7.41	86.14	1.15	37.99	266.78	2,426.83
Vesting Value [000's]	1,286	5,179.85	1,890.67	14,467.40	6.39	58.60	23.14	677.89	5,435.41	49,000.00
Average Quantity Traded [000's]	721	166.71	65.62	340.14	6.90	74.26	0.81	20.39	179.00	1,623.78
Average Value Traded [000's]	721	5,436.13	1,808.97	9,322.94	4.57	29.76	17.16	454.71	5,333.94	63,000.00

Table 2: Time from Vesting to First Sale and to Full Sale

This table reports the distance between the month of equity vesting and the month of the first observed sale of the CEO (Panel A), as well as the time it takes the CEO to sell all the equity that vested in the most recent vesting month (Panel B). The data on equity vesting is extracted from Equilar (for Russell 3000 firms for 2006-2011) and hand-collected from SEC Form 4 and proxy statements (for S&P500 firms for 1994-2005). The data on CEO trading is extracted from Thomson Financial Insider Trading filings (SEC Form 4). In Panel A we present the results for stock and options separately. In Panel B, we aggregate equity sales that are the result of either stock or option vesting. We show the frequency of observations and their respective percentages.

	PANEL A: First Sale				PANEL B: Full Sale	
	Stock		Options		Stock and Options	
# Months	Freq.	Perc.	Freq.	Perc.	Freq.	Perc.
0	3,787	52	3,369	34	1,759	17
1	567	8	833	8	669	7
2	311	4	555	6	435	4
3	267	4	468	5	440	4
4	210	3	350	3	303	3
5	172	2	319	3	286	3
6	176	2	345	3	350	3
7	147	2	261	3	266	3
8	130	2	236	2	217	2
9	140	2	281	3	293	3
10	158	2	311	3	331	3
11	158	2	275	3	302	3
12	248	3	386	4	745	7
13	86	1	154	2	291	3
14	43	1	114	1	185	2
15	41	1	111	1	172	2
16	37	1	86	1	124	1
17	29	0	69	1	123	1
18	28	0	85	1	152	1
>18	482	7	1,419	14	2,712	27

Table 3: Equity Vesting and CEO Sales

This table reports the results on the relationship between CEO equity sales and equity vesting months. The dependent variable is $SalesMonth$ in columns (1) and (2), and $SalesAll$ in columns (3) and (4). The variable $VestingMonth$ is an indicator function that equals one if an equity grant vests in a given month. The variables $MonthBefore$ and $MonthAfter$ indicate the months before and after the vesting month. Controls are described in Appendix A. t-statistics are in parentheses, standard errors are clustered at the firm level, and $*$, $**$, and $***$ represent significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable:	*SalesMonth*		*SalesAll*	
	Stocks (1)	Options (2)	Stocks (3)	Options (4)
MonthBefore	0.0073*	-0.0018	-0.0053**	-0.0053**
	(1.77)	(-0.53)	(-2.10)	(-2.54)
VestingMonth	0.2185***	0.1123***	0.1386***	0.0673***
	(28.92)	(20.15)	(27.57)	(18.59)
MonthAfter	0.0137***	0.0053	0.0184***	0.0082***
	(3.30)	(1.56)	(6.46)	(3.67)
EAYearly	0.0274***	0.0373***	0.0124***	0.0191***
	(5.32)	(6.78)	(3.65)	(5.42)
EAQuarterly	-0.0033	-0.0045**	-0.0023*	-0.0030**
	(-1.50)	(-1.97)	(-1.80)	(-2.35)
AGM	0.0149***	0.0179***	0.0066**	0.0086***
	(3.51)	(4.06)	(2.46)	(3.07)
Board	0.0146	0.0168	-0.001	0.0005
	(1.23)	(1.43)	(-0.15)	(0.08)
EarningsSurprise	0.0047***	0.0046***	0.0020***	0.0020***
	(5.26)	(5.19)	(3.45)	(3.42)
PastReturn	0.0217***	0.0214***	0.0051***	0.0049***
	(8.07)	(7.94)	(4.74)	(4.48)
Log(1+*VestedSensitivity*)	-6.8885**	-1.522	-5.9537**	-2.4641**
	(-1.97)	(-0.68)	(-2.37)	(-2.30)
Log(1+*UnvestedSensitivity*)	-0.0001	0.0004***	0.0001	0.0004***
	(-0.23)	(3.96)	(0.55)	(4.52)
Constant	0.0679**	0.0606	-0.0129	-0.0175
	(1.98)	(1.61)	(-0.88)	(-0.94)
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
Observations	100,727	100,727	100,727	100,727
R-squared	0.2021	0.1761	0.0987	0.0698

Table 4: Timing of News Events Around the Vesting Month

This table reports the Poisson regression on the relationship between the count of corporate news releases and vesting months. The dependent variable $NewsEvents$ is the count of corporate news releases. In Panel A, our main independent variable ($VestingMeasure$) is an indicator function that equals one if a particular month is a vesting month (*VestingMonth*), and zero otherwise. We also include the months surrounding the vesting month, using the functions $MonthBefore$ and $MonthAfter$ indicating the months before and after vesting, respectively. In Panel B, our main independent variable ($VestingMeasure$) is the sensitivity of newly-vesting equity to changes in the stock price (Log(1+*VestingSensitivity*)). Controls are described in Appendix A. t-statistics are in parentheses, and $*$, $**$, and $***$ represent significance at the 10%, 5%, and 1% levels, respectively.

PANEL A: Vesting Month Dummy as Main Independent Variable				
Dependent Variable: *NewsEvents*	Discretionary (1)	Non-Discretionary (2)	Discretionary (3)	Non-Discretionary (4)
MonthBefore	-0.0329***	-0.0903***	-0.0329***	-0.0903***
	(-4.38)	(-4.95)	(-4.39)	(-4.95)
VestingMonth	0.0356***	-0.012	0.0369***	-0.0112
	(4.88)	(-0.71)	(5.02)	(-0.66)
MonthAfter	-0.0137*	-0.1153***	-0.0135*	-0.1151***
	(-1.89)	(-6.31)	(-1.86)	(-6.30)
EAYearly	0.0512***	0.5488***	0.0511***	0.5488***
	(4.74)	(25.11)	(4.73)	(25.10)
EAQuarterly	0.3014***	1.0284***	0.3015***	1.0283***
	(58.54)	(105.20)	(58.55)	(105.17)
AGM	0.1118***	1.1847***	0.1118***	1.1846***
	(11.49)	(66.76)	(11.49)	(66.76)
Board	0.5327***	0.0942**	0.5327***	0.0944**
	(26.26)	(1.99)	(26.26)	(1.99)
EarningsSurprise	0.0036*	0.0349***	0.0036*	0.0349***
	(1.90)	(10.00)	(1.90)	(10.00)
Analyst	0.0148***	-0.001	0.0147***	-0.001
	(12.06)	(-0.33)	(12.06)	(-0.33)
PastReturn	-0.0289	-0.1011**	-0.0291	-0.1011**
	(-1.58)	(-2.54)	(-1.60)	(-2.54)
Log(1+*VestedSensitivity*)			-16.8927	8.1697
			(-1.02)	(0.31)
Log(1+*UnvestedSensitivity*)			-0.0003	-0.0008
			(-1.06)	(-0.64)
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
Observations	57,576	54,168	57,576	54,168

Table 4: Continued

PANEL B: Sensitivity of Newly-Vested Equity as Main Independent Variable				
Dependent Variable: *NewsEvents*	Discretionary (1)	Non-Discretionary (2)	Discretionary (3)	Non-Discretionary (4)
Log(1+*VestingSensitivity*)	0.0037***	-0.0015	0.0037***	-0.0015
	(4.33)	(-0.75)	(4.40)	(-0.71)
EAYearly	0.0458***	0.5289***	0.0457***	0.5289***
	(4.28)	(24.57)	(4.27)	(24.57)
EAQuarterly	0.3012***	1.0322***	0.3012***	1.0321***
	(58.68)	(105.81)	(58.69)	(105.79)
AGM	0.1143***	1.1887***	0.1144***	1.1886***
	(11.78)	(67.16)	(11.78)	(67.16)
Board	0.5318***	0.0964**	0.5318***	0.0966**
	(26.25)	(2.04)	(26.25)	(2.04)
EarningsSurprise	0.0034*	0.0349***	0.0034*	0.0349***
	(1.82)	(9.99)	(1.82)	(10.00)
Analyst	0.0151***	-0.0006	0.0151***	-0.0006
	(12.39)	(-0.22)	(12.39)	(-0.21)
PastReturn	-0.0293	-0.1014**	-0.0295	-0.1013**
	(-1.61)	(-2.55)	(-1.62)	(-2.55)
Log(1+*VestedSensitivity*)			-13.7145	8.9517
			(-0.84)	(0.34)
Log(1+*UnvestedSensitivity*)			-0.0003	-0.0009
			(-0.90)	(-0.73)
Firm Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
Observations	57,792	54,359	57,792	54,359

Table 5: News Releases and Equity Sales

This table reports the results of an instrumental variables (IV) Poisson regression estimated via GMM. The dependent variable is the same as in Table 4 (i.e. *NewsEvents*). We relate corporate news releases with months in which the CEO sells equity. We instrument the endogenous regressor *SalesMonth* using *VestingMonth* which results in the instrumented variable $\widehat{SalesMonth}$. Controls are described in Appendix A. We also control for year and month fixed effects. We allow for heteroskedasticity of the errors, and we cluster the errors by firm. t-statistics are in parentheses and $*$, $**$, and $***$ represent significance at the 10%, 5%, and 1% levels, respectively.

Methodology: Dependent Variable:	IV Poisson GMM Discretionary (1)	IV Poisson GMM Non-Discretionary (2)
$\widehat{SalesMonth}$	0.2788***	-0.1451
	(3.20)	(-1.01)
EAYearly	-0.0113	0.6784***
	(-0.52)	(18.67)
EAQuarterly	0.3530***	0.8481***
	(31.11)	(20.56)
AGM	0.1687***	1.2456***
	(8.17)	(47.10)
Board	0.9674***	0.5798***
	(32.50)	(8.43)
EarningsSurprise	0.0277***	0.0358***
	(5.89)	(6.88)
Analyst	0.0485***	0.0001
	(50.10)	(0.10)
PastReturn	0.0159	-0.044
	(0.42)	(-0.98)
Log(1+*VestedSensitivity*)	-31.2416	-19.0934
	(-1.05)	(-0.79)
Log(1+*UnvestedSensitivity*)	0.0007**	-0.0001
	(2.03)	(-0.12)
Firm Fixed Effects	No	No
Year Fixed Effects	Yes	Yes
Month Fixed Effects	Yes	Yes
Observations	101,149	101,149

Table 6: Tone of Media Coverage

This table reports the results of an event-study on the effect of corporate news releases on the tone of subsequent media coverage. We denote by DV and DNV the discretionary news released in vesting and non-vesting months, respectively. Similarly, we denote by NDV and NDNV the non-discretionary news that released in vesting and non-vesting months, respectively. The dependent variable is the proportion of positive (columns (1)-(3)), neutral (columns (4)-(6)), negative (columns (7)-(9)), or positive minus negative (columns (10)-(12)) words in a [0,1], [0,15], and [0,30] window in excess of their respective averages over [-300,-46]. These proportions are calculated from the Thomson Reuters News Analytics database. Below Panel B, we test for the difference in the tone of media coverage between vesting and non-vesting months, after the release of discretionary (DV-DNV) and non-discretionary (NDV-NDNV) news. Controls are described in Appendix A. t-statistics are in parentheses, and $*$, $**$, and $***$ represent significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Univariate Analysis

	Positive Score			Neutral Score			Negative Score			Positive-Negative		
	[0, 1] (1)	[0, 15] (2)	[0, 30] (3)	[0, 1] (4)	[0, 15] (5)	[0, 30] (6)	[0, 1] (7)	[0, 15] (8)	[0, 30] (9)	[0, 1] (10)	[0, 15] (11)	[0, 30] (12)
Vesting Months:												
Discretionary (DV)	0.0092***	0.0151***	0.0039***	-0.0088***	-0.0172***	-0.0044***	-0.0004	0.0021**	0.0005	0.0096***	0.0131***	0.0034***
	(5.91)	(13.18)	(6.35)	(-6.64)	(-18.21)	(-8.42)	(-0.28)	(2.02)	(0.90)	(3.65)	(6.67)	(3.27)
Non-Discretionary (NDV)	-0.0043	0.0055***	0.0030***	-0.0044*	-0.0106***	-0.0022**	0.0087***	0.0051***	-0.0009	-0.0131***	0.0003	0.0039**
	(-1.63)	(2.64)	(2.67)	(-1.93)	(-6.17)	(-2.26)	(3.55)	(2.64)	(-0.84)	(-2.86)	(0.09)	(2.01)
Non-Vesting Months:												
Discretionary (DNV)	-0.0034***	0.0046***	0.0011***	0.0042***	-0.0077***	-0.0020***	-0.0008	0.0031***	0.0009***	-0.0026**	0.0015*	0.0002
	(-4.96)	(9.12)	(3.89)	(6.99)	(-18.01)	(-8.41)	(-1.33)	(6.83)	(3.73)	(-2.30)	(1.78)	(0.37)
Non-Discretionary (NDNV)	-0.0069***	0.0046***	0.0025***	0.0041***	-0.0056***	-0.0002	0.0029***	0.001	-0.0023***	-0.0098***	0.0036**	0.0048***
	(-5.68)	(4.87)	(4.79)	(3.83)	(-7.12)	(-0.40)	(2.58)	(1.18)	(-4.93)	(-4.68)	(2.21)	(5.39)

Panel B: Multivariate Analysis

	Positive Score			Neutral Score			Negative Score			Positive-Negative		
	[0, 1] (1)	[0, 15] (2)	[0, 30] (3)	[0, 1] (4)	[0, 15] (5)	[0, 30] (6)	[0, 1] (7)	[0, 15] (8)	[0, 30] (9)	[0, 1] (10)	[0, 15] (11)	[0, 30] (12)
DV	0.0092***	0.0152***	0.0040***	-0.0088***	-0.0172***	-0.0044***	-0.0003	0.0020**	0.0005	0.0095***	0.0131***	0.0035***
	(5.92)	(13.20)	(6.32)	(-6.59)	(-17.91)	(-8.31)	(-0.23)	(1.98)	(0.86)	(3.65)	(6.69)	(3.28)
NDV	-0.0066**	0.0044**	0.0029***	-0.0036	-0.0112***	-0.0028***	0.0102***	0.0068***	-0.0001	-0.0168***	-0.0024	0.003
	(-2.48)	(2.20)	(2.67)	(-1.53)	(-6.70)	(-3.02)	(4.29)	(3.79)	(-0.10)	(-3.74)	(-0.70)	(1.63)
DNV	-0.0035***	0.0046***	0.0011***	0.0042***	-0.0077***	-0.0020***	-0.0008	0.0031***	0.0009***	-0.0027**	0.0016*	0.0002
	(-4.98)	(8.88)	(3.88)	(6.98)	(-17.63)	(-8.22)	(-1.21)	(6.53)	(3.51)	(-2.33)	(1.76)	(0.45)
NDNV	-0.0089***	0.0037***	0.0023***	0.0050***	-0.0062***	-0.0007	0.0038***	0.0025***	-0.0016***	-0.0127***	0.0012	0.0039***
	(-6.29)	(3.52)	(4.03)	(4.11)	(-7.02)	(-1.53)	(3.07)	(2.62)	(-3.06)	(-5.37)	(0.68)	(4.00)
EADay	-0.0005	-0.0009	0.0012	-0.0077***	-0.0003	0	0.0082***	0.0011	-0.0013	-0.0086*	-0.002	0.0025
	(-0.17)	(-0.41)	(1.10)	(-3.19)	(-0.15)	(0.03)	(3.32)	(0.60)	(-1.26)	(-1.86)	(-0.56)	(1.31)
AGMDay	0.0203***	0.0108***	-0.0006	0.0054*	0.0054**	0.0056***	-0.0257***	-0.0162***	-0.0049***	0.0460***	0.0270***	0.0043*
	(5.60)	(4.00)	(-0.43)	(1.72)	(2.42)	(4.44)	(-8.00)	(-6.70)	(-3.77)	(7.56)	(5.87)	(1.73)
BoardDay	0.0073	-0.0065	-0.0060*	0.0024	0.0052	0.0037	-0.0098	0.0013	0.0023	0.0171	-0.0078	-0.0082
	(0.87)	(-1.04)	(-1.74)	(0.33)	(0.99)	(1.25)	(-1.30)	(0.24)	(0.75)	(1.21)	(-0.73)	(-1.42)
Observations	170,371	170,371	170,371	170,371	170,371	170,371	170,371	170,371	170,371	170,371	170,371	170,371
Test: DV-DNV=0	0.0127	0.0106	0.0029	-0.013	-0.0095	-0.0024	0.0005	-0.0011	-0.0004	0.0122	0.0115	0.0033
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.77	0.50	0.00	0.00	0.01
Test: NDV-NDNV=0	0.0023	0.0007	0.0006	-0.0086	-0.005	-0.0021	0.0064	0.0043	0.0015	-0.0041	-0.0036	-0.0009
p-value	0.42	0.74	0.61	0.00	0.01	0.04	0.01	0.03	0.15	0.40	0.33	0.65

Table 7: Reactions to News Events in the Vesting Month

This table reports the results of an event-study on the effect of corporate news releases on subsequent stock returns and trading volume. We denote by DV and DNV the discretionary news released in vesting and non-vesting months, respectively. Similarly, we denote by NDV and NDNV the non-discretionary news that released in vesting and non-vesting months, respectively. We use a [0,1], [0,15], and [0,30] window. The cumulative abnormal return is the raw buy-and-hold return adjusted using a beta estimated over [-300,-46] with a market model. The average daily abnormal trading volume is in excess of its average value in the period [-70,-31], and excludes the CEO's own trades. Panel A reports a univariate analysis, and Panel B reports a multivariate analysis that controls for other newsworthy events, described in Appendix A. Below Panel B, we test for the difference in the the stock price and volume reactions between vesting and non-vesting months, after the release of discretionary (DV-DNV) and non-discretionary (NDV-NDNV) news. t-statistics are in parentheses, and $*$, $**$, and $***$ represent significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Univariate Analysis

	Abnormal Returns (Basis Points)			Abnormal Trading Volume (Percent)		
	[0, 1]	[0, 15]	[0, 30]	[0, 1]	[0, 15]	[0, 30]
	(1)	(2)	(3)	(4)	(5)	(6)
Vesting Months:						
Discretionary (DV)	25.00***	27.78***	14.26*	0.3191***	0.0335***	-0.0021
	(7.93)	(4.54)	(1.69)	(31.53)	(7.47)	(-0.51)
Non-Discretionary (NDV)	28.01***	32.91***	18.54	0.6345***	0.0984***	0.0319***
	(4.16)	(2.73)	(1.15)	(39.29)	(13.00)	(4.69)
Non-Vesting Months:						
Discretionary (DNV)	17.27***	30.62***	22.26***	0.2730***	0.0229***	-0.0069***
	(11.26)	(11.15)	(5.88)	(57.94)	(10.73)	(-3.67)
Non-Discretionary (NDNV)	21.79***	54.26***	52.81***	0.6445***	0.1042***	0.0339***
	(6.67)	(9.41)	(6.79)	(71.45)	(25.50)	(9.63)

Panel B: Multivariate Analysis

	Abnormal Returns (Basis Points)			Abnormal Trading Volume (Percent)		
	[0, 1]	[0, 15]	[0, 30]	[0, 1]	[0, 15]	[0, 30]
	(1)	(2)	(3)	(4)	(5)	(6)
DV	25.01***	27.85***	14.64*	0.3198***	0.0334***	-0.0019
	(7.00)	(4.39)	(1.69)	(29.71)	(7.08)	(-0.46)
NDV	24.85***	24.04**	10.94	0.6546***	0.0984***	0.0308***
	(3.94)	(2.15)	(0.72)	(34.43)	(11.80)	(4.21)
DNV	17.33***	30.55***	22.16***	0.2723***	0.0225***	-0.0069***
	(10.69)	(10.61)	(5.64)	(55.76)	(10.48)	(-3.66)
NDNV	17.37***	43.77***	42.42***	0.6549***	0.1024***	0.0320***
	(5.17)	(7.34)	(5.22)	(64.75)	(23.08)	(8.22)
EADay	25.02***	63.19***	74.24***	0.2100***	0.0437***	0.0227***
	(3.75)	(5.34)	(4.60)	(10.46)	(4.96)	(2.94)
AGMDay	-7.88	-21.05	-47.67**	-0.5368***	-0.0731***	-0.0263***
	(-0.90)	(-1.36)	(-2.26)	(-20.43)	(-6.34)	(-2.60)
BoardDay	-23.94	18.89	15.03	-0.0896	0.0611**	0.0495**
	(-1.12)	-0.50	-0.29	(-1.40)	(2.17)	(2.00)
Observations	183,826	183,793	183,755	183,825	183,787	183,745
Test: DV-DNV=0	7.68	-2.7	-7.52	0.0475	0.0109	0.005
p-value	0.05	0.68	0.41	0.00	0.03	0.29
Test: NDV-NDNV=0	7.48	-19.73	-31.48	-0.0003	-0.004	-0.0012
p-value	0.31	0.07	0.04	0.67	0.55	0.86

Table 8: Robustness Tests

This table reports the results of robustness tests to alternative samples and measurement choices. In Panel A, our main independent variable is an indicator function that equals one if a particular month is a vesting month (*VestingMonth*), and zero otherwise. Column (1) restricts our sample to firms that were part of the S&P 500 at some point over 1994-2011. Column (2) restricts our sample to firms covered in the Equilar database, which covers Russell 3000 firms over 2006-2011. Column (3) controls for grant award months. Column (4) runs a placebo test that uses a pseudo-vesting month that is 6 months after the actual vesting month. Column (5) excludes all equity-based grants with a performance-based vesting provision. Column (6) considers restricted stock only, and column (7) considers options only. Column (8) redefines a vesting month as a month in which either stock and/or in-the-money options vest, excluding the cases in which only out-the-money options vest. In column (9) we replace the calendar year and month dummies, with their fiscal equivalents. In column (10) we take earnings announcements as being discretionary instead of non-discretionary. In Panel B, our main independent variable is the sensitivity of newly-vesting equity to changes in the stock price (Log(1+*VestingSensitivity*)). The specifications presented in Panel B are similar to those in Panel A, except that we use Log(1+*GrantSensitivity*) instead of *GrantMonth* in column (3), and in column (4) we replace option deltas with their intrinsic values of 0 for out-the-money options and 1 for in-the-money options, with which we create the variable Log(1+*VestingSensitivityAdjusted*). t-statistics are in parentheses, and $*$, $**$, and $***$ represent significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Vesting Month Indicator

	S&P500 (1)	Equilar (2)	Grant (3)	Placebo (4)	Performance (5)	Stock (6)	Options (7)	ITM=1 (8)	Fiscal (9)	Earnings (10)
MonthBefore	-0.0268***	-0.0331***	-0.0324***		-0.0338***	-0.0091	-0.0169	-0.0338***	-0.0351***	-0.0233***
	(-2.67)	(-4.41)	(-4.31)		(-4.39)	(-0.67)	(-1.54)	(-4.14)	(-4.78)	(-3.05)
VestingMonth	0.0350***	0.0364***	0.0240***		0.0381***	0.0391***	0.0464***	0.0318***	0.0338***	0.0343***
	(3.57)	(4.96)	(3.14)		(5.08)	(2.89)	(4.40)	(4.00)	(4.71)	(4.59)
MonthAfter	-0.0214**	-0.0140*	-0.0141*		-0.0188**	-0.0146	-0.0066	0.0000	-0.0152**	-0.0181**
	(-2.22)	(-1.92)	(-1.95)		(-2.53)	(-1.11)	(-0.62)	(-0.58)	(-2.13)	(-2.43)
PseudoVestingMonth				0.0119						
				(1.52)						
Fixed Effects (Firm+Year+Month)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	No	*GrantMonth*	No	No	No	No	No	No	No
Number of Observations	21,504	57,461	57,576	50,198	57,576	57,576	57,576	57,576	57,576	57,576

Panel B: Vesting Sensitivity

	S&P500 (1)	Equilar (2)	Grant (3)	Sensitivity (4)	Performance (5)	Stock (6)	Options (7)	ITM=1 (8)	Fiscal (9)	Earnings (10)
Log(1+*VestingSensitivity*)	0.0027***	0.0037***	0.0033***		0.0039***	0.0053***	0.0046***	0.0034***	0.0035***	0.0026***
	(2.72)	(4.37)	(3.94)		(4.44)	(3.33)	(3.53)	(3.92)	(4.11)	(3.54)
Log(1+*VestingSensitivityAdjusted*)				0.0034***						
				(3.92)						
Fixed Effects (Firm+Year+Month)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls	No	No	Log(1+*GrantSensitivity*)	No	No	No	No	No	No	No
Number of Observations	21,583	57,672	57,792	57,792	57,792	57,792	57,792	57,792	57,726	45,512

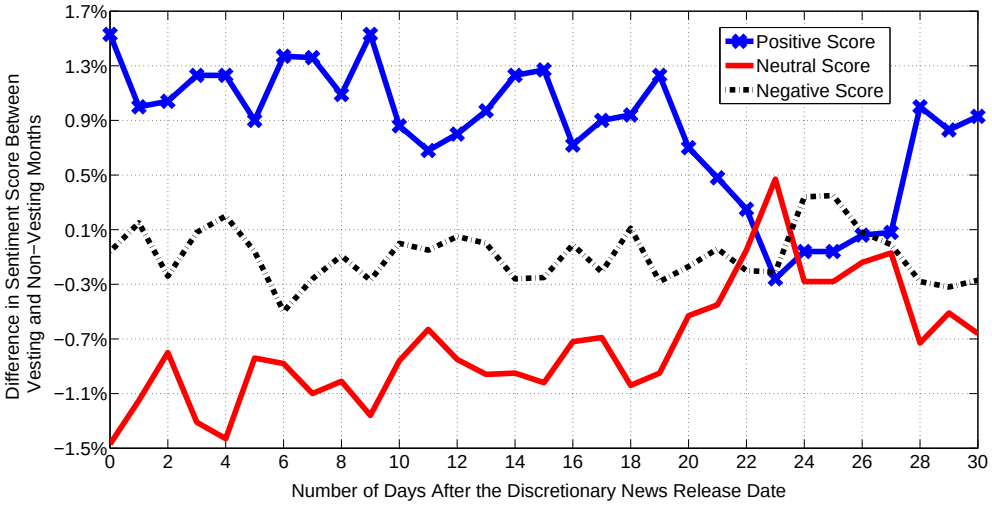


Figure 1: Tone of Media Coverage After Discretionary News Releases

This figure shows the difference between vesting and non-vesting months regarding the tone of media coverage after the release of discretionary news. We show the differences in average positive, neutral, and negative sentiment scores of the media articles, as reported in the Thomson Reuters News Analytics database over [0,30] in excess of the average score over [-300,-46].

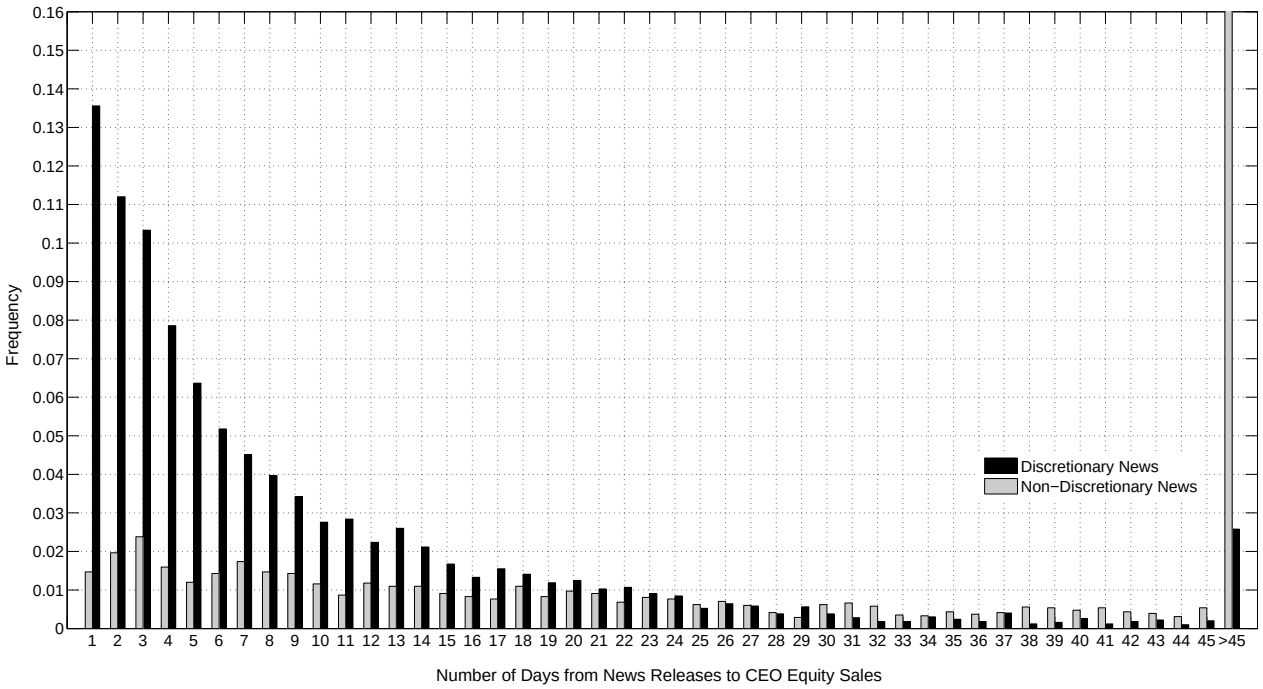


Figure 2: Number of Days from News Releases to CEO Sales

This figure reports the distribution of the number of trading days between the date of the release of corporate news and the first observed equity sale of the CEO. We consider news releases in vesting months, and show the results separately for discretionary and non-discretionary news items. We truncate the y-axis at 0.16 for better visualization of the graph. The frequency bar for non-discretionary news for more than 45 days between the release of news and the first CEO sale (> 45), has a value of 0.61. News items are obtained from the Capital IQ database, which covers 2002-2011. We consider only discretionary news that is released within 30 days of the most recent vesting date.

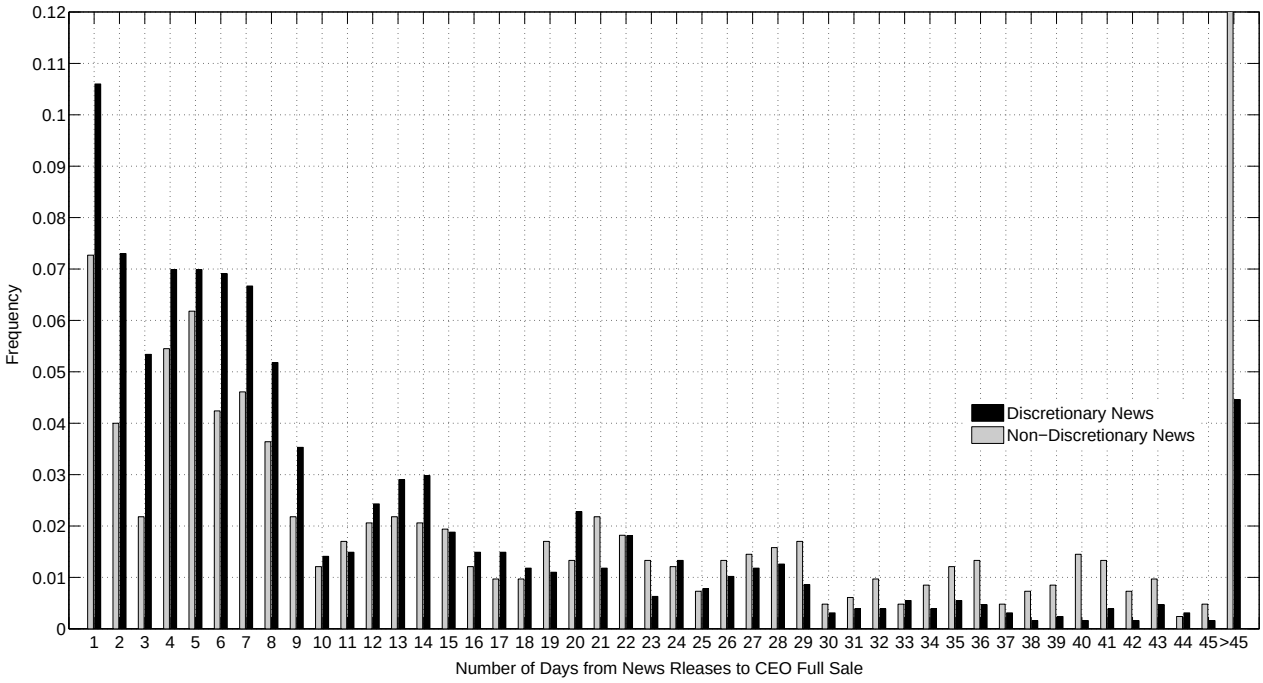


Figure 3: Number of Days from Discretionary News Releases to CEO Full Sale

This figure shows the distribution of the number of trading days between the date of the release of discretionary news and the date the CEO sells all the equity that vested in the most recent vesting month. For the purpose of this graph, we only consider discretionary news released in the 30 days after the vesting date. We truncate the y-axis at 0.12 for better visualization of the graph. The frequency bar for non-discretionary news for more than 45 days between the release of news and the CEO's full sale (> 45), has a value of 0.16.

Appendix A: Variable Definitions

Variable	Definition
AGM	is an indicator function that equals one if a particular month coincides with the firm's annual general meeting, and zero otherwise.
AGMDay	is an indicator function that equals one if a particular day coincides with the firm's annual general meeting, and zero otherwise.
Analyst	is the log of one plus the number of analysts following a particular stock. The number of analysts is obtained from the I/B/E/S files.
Board	is an indicator that equals one if a particular month coincides with a board meeting, and zero otherwise.
BoardDay	is an indicator that equals one if a particular day coincides with a board meeting, and zero otherwise.
EADay	is an indicator function that equals one if a particular day coincides with the firm's earnings announcement, and zero otherwise.
EAQuarterly	is an indicator function that equals one if a particular month coincides with the firm's announcement of quarterly earnings, and zero otherwise.
EAYearly	is an indicator function that equals one if a particular month coincides with the firm's announcement of annual earnings, and zero otherwise.
EarningsSurprise	is the earnings surprise measure (SUE) from the I/B/E/S database.
GrantMonth	is an indicator function that equals one if there is an equity grant award in that month, and zero otherwise.
Log(1+GrantSensitivity)	is the log of one plus the dollar sensitivity of the CEO's granted equity to a 100% change in the stock price.
MonthAfter	is an indicator function that equals one if a given month is immediately after a vesting month, and zero otherwise.
MonthBefore	is an indicator function that equals one if a given month is immediately prior to a vesting month, and zero otherwise.
Negative Score	is the proportion of negative words out of the total number of words of a media article in the Thomson Reuters News Analytics database.
Neutral Score	is the proportion of neutral words out of the total number of words of a media article in the Thomson Reuters News Analytics database.
NewsEvents	is the count of the number of news items released in a given month.
Positive Score	is the proportion of positive words out of the total number of words of a media article in the Thomson Reuters News Analytics database.
PseudoVestingMonth	is an indicator for a pseudo-vesting month that is exactly 6 months after the actual vesting month.
Sales	is equal either to *SalesMonth* or to *SalesAll*, defined below.

SalesAll	is an indicator function that equals one when, by a particular month, the cumulative equity sales of a CEO adds up to the amount of equity that vested in the most recent vesting month, and zero otherwise.
SalesMonth	is an indicator function that equals one if there is a CEO equity sale in a given month, and zero otherwise.
Trading Volume	is the ratio of the daily number of shares traded to the number of shares outstanding.
Log(1+UnvestedSensitivity)	is the log of one plus the dollar sensitivity of the CEO's unvested equity to a 100% change in the stock price.
Log(1+VestedSensitivity)	is the log of one plus the dollar sensitivity of the CEO's already-vested equity to a 100% change in the stock price.
VestingMonth	is the calendar month in which stock and option grants are pre-scheduled to vest according to the Equilar database and manual identification.
Log(1+VestingSensitivity)	is the dollar sensitivity of the CEO's newly-vesting equity to a 100% change in the stock price.
Log(1+VestingSensitivityAdjusted)	is the dollar sensitivity of the CEO's newly-vesting equity to a 100% change in the stock price, in which we replace option deltas with intrinsic values: we assign a value of zero for OTM options and a value of one to ITM options.

Appendix B: Distribution of Corporate News Events

Panel A: Discretionary News Items	**Percentage of All Events**	
	All Months	**Vesting Months**
Company Conference Presentations	11.936%	14.208%
Conferences	8.582%	11.962%
Earnings Calls	8.764%	9.243%
Earnings Release Date	8.291%	8.753%
Client Announcements	8.467%	7.566%
Product-Related Announcements	7.742%	7.533%
Executive/Board Changes - Other	6.202%	5.687%
Buyback Update	3.025%	3.367%
Fixed Income Offerings	3.557%	3.223%
Dividend Affirmations	3.172%	3.131%
M&A Transaction Closings	3.423%	2.645%
Shelf Registration Filings	1.696%	1.749%
M&A Transaction Announcements	2.266%	1.503%
Buybacks	1.351%	1.405%
Debt Financing Related	1.392%	1.179%
Business Expansions	1.543%	1.118%
Changes in Company Bylaws/Rules	0.804%	1.045%
Strategic Alliances	1.055%	1.025%
Lawsuits & Legal Issues	0.961%	0.801%
Dividend Increases	0.706%	0.797%
Shareholder/Analyst Calls	0.578%	0.653%
Private Placements	0.858%	0.634%
Corporate Guidance - New/Confirmed	0.581%	0.512%
Follow-on Equity Offerings	0.689%	0.490%
Seeking Acquisitions/Investments	0.320%	0.342%
Analyst/Investor Day	0.193%	0.289%
Special Calls	0.289%	0.256%
Preferred Dividend	0.228%	0.228%
M&A Calls	0.191%	0.142%
Sales/Trading Statement Calls	0.135%	0.120%
Delayed SEC Filings	0.259%	0.114%
M&A Transaction Cancelations	0.132%	0.091%
Corporate Guidance - Raised	0.149%	0.085%
Executive Changes - CFO	0.126%	0.079%
Guidance/Update Calls	0.123%	0.079%
Corporate Guidance - Lowered	0.131%	0.069%
Business Reorganizations	0.077%	0.051%
Labor-related Announcements	0.072%	0.049%
Dividend Decreases	0.023%	0.043%
Seeking to Sell/Divest	0.038%	0.039%
Executive Changes - CEO	0.066%	0.033%
Subtotal	**90.193%**	**92.339%**

(Continues on the next page)

Appendix B: Continued

Panel A: Discretionary News Items (Cont.)	Percentage of All Events	
	All Months	**Vesting Months**
Special Dividend Announced	0.031%	0.033%
Impairments/Write Offs	0.037%	0.030%
Spin-Off/Split-Off	0.047%	0.028%
Restatements of Operating Results	0.042%	0.022%
Composite Units Offerings	0.015%	0.020%
Delayed Earnings Announcements	0.022%	0.018%
Seeking Financing/Partners	0.013%	0.018%
Address Changes	0.027%	0.016%
M&A Rumors and Discussions	0.010%	0.016%
Potential Buyback	0.008%	0.008%
Dividend Initiation	0.005%	0.006%
IPOs	0.128%	0.006%
Exchange Changes	0.007%	0.004%
Fiscal Year End Changes	0.007%	0.004%
Name Changes	0.016%	0.004%
Dividend Cancellation	0.005%	0.002%
Debt Defaults	0.002%	0.000%
Legal Structure Changes	0.003%	0.000%
Structured Products Offerings	0.000%	0.000%
Ticker Changes	0.015%	0.000%
Subtotal	**0.440%**	**0.238%**
Total Discretionary	**90.633%**	**92.577%**

Panel B: Non-Discretionary News Items	Percentage of All Events	
	All Months	**Vesting Months**
Announcements of Earnings	6.085%	3.922%
Annual General Meeting	2.180%	2.521%
Board Meeting	0.349%	0.466%
Auditor Changes	0.256%	0.205%
End of Lock-Up Period	0.306%	0.183%
Delistings	0.154%	0.100%
Regulatory Agency Inquiries	0.033%	0.026%
Bankruptcy - Emergence/Exit	0.001%	0.000%
Bankruptcy - Filing	0.002%	0.000%
Bankruptcy - Other	0.003%	0.000%
Total Non-Discretionary	**9.367%**	**7.423%**
Total	**100%**	**100%**

Appendix C: Examples of Capital IQ Items for Wal-Mart in Q1 2012

GVKEY	Year	Month	Day	Event Type	Title	Source
11259	2012	1	5	Lawsuits & Legal Issues	Keller Rohrback L.L.P. Announces Preliminary Approval of Class Action Settlement against Wal-Mart St	Business Wire
11259	2012	1	5	Lawsuits & Legal Issues	Keller Rohrback L.L.P. Announces Preliminary Approval of Class Action Settlement against Wal-Mart St	Business Wire
11259	2012	1	17	Executive/Board Changes - Other	Wal-Mart Stores Inc. Announces Executive Changes	PR Newswire
11259	2012	1	17	Executive/Board Changes - Other	Wal-Mart Stores Inc. Announces Executive Changes	PR Newswire
11259	2012	1	20	Lawsuits & Legal Issues	Wal-Mart Women Plaintiffs File Expanded Texas Class Action against Wal-Mart Stores Inc	PR Newswire
11259	2012	1	20	Lawsuits & Legal Issues	Wal-Mart Women Plaintiffs File Expanded Texas Class Action against Wal-Mart Stores Inc	PR Newswire
11259	2012	2	6	Lawsuits & Legal Issues	MacroSolve, Inc. Files Patent Infringement Suit Against Wal-Mart Stores Inc	Market Wire
11259	2012	2	6	Lawsuits & Legal Issues	MacroSolve, Inc. Files Patent Infringement Suit Against Wal-Mart Stores Inc	Market Wire
11259	2012	2	9	Client Announcements	MMA Elite Supplements Powered by Muscle Pharm Corp. Available at Wal-Mart Stores	PR Newswire
11259	2012	2	9	Client Announcements	MMA Elite Supplements Powered by Muscle Pharm Corp. Available at Wal-Mart Stores	PR Newswire
11259	2012	2	16	M&A Rumors and Discussions	X5 Denies Karusel Sale Talks With Wal-Mart	Prime-Tass English-language Business Newswire
11259	2012	2	16	M&A Rumors and Discussions	X5 Denies Karusel Sale Talks With Wal-Mart	Prime-Tass English-language Business Newswire
11259	2012	2	21	Earnings Calls	Wal-Mart Stores Inc., Q4 2012 Pre Recorded Earnings Call, Feb 21, 2012	Business Wire; Company Website
11259	2012	2	21	Announcements of Earnings; Corporate Guidance - New/Confirmed	Wal-Mart Stores Inc. Announces Unaudited Consolidated Earnings Results for the Fourth Quarter and Fu	Business Wire
11259	2012	2	21	Earnings Calls	Wal-Mart Stores Inc., Q4 2012 Pre Recorded Earnings Call, Feb 21, 2012	Business Wire; Company Website
11259	2012	2	21	Announcements of Earnings; Corporate Guidance - New/Confirmed	Wal-Mart Stores Inc. Announces Unaudited Consolidated Earnings Results for the Fourth Quarter and Fu	Business Wire
11259	2012	3	1	Dividend Increases	Wal-Mart Stores Inc. Increases Annual Dividend for the Fiscal Year Ending Jan. 31, 2013	Business Wire
11259	2012	3	4	Conferences	Raymond James & Associates, Inc., Raymond James & Associates's 33rd Annual Institutional Investors C	PR Newswire; Business Wire; GlobeNewswire; Company Website; Market Wire; Regulatory News Service; SE
11259	2012	3	6	Conferences	Merrill Lynch & Co., Inc., Bank of America Merrill Lynch 2012 Consumer & Retail Conference, Mar 06,	PR Newswire; Business Wire; GlobeNewswire; Company Website
11259	2012	3	7	Company Conference Presentations	Wal-Mart Stores Inc. Presents at Raymond James & Associates's 33rd Annual Institutional Investors Co	PR Newswire; Business Wire; GlobeNewswire; Company Website; Market Wire; Regulatory News Service; SE
11259	2012	3	7	Company Conference Presentations	Wal-Mart Stores Inc. Presents at Bank of America Merrill Lynch 2012 Consumer & Retail Conference, Ma	PR Newswire; Business Wire; GlobeNewswire; Company Website
11259	2012	3	22	Lawsuits & Legal Issues	Wal-Mart Stores Inc. to Pay $2.1 Million for California Costumers	The Associated Press State & Local Wire
11259	2012	3	28	Company Conference Presentations	Wal-Mart Stores Inc. Presents at CIBC Retail and Consumer Conference, Mar-28-2012 11:30 AM	Business Wire; GlobeNewswire; Canada News Wire; Company Website; Market Wire
11259	2012	3	28	Conferences	CIBC World Markets, Inc., CIBC Retail and Consumer Conference, Mar 28, 2012	Business Wire; GlobeNewswire; Canada News Wire; Company Website; Market Wire

Appendix D: Correlation of Main Variables

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All News	(1)	1.00											
Discretionary News	(2)	0.98	1.00										
Non-Discretionary News	(3)	0.49	0.33	1.00									
SalesMonth	(4)	0.03	0.03	0.03	1.00								
VestingMonth	(5)	0.03	0.02	0.04	0.20	1.00							
EAYearly	(6)	0.07	0.04	0.15	0.09	0.23	1.00						
EAQuarterly	(7)	0.18	0.10	0.46	0.03	0.06	0.37	1.00					
AGM	(8)	0.10	0.05	0.29	0.03	0.03	-0.08	0.08	1.00				
Board	(9)	0.10	0.09	0.09	0.01	0.02	0.03	0.04	0.03	1.00			
Log(1+*VestingSensitivity*)	(10)	0.04	0.03	0.04	0.22	0.94	0.24	0.07	0.03	0.02	1.00		
Log(1+*VestedSensitivity*)	(11)	0.08	0.09	0.01	0.05	0.01	0.00	0.02	0.00	0.00	0.04	1.00	
Log(1+*UnvestedSensitivity*)	(12)	0.10	0.11	0.02	0.08	0.04	-0.02	0.02	0.03	-0.01	0.10	0.35	1.00

Appendix E: Distribution of Events in the Calendar Year

	VestingMonth	*EAYearly*	*EAQuarterly*	*AGM*	*Board*	*GrantMonth*
January	11.9%	16.7%	6.2%	1.8%	10.2%	12.1%
February	16.6%	45.4%	13.0%	2.2%	10.5%	23.2%
March	12.8%	16.5%	4.5%	2.0%	8.7%	13.7%
April	6.4%	1.5%	11.5%	14.9%	6.4%	5.5%
May	9.3%	2.8%	11.6%	48.3%	11.8%	8.7%
June	6.4%	2.2%	1.6%	16.0%	4.1%	4.8%
July	5.8%	1.8%	12.5%	2.6%	8.1%	4.3%
August	6.5%	3.9%	11.7%	3.1%	9.2%	5.5%
September	4.8%	1.6%	1.5%	2.2%	4.7%	3.8%
October	5.1%	1.9%	12.8%	1.9%	10.8%	4.2%
November	5.9%	3.8%	11.5%	3.1%	8.4%	5.9%
December	8.4%	1.8%	1.5%	1.9%	7.0%	8.2%