Strategic Disclosure Timing and Insider Trading

Marina Niessner*†
University of Chicago

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Abstract

I examine whether managers strategically disclose negative news for their own benefit. Exploiting the SEC requirement that managers must disclose any material corporate event within five business days, I find they disclose negative events disproportionately on Fridays, before national holidays, and after the market closes - when investors are more distracted - despite these events occurring uniformly across days. This pattern is absent for non-negative events. Strategic disclosure timing is concentrated among smaller firms that have more retail investors and lower analyst coverage. I find a significant return under-reaction following negative Friday disclosures that persists for approximately three weeks, but no under-reaction for other days of the week. Managers exploit the return under-reaction to benefit their insider trading. Disclosure of negative news on a Friday is twice as likely if a manager sells shares in the weeks following the event. Google searches and trading volume provide corroborating evidence that investors are more distracted on Fridays. These results are consistent with managers undertaking strategic actions to exploit the behavior of investors in the market.

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1 Introduction

Prior literature on managerial behavior claims managers strategically issue securities and time information release to take advantage of mispricing in the market.[1] Simultaneously identifying both mispricing and strategic behavior in the same setting is empirically challenging. In this paper, I examine, in a focused setting, whether managers engage in strategic behavior for their own benefit. Specifically, I exploit an SEC requirement that managers have to disclose any material corporate event to investors within five business days, using Form 8-K. In this setting, managers only have discretion over the day of the week that they disclose the news. 8-K filings allow me to identify the event and the disclosure dates, and the short five-day window reduces the scope for other confounding activity.

I show managers strategically disclose negative news on Fridays in an attempt to take advantage of market under-reaction to pre-weekend announcements. The under-reaction to Friday announcements has been suggested in other settings (Bagnoli, Clement, and Watts (2005); Dellavigna and Pollet (2009)). In addition, I propose a mechanism for how managers benefit from the mispricing when they time disclosures, a question the literature has often overlooked. I find direct evidence that managers benefit from the mispricing associated with disclosure timing when selling shares on their own account.

The public-relations industry has long asserted that Friday is a good day to release bad news, because investors tend to be distracted by the upcoming weekend. Prior disclosure literature finds that managers release more negative news on Fridays, and after the market closes,[2] but establishing strategic behavior has proved challenging, and results in the literature are inconclusive. Papers on disclosure timing typically look at earnings announcements and managerial forecasts. However, earnings announcements, which generally follow rigid schedules, offer managers too little discretion over disclosure timing, whereas voluntary forecasts offer too much discretion. 8-K filings provide a nice compromise for how much control managers have over disclosure timing. Furthermore, managers have to report the date of the event that triggers the 8K filing, which other types of disclosures do not require. Knowing the date of the event allows me to perform a clean test of whether managers wait until Friday if a negative event occurs early in the week, and whether they rush the filing out of the door the same day if the event occurs on a Friday.

In the first part of the paper, I show managers strategically release negative news during

[1] Baker, Greenwood, and Wurgler (2003); Baker and Stein (2004); Baker and Wurgler (2004); Bagnoli, Clement, and Watts (2005); Hong, Wang, and Yu (2008); Baker, Greenwood, and Wurgler (2009); Greenwood, Hanson, and Stein (2010); Dellavigna and Pollet (2011).

[2] Damodaran (1989); Patell and Wolfson (1982); Bagnoli, Clement, and Watts (2005); Doyle and Magilke (2009); Dellavigna and Pollet (2009); Michaely, Rubin, and Vedrashko (2011); Doyle and Magilke (2012).

high-distraction periods. I find even though events are uniformly distributed throughout the week, managers disclose more negative news on Fridays, before national holidays, and after the market closes. This pattern is absent for non-negative news. Furthermore, negative news is clustered on Fridays regardless of the day of the week the event occurs. I also find disclosure timing is concentrated among smaller companies with more retail investors and less analyst coverage. Managers of small firms release 26% of negative news, compared to 21% of non-negative news, on Fridays. Managers of large firms do not strategically time disclosures. These findings are consistent with smaller companies having investors that are more distracted on Fridays, and larger companies being closely watched by institutional investors, analysts, and the media.

If investors are indeed more distracted on Fridays, returns should temporarily under-react to Friday disclosures (Dellavigna and Pollet (2009)). I find a significant under-reaction in cumulative abnormal returns of approximately 50 basis points if managers disclose negative news on Friday. The mispricing persists for three weeks and is not traded away because of limits to arbitrage. Especially for small companies, short-sale constraints can prevent arbitrageurs from correcting the mispricing, and the under-reaction is most likely too small for arbitrageurs to exploit. I also provide corroborating evidence that investors are more distracted on Fridays. Prior theoretical and empirical literature argues that investors have cognitive limitations to how much information they can process at once.[3] Whereas most prior studies use the market under-reaction to back out lower investor attention on Fridays,[4] I use Google searches for companies' tickers and trading volume to show attention increases on the day of the disclosure, but the increase is smaller if information is disclosed on a Friday. These findings lend support to the hypothesis that investors are more distracted on Fridays.

In the second part of the paper, I examine how managers benefit from disclosure timing. Because the return under-reaction is temporary, only managers who care about the short-term stock value should time information disclosure (Dellavigna and Pollet (2009)). I find managers time disclosures to benefit their insider trades. Managers who plan to sell shares on their own account in the three weeks following the disclosure are twice as likely to disclose negative news on Friday. I do not find a similar pattern for insider purchases. This result is consistent with evidence in the literature that insider sales are costlier to move than insider purchases (Jagolinzer (2009); Cohen, Malloy, and Pomorski (2012)). Furthermore, I

[3] Huberman and Regev (2001); Hirshleifer and Teoh (2003); Peng (2005); Peng and Xiong (2006); Cohen and Frazzini (2008); Peress (2008); Hirshleifer, Lim, and Teoh (2009); Dellavigna and Pollet (2009); Hou and Xiong (2009).

[4] Cohen and Frazzini (2008); Peress (2008); Hirshleifer, Lim, and Teoh (2009); Dellavigna and Pollet (2009).

find only trades by top managers[5] predict disclosure timing. Research shows top managers have more influence over the timing of disclosures than lower-level insiders (Cheng and Lo (2006); Rogers (2008); Bamber, Jiang, and Wang (2010)). I find managers expect to gain an average of $12,271 from disclosing negative news on a Friday if they plan to sell shares after the disclosure. The gain is modest but is in line with gains in cases of illegal insider trading. Keep in mind that managers trading on private information is illegal, strategically timing information disclosure is not, as long as managers disclose the information to the public before they trade. Whereas costs (e.g., reputation and career concerns) might be associated with strategically disclosing negative news on Fridays, such costs are certainly lower than those associated with illegal insider trading.

This paper is related to three strands of literature. First, it is related to papers that examine whether companies disclose negative news on Fridays and after the market closes (Damodaran (1989); Patell and Wolfson (1982); Francis, Pagach, and Stephan (1992); Bagnoli, Clement, and Watts (2005); Doyle and Magilke (2009); Dellavigna and Pollet (2009); Michaely, Rubin, and Vedrashko (2011); Doyle and Magilke (2012)). These papers document that more negative news is released when investors are distracted. Whether strategic behavior by managers is driving this pattern in disclosures remains unclear. Using 8-K filings, I demonstrate that managers strategically disclose negative news when investors are distracted, and show how managers benefit.

This paper also relates to literature on voluntary disclosures and insider trading. Prior studies find managers change timing (Cheng and Lo (2006)) and quality (Rogers (2008)) of voluntary disclosures prior to trading. My paper shows managers also strategically time mandatory disclosures to benefit their insider sales. Furthermore, I estimate how much managers expect to gain from timing disclosures before selling shares.

Finally, at a broader level, this paper relates to literature on whether managers undertake strategic actions to take advantage of market mispricing caused by investors. Several papers have addressed this question empirically (e.g., Baker, Greenwood, and Wurgler (2003), Bagnoli, Clement, and Watts (2005), Baker and Stein (2004), Baker and Wurgler (2004), Baker, Greenwood, and Wurgler (2009)). However, identifying both mispricing and strategic behavior in the same setting can be difficult. Using 8-K filings, where managers have discretion only over the day of the week they disclose the information, I find disclosing negative news when investors are distracted causes mispicing, and managers strategically time disclosures to take advantage of this mispricing when it benefits their own trades.

The remainder of the paper is organized as follows. Section 2 provides the background

[5] CEOs, board chairmen, presidents, CFOs, COOs, and general counsels.

on Form 8-Ks and describes the data. Section 3 tests whether managers time information disclosure and whether it depends on the visibility and monitoring of the company. Section 4 examines how managers benefit from timing disclosures. Section 5 provides results for Google searches and trading volume. Section 6 concludes.

2 Form 8-K Background and Data Description

2.1 Form 8-K

The Securities and Exchange Commission (SEC) provides the following definition for Form 8-Ks: "In addition to filing annual reports on Form 10-K and quarterly reports on Form 10-Q, public companies must report certain material corporate events on a more current basis. Form 8-K is the current report companies must file with the SEC to announce major events that shareholders should know about."[6] Public companies have been required to file this form since 1934. Under pressure from investors for more real-time access to reliable information, the SEC proposed a rule in 2002 to decrease the filing deadline and to increase the number of events for which a Form 8-K has to be filed. Effective August 23, 2004, the SEC expanded the list of items that have to be reported on an 8-K form from 12 to 21, and reduced the filing deadline for non-voluntary items from 15 calendar days to 4 business days. For a list of events that I use in the paper, refer to Table 1. The count starts the day after the event occurs. For example, if an event occurs on a Tuesday, the company has until 5:30pm the following Monday to file 8-K form.

Companies can submit 8-K forms via the "Electronic Data-Gathering, Analysis, and Retrieval" (EDGAR) system between 6:00am and 10:00pm (ET) Monday-Friday, excluding federal holidays. Only forms that are submitted before 5:30pm are considered to be filed the same day. Forms that are submitted between 5:30pm and 10:00pm are considered to be filed the next business day, and are only visible on EDGAR to investors at 6:00am that morning.

I download all 8-K forms that were filed between August 23, 2004, and December 31, 2011. According to the SEC, if a company issues a press release related to the 8-K filing, the press release has to be attached to the 8-K form. Because I am interested in the date the company makes the information public (either through a press release or a filing), I define the disclosure date as the earlier of the filing date and the press-release date. For example, on November 19, 2007, Aflac Incorporated filed an 8-K announcing Japan Post Network Co. Ltd. had selected Aflac Japan as the exclusive provider of cancer insurance. Aflac disclosed this news to the public on November 16, 2007, by issuing a press release. I select November

[6] http://www.sec.gov/answers/form8k.htm.

16, 2007, as the disclosure date. A press release accompanies roughly 33% of filings in my sample. About 45% of the press releases (or 15% of observations in my sample) are issued at least one business day before the 8-K is filed. For these filings, I use the press release date (rather than the filing date) as the disclosure date.

The majority of 8-K forms are not pre-scheduled. However, the SEC requires companies to furnish earnings releases and similar announcements to the SEC on Form 8-K under item 2.02. The majority of 8-Ks filed under Item 2.02 are related to earnings announcements. Because I am interested in non-prescheduled mandatory filings, I exclude from my analysis most 8-K forms that contain Item 2.02.[7]

Furthermore, I drop observations with item 7.01 (Regulation FD Disclosure). Once an event occurs that triggers a Reg FD disclosure, an 8-K has to be filed no later than (i) 24 hours or (ii) the start of the next trading day on the NYSE. Therefore, managers have little discretion over the timing of those filings. Finally, filings that include item 1.03 (Bankruptcy or Receivership) are the only set of filings that have a return reaction prior to the announcement date. Thus, the announcement date itself seems to be anticipated by investors. Because I want to concentrate on disclosures where the filing date is not anticipated, I drop filings that include item 1.03.

2.2 Negative Filings

One can categorize disclosures as negative in several ways. One way is to look at the event type. For some types of events (i.e., "items"), we can safely assume the majority of forms filed under the item contain mostly negative information. For example, forms filed under Item 3.01 (Notice of Delisting or Failure to Satisfy a Continued Listing Rule or Standard) are unlikely to include much positive news. Lerman and Livnat (2010) hypothesize for each type of events whether the majority of forms filed under the item contain mostly negative or positive information, or whether the nature of the information is ex-ante undetermined. The majority of items are classified as negative or undetermined. I follow their classification and define seven items as negative. For the full list of items that I classify as negative, see Table 1. I classify each filing as ex-ante negative if it contains at least one of the seven negative items. Of course, some 8-K filings that I classify as non-negative might still be negative, and vice versa. For example, one of the required items on the 8-K is Item 5.02 (Departure of Directors or Certain Officers). Departures of some directors can certainly be bad for

[7] The only exception is if Item 2.02 is filed on the same form as Item 4.02 (Non-Reliance on Previously Issued Financial Statements). If a an event triggers a form under Item 4.02, it usually also triggers Item 2.02; however, these events are not related to earnings announcements and are not pre-scheduled.

the company. However, I cannot, ex-ante, classify all filings under Item 5.02 as negative, because the exit of directors is also likely to be a positive or a neutral event. Because I look at differences between negative and non-negative events, misclassifying some filings should only bias me against finding results. One drawback of using the Form 8-K data is that I can only tell whether the information disclosed is negative or not. I cannot differentiate how negative the disclosure is, because the categories in the filings are broad.

Another way to classify filings is to look at the market reaction after the disclosure. I do not use this approach, however. Because I want to study the managers' decision processes, I want to only use information available to managers at the time they make the decision. The market reaction following the news disclosure is not part of that information set. As a robustness check, I replicate my main findings using the return reaction after the disclosure to classify filings. The results are presented in the Appendix (tables 1A and 2A) and are very similar.

2.2.1 Form 8-K summary statistics

Overall, I download 674,835 8-K filings between August 23, 2004, and December 31, 2011. Because EDGAR identifies companies using CIK codes, I use a mapping between CIKs and GVKEYs provided by the SEC Analytics Suite. I drop all observations that do not have a corresponding GVKEY. If a company has several filings in a given day, I collapse them into one filing (combining all the items, as if they were filed on one form). Thus the level of observation in my sample is company/day. I then merge the filings into the price and company accounting data. I only keep disclosures if they have non-missing stock prices for one week before and four weeks after the disclosure. Finally, after I drop filings that contain items 1.03, 2.02, and 7.07 (as described above), my sample includes 117,204 disclosure dates from 4,346 unique companies. Table 2, Panel A displays the summary statistics for the final dataset. The minimum number of filings by a company is 1, because to appear in my dataset, a company has to have at least one 8-K filing. An average company in my sample files 29.09 8-K forms between August 23, 2004, and December 31, 2011. An average of 2.66 of those disclosures contain at least one negative item. In my sample, 79% of filings include only one item, 16% have two, and a mere 5% have three or more. In untabulated results, I rerun my analysis using only filings that include 1 item (not counting exhibits), and I get similar results.

Figure 1 displays the distribution of disclosures by day of the week. Only 15% of negative news is disclosed on Mondays, compared to roughly 20% Tuesday-Thursday and 24% on Fridays. Disclosures of non-negative news display a similar pattern, except only 21% of filings are disclosed on Fridays. If managers disclosed news randomly I would expect to have

a uniform distribution. I run untabulated χ^2 tests to confirm the distributions of negative and non-negative disclosures are different from a uniform distribution. One reason for so few Monday disclosures is that a lot of federal holidays fall on a Monday. I re-examine the distribution of disclosures by dropping all weeks that include a federal holiday. The results are presented in the Appendix in Figure 1A. We still see more negative disclosures on Fridays relative to other days of the week.

2.2.2 Filing lag

When a company files an 8-K, it has to indicate when the event occurs. I want to ensure the difference between Friday disclosures of negative and non-negative news is driven by strategic disclosure timing and is not a mechanical result of the distribution of the events. For example, if a company always waits two business days to release any news, and the majority of negative events occur on Wednesdays, the company would release more negative news on Fridays. The difference in timing would obviously not be driven by strategic disclosure, but by the distribution of negative relative to non-negative events. Figure 2 displays the distribution of the days of the week on which the events occur. I do find more negative than non-negative events occur on Fridays. I replicate the graph excluding weeks with a federal holiday in the Appendix in Figure 2A. Negative events are distributed fairly uniformly throughout the week. Next, I make sure the differences in the distributions of events are not driving the differences in disclosure timing.

I control for the differences in distributions of the days of the week of the events in two ways. First, I include the day of the week of the event as fixed effects in most of my regressions. Second, because I know exactly when the event occurs, I examine whether companies particularly target Fridays to disclose negative news. I define the filing lag as the number of days between the date of the event and the date of the disclosure. If the information is disclosed the same day the event occurs, the filing lag is 0. Using the filing lag, I estimate the following linear probability model (LPM):

$$\begin{aligned} FileLagLength_{k,t} &= \alpha + \beta_1 Neg8K_{k,t} + \beta_2 DowEvent_{k,t} \\ &+ \beta_3 Neg8K_{k,t} * DowEvent_{k,t} + \text{Fixed Effects} + \epsilon_{k,t} \ , \end{aligned} \tag{1}$$

where $FileLagLength$ is an indicator variable equal to 1 if the filing lag = 0 (or 1, 2, 3 or 4, for different regressions), and 0 otherwise. $DowEvent$ is an indicator variable equal to 1 if the event occurs on a Monday (or Tuesday, Wednesday, Thursday, or Friday for different regressions), and 0 otherwise. $Neg8K$ is an indicator variable equal to 1 if the information company k discloses on date t is negative, and 0 otherwise. The observations are at the

company-day level. I include month, year, and firm fixed effects in the regressions. Standard errors are clustered at the firm level.[8] I run the regression in Eq. (1) 25 times. I have five different left-hand-side variables (filing lag is 0, 1, 2, 3, or 4) and five different days of the week of the event on the right-hand side of the regression. I am interested in the interaction coefficient β_3. If β_3 is positive, then for events that occur on the day of the week $DowEvent$, a company is more likely to wait "filing lag" days to disclose the negative news, relative to non-negative news.

For clarity, I only present the interaction terms β_3 for the 25 regressions in Table 3. For example, the third coefficient in column (3), which is 0.045, is the β_3 coefficient from the following regression:

$$\begin{aligned} Dummy(\text{filing lag} = 2) &= \alpha + \beta_1 Neg8K_{k,t} + \beta_2 WednesdayEvent_{k,t} \\ &+ \beta_3 Neg8K * WednesdayEvent_{k,t} + \text{Fixed Effects} + \epsilon_{k,t} \ , \end{aligned}$$

which means if a negative event occurs on a Wednesday, a company is 4.5% more likely to wait two business days (i.e., until Friday) to disclose the information than if the event is non-negative. A clear pattern emerges by looking at the diagonal from the bottom left to the top right. For negative events that occur on Fridays, managers are 4.9% more likely to disclose the news the same day. As we see in row 1 columns (1) and (5), if a negative event occurs on a Monday, managers are 5.4% less likely to disclose the news the same day, and 7.7% more likely to wait until Friday. Results in this table confirm that conditional on the day of the week of the event, managers are more likely to wait until Friday to release negative news.

In un-tabulated results, I run joint F-tests and verify that within each column, the coefficients along the diagonal differ significantly from other coefficients in that column. I also verify that all the coefficients along the diagonal jointly significantly differ from zero.

These results also address a common criticism of the strategic-disclosure-timing hypothesis. Chambers and Penman (1984) argue that one reason to release negative information as soon as possible is to prevent it from leaking out. Therefore, managers might be disclosing negative news on Fridays to avoid the news leaking out over the weekend. However, this explanation contradicts the finding in Table 2 that managers wait until Friday to disclose negative news if it occurs on a Monday.

[8] Because the majority of the left-hand-side variables in the paper are dummy variables, I also estimate the regression models using Probit. The results are similar in statistical significance and magnitudes. The LPM is appropriate to use, because I am interested in the within-firm variation and Probit does not work well with many fixed effects. I test to ensure when using LPM, the predicted values stay well within the 0-1 boundaries. In the interest of brevity, I only present the output of the LPMs in the paper.

2.3 Other Data Sources and Summary Statistics

I obtain returns, volume, shares outstanding, and market capitalization from the CRSP dataset. Accounting data are from COMPUSTAT. The number of analysts are from the I/B/E/S detailed files. Institutional ownership data are taken from the CDA/Spectrum Institutional (13f) Holdings database. Executive and director ownership are from ExecuComp. Insider trading data is from the Thomson Reuters insider filings database.

Table 2, Panel B presents the unconditional means of company characteristics for companies whose managers disclose news on Fridays, compared to non-Fridays. Overall, companies of managers who disclose news on Fridays are larger and have slightly more retail investors. The difference in size disappears when I compare companies that disclose negative news on Fridays with companies that disclose negative news on non-Fridays. Companies that disclose negative news on Fridays still have more retail investors and also fewer analysts. All in all, the unconditional company characteristics look fairly similar. I revisit this question later in the paper, when I examine company characteristics in a controlled regression setting.

3 Do Managers Time Information Disclosure?

This section presents evidence that managers are more likely to disclose negative news during high-distraction periods. First, I show managers are more likely to disclose negative news on Fridays. I then examine whether all companies are equally likely to strategically time disclosures, or if disclosure timing is mostly concentrated among less-monitored firms. I proxy for the level of visibility and monitoring with company size, percent of retail investors, and analyst following. Finally, I examine whether managers strategically disclose negative news during other high-distraction periods. In particular, I look at the time before national holidays and after the market closes.

3.1 Friday Disclosures

I first show companies are more likely to disclose negative information on Fridays. I estimate the following linear probability model:

$$Fri_t = \alpha + \beta_1 Neg8K_{k,t} + \text{Fixed Effects} + \epsilon_{k,t} \ , \tag{2}$$

where Fri is an indicator variable equal to 1 if date t is a Friday, and 0 otherwise. $Neg8K$ is an indicator variable equal to 1 if the information disclosed by company k on date t is negative, and 0 otherwise. The observations are at the company/day level. I run several specifications of this regression with different sets of fixed effects. I include year and month

fixed effects to control for changes in distributions of negative news over time and across different months of the year.[9] Furthermore, I include fixed effects for days of the week of the event, which should control for different day-of-the-week distributions of negative and non-negative events. Standard errors are clustered at the firm level.[10] Table 4 presents the results.

As predicted, I find in column (1) that on average, managers are 2.9% more likely to report negative news on Fridays, relative to non-negative news. This difference is substantial, given that about 21% of non-negative stories are disclosed on Fridays. In column (2), I add Fama-French 48 industry fixed effects to control for unobservable characteristics that vary across industries. Adding the industry fixed effects does not change the main coefficient. Some unobservable company characteristics may be present that cause companies to have more negative events and also to disclose more on Fridays. To control for company characteristics that do not change over time, I include firm fixed effects in the regression in column (3). Adding firm fixed effects also excludes companies that never or always disclose negative news in my sample. Including firm fixed effects does not change the coefficient.

Firm fixed effects help control for omitted company characteristics that remain constant over time and are correlated with the number of negative events that occur at a company. However, firm fixed effects do not eliminate companies that either never or always disclose news on Fridays. If those companies also have a below or above average number of negative events, something besides disclosure timing could be driving my results. Therefore, in column (4), I exclude companies that either always or never disclose news on Fridays, which drops 1,780 disclosures made by 379 companies. Results in column (4) show that excluding those companies does not change the coefficient. Companies that either never or always disclose news on Fridays most likely do not strategically target Fridays for negative disclosures. Because I am interested in strategic disclosure timing, I exclude "non-switchers" from the analysis in the rest of the paper.

Next, I examine whether managers still time the 8-K filings even if the information has already been disclosed in a press release. If managers strategically time disclosures to hide negative news from investors, they should not care about whether the form itself is filed on a Friday, once a press release has made the information public. I concentrate on the 15% of my sample where managers issue a press release at least one business day before they file

[9] I also run the analysis using quarter fixed effects. The results are similar. Many papers that look at disclosures use quarter fixed effects to control for shocks related to the fiscal cycle. However, many of the events in the 8-Ks are not necessarily related to the fiscal cycle. Furthermore, because the majority of 8-Ks are filed between earnings-announcement months, including month fixed effects seems more appropriate.

[10] In my analysis clustering by date or firm level does not change statistical significance much.

the 8-K. I run a regression similar to Eq. (2), except the dependent variable is an indicator variable equal to 1 if the filing day is a Friday, and zero otherwise. The coefficient on $Neg8K$ in column (5) is statistically insignificant. Therefore, if managers disclose the information in a press release before the filing, they don't seem to time the filing itself.

3.1.1 Negativity measure

Because my paper is the first to use 8-K filings to study disclosure timing, I run a sensitivity test and a placebo test to verify my classification of negative filings is sensible. First, I perform a sensitivity test to ensure my results are not overly sensitive to the way I classify negative 8-K filings. In my classification, I assign seven items to be negative. I want to ensure my results are not driven by any particular item. I rerun the regression in Eq (2) seven times, and each time I drop one of the items from my definition of a negative 8-K. So instead of seven items, my definition of a negative 8-K contains only six items, and the set is different in each of the seven regressions. In untabulated results, I find the coefficient β_1 is still statistically significant and does not change much in magnitude for all seven regressions. Therefore, the result that managers are more likely to disclose negative news on Fridays is not driven by any particular item in my definition of negative news.

The second test I run is a placebo test. I want to ensure I would not get the Friday effect by randomly assigning some filings to be negative. With my definition of a negative 8-K about 9.16% of filings are classified as negative. In the placebo test, I randomly assign 9.15% of my sample to be negative, and I rerun the regression in Eq (2). I repeat this procedure 1,000 times. The highest β_1 coefficient that I obtain using random assignments is 0.009, which is much smaller than the β_1 of 0.026 that I obtain using my definition of negative 8-Ks. This finding confirms my negativity measure captures more than random noise.

3.2 Company Visibility and Oversight

Different companies draw different levels of attention and oversight from investors, analysts, media, and politicians. Managers of companies that the media, analysts, and investors follow closely should not be able to take advantage of investor inattention at the same level as managers of smaller companies. For example, if Apple discloses negative news on a Friday, the news will get nearly as much coverage as on any other day of the week. However, if Arcadia Resources Inc,[11] which is much smaller and has a lot more retail investors, files an 8-K on a Friday, more investors potentially miss the information. Solomon and Soltes (2011)

[11] In 2010, Arcadia Resources had a market capitalization of $86.6 millions and 61% of its investors were retail investors.

show empirically that company size is highly correlated with media coverage. Therefore, journalists watch larger firms more closely than smaller ones, and large companies have more difficulty "hiding" negative information on Fridays. Shleifer and Vishny (1986) and Hartzell and Starks (2003) argue that large institutional shareholders are more likely to monitor companies than smaller retail investors. Large shareholders are more willing to incur the monitoring costs, because they own more shares and therefore benefit more from a better-run firm. Thus managers of companies with a higher share of retail investors might be more tempted to time information disclosure, if they think their investors are more distracted on Fridays. Similarly, I expect managers with a higher analyst following to be less likely to time disclosures. Analysts, similar to large institutional investors, have a lot to gain from monitoring a company and issuing more accurate forecasts. As an example of analyst oversight, Yu (2008) shows managers of companies with higher analyst coverage engage in less earnings management.

I test my predictions that smaller companies, companies with more retail investors, and companies with lower levels of analyst coverage are more likely to disclose negative news on Fridays. As smaller companies tend to have more retail investors and lower levels of analyst coverage, I make sure these characteristics don't all measure the same company attribute. I compute the Pearson correlations of the three characteristics. Though they are fairly correlated, with correlations ranging from 0.59 to 0.78, they do not all measure the same attribute and could have different effects on disclosure timing.

For each of the three characteristics, I estimate the following linear probability model:

$$\begin{aligned} Fri_t &= \alpha + \beta_1 Neg8K_{k,t} + \beta_2 Characteristic_{k,t} + \beta_3 Neg8K_{k,t} * Characteristic_{k,t} \\ &+ \text{Fixed Effects} + \epsilon_{k,t} \ , \end{aligned} \tag{3}$$

where *Characteristic* is either log(market capitalization), percent of retail investors, or log(number of analysts + 1). I calculate percent of retail investors as 100% minus the percent of institutional investors, and the number of analysts is how many analysts issued an earnings forecast in the previous calendar year. For all three characteristics, I use the value from the previous calendar year. I include year, month, day of the week of the event, and industry fixed effects in all of the above regressions. I do not include firm fixed effects because size, percent of retail investors, and analyst coverage are slow moving within a given company, and I am interested in looking across companies. Standard errors are clustered at the firm level. In this regression specification, I am interested in the interaction coefficient β_3. If β_3 is significantly greater than zero, companies with the larger values of *Characteristic* are more likely to report negative information on Fridays. Table 5, Panel A presents the

results.

Results in column (1) show that if the size of a company increases by 10%, the probability of disclosing negative news on Fridays decreases by 13%. Similarly, if the percentage of retail investors increases by 10%, the probability of disclosing negative news on Fridays increases by 0.7%. Finally, if the number of analysts following a company increases by 10%, the probability of disclosing negative news on Fridays decreases by 21%. To examine which characteristic matters more for disclosure timing, I include all three characteristics in one regression. As seen in column (4), even though the coefficients on percent of retail investors and number of analysts have the right sign, they are no longer statistically significant. Company size seems to be driving the difference in disclosure timing.

Because smaller companies are more likely to disclose negative news on Fridays, I rerun the Friday regression in Eq (2) separately for small and large companies. At the beginning of each calendar year, I rank companies based on their market capitalization in the previous year and separate them into two groups, depending on whether they were above or below the median. A company is defined as "small" if it was below the median in market capitalization in the previous calendar year. I repeat this procedure each calendar year. I include firm fixed effects in the regressions. Table 5, Panel B presents the results. I find disclosure timing is concentrated among small companies. Small companies are 4.6% more likely to disclose negative news on Fridays, relative to non-negative news. This increase is substantial, given that on average, the probability of disclosing non-negative news on a Friday is 21% for small firms. In column (2), I find large companies are no more likely to disclose negative, relative to non-negative, news on Fridays. In similar but untabulated regressions, I show disclosure timing is mostly concentrated among companies that have high levels of retail investors and low analyst coverage. This result confirms my hypothesis that companies that are highly visible and monitored do not engage in disclosure timing.

Disclosure timing seems to be concentrated mostly among small companies with a lot of retail investors, and low analyst coverage. Therefore, for the rest of the paper, I concentrate on small companies, unless noted otherwise. In my sample, the median cutoff for separation into small and large companies falls around the 20th percentile cutoff of the NYSE market capitalization. The average market capitalization in my sample of small companies is around $156 million.

Patell and Wolfson (1982) suggest managers might disclose more complex information on Fridays and after the market closes to allow investors more time to process the news. If negative disclosures happen to be more "complex" on average, we would see more negative news on Fridays without managers trying to hide the negative information. However, Cohen and Lou (2012) argue that the same type of information is harder for large (conglomerate)

firms to process than for small (focused) ones. Therefore, if companies disclose negative news on Fridays to allow investors more time to process the information, we would expect larger companies to be more likely to disclose negative news on Fridays. On the contrary, I find managers of small firms are the ones who time disclosures, which contradicts the complexity hypothesis.

3.3 Disclosure before National Holidays

If managers disclose negative information on Fridays to hide the news from investors, managers should also disclose negative information during other high-distraction periods. Because the time around holidays is a notoriously high-distraction period, I examine whether managers are more likely to disclose negative news around holidays. In particular, I concentrate on the last business day before major US holidays: Memorial Day, Independence Day, Labor Day, Thanksgiving (both Wednesday and Friday), Christmas, and New Year's. Most people in the US get these holidays off work, and they are also high travel periods. Therefore, not only are people distracted by the impending vacation, but many people take additional time off and therefore might not even be in the office. To analyze whether managers try to disclose negative news right before these holidays, I estimate the following linear probability model:

$$DayBeforeHoliday_t \quad = \quad \alpha + \beta_1 Neg8K_{k,t} + \text{Fixed Effects} + \epsilon \ , \tag{4}$$

where $DayBeforeHoliday_t$ is an indicator variable equal to 1 if day t is the last business day before one of the major holidays, and 0 otherwise. For Thanksgiving, I consider both the Wednesday before and the Friday right after Thanksgiving. EDGAR is open on Fridays after Thanksgiving, but most people have that day off, making it a target for disclosing negative information. I run several specifications of this regression with different sets of fixed effects. Standard errors are clustered at the firm level.

Table 6 presents the results. In column (1), I find companies are 0.9% more likely to report negative news, relative to non-negative news, before a holiday. This difference is substantial, given that on average, managers disclose 2.4% of non-negative news on the last business day before a holiday. Once I include year, month, day-of-the-week of the event, day of the week of the disclosure, and firm fixed effects in column (2), the coefficient drops to 0.5% but is still statistically significant.

Because about half of the last business days before a holiday fall on a Friday, the results in columns (1) and (2) could be just picking up the Friday effect. Even though I include day of the week fixed effects in the regression in column (2), I want to make sure the holiday effect

is different from the Friday effect. I rerun the regression in Eq (4) separately for Monday-Thursday and for Friday disclosures. In column (3), I present results only for disclosures made Monday-Thursday. I still find companies are more likely to disclose negative news right before a national holiday. In column (4), I only look at disclosures made on Fridays. Even though companies are generally more likely to disclose negative news on Fridays, they don't seem to be even more likely to disclose negative news if it is a Friday before a three-day weekend. Results in columns (3) and (4) confirm the holiday effect is different from the Friday effect.

3.4 After the Market Closes

Another high-distraction period previously analyzed in the literature is the time after the market closes (e.g., Patell and Wolfson (1982), Damodaran (1989), Bagnoli, Clement, and Watts (2005), Doyle and Magilke (2009), Doyle and Magilke (2012)). I examine how the probability of negative-news disclosure changes throughout the day. I define two time periods: before the market opens (BMO), from 6:00am-9:30am, and after the market closes (AMC), from 4:00pm-10:00pm. I divide the AMC time period into two sub-periods: 4:00pm-5:30pm, and 5:30pm-10:00pm. If a company files an 8-K form before the 5:30pm EDGAR deadline, the form will be displayed right away on EDGAR's website. If a company files an 8-K form after 5:30pm but before 10:00pm, the form will be displayed on EDGAR the following morning at 6:00am, along with many other forms that were filed the pervious night.

First, I analyze how the likelihood of a negative disclosure changes throughout the day. I concentrate on time periods before the market opens and after the market closes. The results are presented in Table 7. I obtain the exact hour and minute EDGAR accepts the 8-K forms. I do not have the exact time when the press releases were issued. Because I define the disclosure date to be the earlier of the filing date and the press release date, I only know the exact hour and minute of information disclosure for filings without a press release. Therefore, in columns (1)-(4), I concentrate only on 8-K filings without a press release. I estimate a linear probability model with whether the 8-K form was filed before the market opened as the dependent variable and whether the news was negative as the independent variable. I include year, month, day of the week of the event, day of the week of the filing, and firm fixed effects. Standard errors are clustered at the firm level. In column (1), I find companies are 0.5% less likely to release negative news, relative to non-negative news, before the market opens. Overall, 9% of non-negative news are released before the market opens. In column (2), I look at the 4:00pm-5:30pm time period. I find companies are 7.4% more likely to disclose negative news, than non-negative news, after the market closes but before EDGAR's same-day deadline. Because 43% of non-negative news stories

are filed during this time period, the difference is substantial. If managers are trying to hide negative information from investors, they might be even more likely to disclose negative news AMC on Fridays than on other days of the week. I examine this question in column (3). I interact the indicator variable for whether the filing is negative with an indicator variable for whether the information was disclosed on a Friday. I find managers are 6% more likely to disclose negative news after the market closes on a Friday relative to other days of the week. In column (4), I look at the 5:30pm-10:00pm time period. The difference between negative and non-negative 8-K filings after the same-day deadline is slightly negative but statistically insignificant. For this time window, even though the company files the form when investors are distracted, the information is only released to the market the next business day. It appears the next morning at 6:00am with many other disclosures. The result seems to be between the BMO and the AMC (but before the 5:30pm deadline) effects.

Next, I examine whether managers time filings even when the information has already been made public. In columns (4) and (5), I concentrate on the 15% of my sample for which a press release was issued at least one business day before the 8-K form was filed. If managers care about "hiding" information from investors, they should not care about whether the form itself is filed BMO or AMC, once the information has been made public. The dependent variable in columns (4) and (5) is an indicator variable equal to 1 if the form was filed BMO or AMC, respectively, and zero otherwise. I find that if managers disclose the information in a press release before the filing, they don't time the filing itself. These results support the hypothesis that managers time information disclosure to take advantage of limited investor, and possibly media, attention.

4 Benefits to Managers

In the previous section, I establish that managers time the disclosure of negative information to take advantage of limited investor attention. In this section, I analyze how managers benefit from disclosing negative news on Fridays. First, I find a temporary return under-reaction to negative information disclosed on Fridays. I then analyze how managers might benefit from this return under-reaction. Because the under-reaction is temporary, Dellavigna and Pollet (2009)'s model predicts managers who care about the short-term stock value should time information disclosure, and managers who care about the long-term stock value should not. I test these predictions by looking at disclosure practices of managers who care about the stock value at different time horizons. First, I use managers' insider trades during the three weeks following a disclosure to proxy for how much managers care about the short-term stock value. Managers can influence the price reaction to the announcement

by disclosing it on a Friday. Therefore, if managers plan to sell shares and have to disclose negative news before they trade, they might take advantage of the price under-reaction and disclose the news on a Friday. Second, I use managers' stock ownership in the company to proxy for whether they care about the long-term stock value.

4.1 Stock Returns

First, I examine whether returns under-react to negative information disclosed on Fridays. When managers disclose negative information, the price usually decreases. However, if managers release negative information when investors are distracted, the price might not decrease as much immediately, and may drop more later when investors become aware of the information in the coming week(s). Dellavigna and Pollet (2009) find this pattern for earnings announcements that are made on Fridays.

To analyze the market reaction, I follow Dellavigna and Pollet (2009) and construct cumulative abnormal returns. The cumulative abnormal return is the raw buy-and-hold return adjusted using the estimated beta from the market model. I obtain $\hat{\beta}$ from the regression $R_{k,s} = \alpha_{k,t} + \beta_{k,t} R_{m,s} + \epsilon_{k,t}$ for days $s \in \{t-300, t-46\}$, where $R_{k,s}$ is the return of firm k on day s, and $R_{m,s}$ is the market return on day s. Given the estimated beta, the cumulative abnormal return for period $[h, H]$ is

$$Ab\_Ret_{k,t_{h,H}} = \left[\prod_{j=t+h}^{t+H}(1+R_{k,j})\right] - 1 - \hat{\beta}_{k,t}\left(\left[\prod_{j=t+h}^{t+H}(1+R_{m,j})\right] - 1\right) .$$

It is calculated from the close on trading day $t-1$ to the close on trading day $t+H$.

In Figures 3 and 4, I graph the average differences in cumulative abnormal returns ($Ab\_Ret_{k,t_{h,H}}$) between negative and non-negative announcements for pairs $\{h, H\}$, where $h = 0$, and $H \in [1, 30]$ trading days. In both figures, returns are in percent on the y-axis, with -1 corresponding to -100 basis points. Figure 3 shows the differences in returns for small companies. An under-reaction in abnormal returns occurs if information is disclosed on a Friday versus other days of the week. The under-reaction starts out at about 50 basis points right after the announcement and disappears after 20 calendar days. Figure 4 shows differences in cumulative abnormal returns between negative and non-negative news disclosed on Fridays versus other days of the week for large companies. The under-reaction to Friday disclosures for large firms lasts for less than a week.

Next, I analyze the differences in cumulative abnormal returns I found in Figures 3 and 4 in a regression setting to estimate the magnitudes of the return under-reaction, and to determine whether the under-reaction is statistically significant. First, I use buy-and-

hold returns to estimate the magnitude of the cumulative return under-reaction. However, Fama (1998) and Mitchell and Stafford (2000) argue that event-time returns tend to have a cross-section dependence problem among sample firms, and the standard errors could be biased downwards. They suggest using calendar-time portfolios to obtain correct standard errors. Therefore, I also examine calendar-time portfolios to confirm the under-reaction is statistically significant. This approach eliminates the cross-section dependence problem; however, it does not precisely measure investor experience.

First, at different horizons, I regress abnormal returns on whether company k discloses negative information on day t, and whether day t is a Friday. I run the following set of OLS regressions:

$$\begin{aligned} Ab\_Ret_{k,t_{h,H}} &= \alpha + \beta_1 Fri_t + \beta_2 Neg8K_{k,t} + \beta_3 Fri_t * Neg8K_{k,t} \\ &+ \text{Fixed Effects} + \epsilon_{k,t} \ , \end{aligned} \tag{5}$$

I look at horizons of $H \in \{1, 5, 10, 15, 20\}$ trading days. I include year, month, day of the week of the event, and firm fixed effects. Standard errors are clustered at the date level. I perform the analysis separately for small and large companies to examine whether the market responds differently to announcements by companies with different levels of visibility and oversight.

I also examine the abnormal returns for the week before a company discloses the information. Looking at the week before the disclosure helps me control for two problems previously discussed in the literature: leakage of information and anticipation of the event. Dellavigna and Pollet (2009) point out that differential pre-announcement leakage of information may cause the lower response to Friday announcements. Bagnoli, Clement, and Watts (2005) find Friday earnings announcements are more anticipated, and the stronger return reaction prior to announcements explains the under-reaction on the day of the announcement. This, however, should not be a major concern for my setting, because Form 8-K disclosures, unlike earnings announcements, are not pre-scheduled and investors should not anticipate the exact disclosure date.

Table 8 presents the results from regressions in Eq (5). Panel A shows results for small companies. As expected, no difference in return reaction seems to exist in the week prior to announcements made on Fridays versus other days of the week. Furthermore, as column (2) shows, the same-day abnormal returns are 90 basis points lower for negative news than for non-negative news, and this difference persists for at least a month. The difference in returns between negative and non-negative news is 60 basis points lower if the news is released on a Friday relative to a non-Friday. This under-reaction persists for about three weeks. After a

month, the difference between reporting negative news on a Friday versus other days of the week disappears. The under-reaction is quite significant. On average, the same-day return is 90 basis points lower for negative than for non-negative 8-Ks. This difference is only 30 basis points for news reported on a Friday. This under-reaction is not traded away because of limits to arbitrage. Especially for small companies, short-sale constraints can prevent arbitrageurs from correcting the mispricing, and the under-reaction is most likely too small for arbitrageurs to exploit.

Panel B presents results for large firms. Again, no difference appears to exist in the return reaction in the week prior to announcements between Friday and non-Friday disclosures. The difference in returns between negative and non-negative news remains negative for the entire month but is only statistically significant for the first two weeks. This result either implies my measure of negative news does not work as well for larger firms, or that information that is reported in 8-Ks for large firms is less significant, relative to other news, than for smaller firms. A small same-day return under-reaction to negative news exists if the information is released on a Friday, but it is not statistically significant. This big difference in return under-reactions between small and large firms might explain the reluctance of managers at large companies to report negative news on Fridays, because they don't gain much from the timing.

Next, I examine calendar-time portfolios. On day t, for a given window $t-P$ to $t-p$, where {P,p} $\in$ [{2,0},{5,3},{10,3},{15,3},{20,3},{25,3}], I calculate equal-weighted returns of four portfolios. The first portfolio includes all companies that disclosed negative information on a Friday during the window. The second portfolio includes all companies that disclosed negative information on a Monday-Thursday during the window. I construct the third and the fourth portfolios similarly for companies with non-negative announcements. I repeat this procedure daily, keeping the same size windows. I run the following OLS regression:

$$Ab\_Ret_{t-P\to t-p} = \alpha + \beta_1 Fri_t + \beta_2 Neg8K_{k,t} + \beta_3 Fri_t * Neg8K_{k,t} + \epsilon_{k,t} \ , \qquad (6)$$

where $Ab\_Ret_{t-P\to t-p}$ is the equal-weighted abnormal return for each of the four calendar-time portfolios. To calculate abnormal returns, I subtract out the equal-weighted market return on day t. Because I have four observations for each day, I cluster standard errors at the date level. Table 9 presents the results. In Panel A, I concentrate on small firms. The sign of the coefficients traces out the shape of the return curves in Figure 3. Results in column (1) confirm that in the first couple of days, returns for negative disclosures made on Monday-Thursdays drop and stay at the same level, whereas returns for negative disclosures made on Fridays do not drop as fast. Results in columns (2) to (6) show that over the

next month, returns for negative disclosures made on Fridays slowly catch up with returns for negative disclosures made on other days of the week. In Panel B, I examine calendar-time portfolios for large firms. As expected from Figure 4, I do not find a difference in returns for negative news disclosed on Fridays versus other days of the week. Findings using calendar-time portfolios are qualitatively similar to the buy-and-hold returns.

One potential critique of the disclosure-timing analysis is that negative news disclosed on Fridays might be systematically different (worse or better) from negative news disclosed on other days of the week. However, this case is unlikely, because the return difference between negative news disclosed on Fridays and negative news disclosed on other days of the week disappears after about 20 trading days. If negative information disclosed on Fridays was systematically different, we would expect a permanent difference in returns.

4.2 Insider Trading

Next, I analyze whether managers time information disclosure to maximize short-term gains. In particular, I look at whether managers take advantage of the return under-reaction when executing trades on their own account.[12] I examine whether managers are more likely to disclose negative news on Fridays if they plan to trade after the disclosure. Because I find a return under-reaction that lasts for about 15 business days, I look at insider trading within 15 business days after the disclosure date. First I look at all insider trades. I then separate trading activity by "top managers" and non "top managers," because top managers have been shown to have more influence over disclosure timing (Cheng and Lo (2006)). I consider top managers to be CEOs, board chairmen, presidents, CFOs, COOs, and general counsels (Rogers (2008); Bamber, Jiang, and Wang (2010)).

I expect insider sales to be more predictive of strategic disclosure timing than insider purchases. Managers should be more likely to time information disclosures if moving trades to a more opportune time is costly. Insider sales are costlier to move than insider purchases for two reasons. First, in October 2000, the SEC introduced Rule 10b5-1, which allows insiders to schedule trades far in advance to decrease litigation risk. Unfortunately, data on which trades are exercised under Rule 10b5-1 are not easily available, because companies don't have to disclose that information. Prior research does find the bulk of trades within 10b5-1 is comprised of insider sales (Jagolinzer (2009)),[13] and therefore managers are more likely

[12] I obtain the insider trading data from Thomson Reuters insider filings database. I look at all open market purchases and sales reported in table 1 of form 4. To ensure firms are covered by the Thomson Reuters insider filings database, I exclude companies from this part of my analysis that don't appear in the database over the time period that I analyze in the paper.

[13] Insiders are allowed to selectively cancel trades. However, the SEC suggests canceling a trade can affect

to preschedule sales than purchases.[14] Second, because insiders receive a large proportion of their stakes in firms through initial ownership and stock grants, diversification or liquidity reasons are more likely to drive insider sales than insider purchases (Cohen, Malloy, and Pomorski (2012)). For these two reasons delaying insider sales is costlier than delaying insider purchases. Thus, if managers know the stock price is going to decrease after a negative-news disclosure, and they are planning to sell in the next three weeks, they might take advantage of the return under-reaction that occurs if they disclose the news on a Friday.

Following prior literature (e.g., Bergstresser and Philippon (2006); Cheng and Lo (2006); Rogers (2008)), I define net insider purchases of a stock as the dollar value of insider purchases minus the dollar value of insider sales. To analyze whether timing of information disclosure affects insider trading, I estimate the following linear probability models:

$$\begin{aligned} Fri_t &= \alpha + \beta * Neg8K_{k,t} \\ &+ \gamma_1 * Log(NetSalesAll_{k,t}+1) + \gamma_2 * Neg8K_{k,t} * Log(NetSalesAll_{k,t}+1) \\ &+ \delta_1 * Log(NetPurchasesAll_{k,t}+1) + \delta_2 * Neg8K_{k,t} * Log(NetPurchasesAll_{k,t}+1) \\ &+ \text{Fixed Effects} + \epsilon_{k,t} \end{aligned} \tag{7}$$

$$\begin{aligned} Fri_{k,t} &= \alpha + \beta * Neg8K_{k,t} \\ &+ \gamma_1 * Log(NetSalesTM_{k,t}+1) + \gamma_2 * Neg8K_{k,t} * Log(NetSalesTM_{k,t}+1) \\ &+ \phi_1 * Log(NetSalesNTM_{k,t}+1) + \phi_2 * Neg8K_{k,t} * Log(NetSalesNTM_{k,t}+1) \\ &+ \delta_1 * Log(NetPurchasesTM_{k,t}+1) + \delta_2 * Neg8K_{k,t} * Log(NetPurchasesTM_{k,t}+1) \\ &+ \xi_1 * Log(NetPurchasesNTM_{k,t}+1) + \xi_2 * Neg8K_{k,t} * Log(NetPurchasesNTM_{k,t}+1) \\ &+ \text{Fixed Effects} + \epsilon_{k,t} \ , \end{aligned} \tag{8}$$

where $NetSalesAll$ is the dollar value of insider sales minus the dollar value of insider purchases by all insiders in company k over the time period $\{t, t+15\}$ if $NetSalesAll > 0$, and 0 otherwise. $NetPurchasesAll$ is the dollar value of insider purchases minus the dollar value of insider sales by all insiders in company k over the time period $\{t, t+15\}$ if $NetPurchasesAll > 0$, and 0 otherwise. $NetSalesTM$, $NetSalesNTM$, $NetPurchasesTM$,

the legal protection for prior transactions executed under this plan "if it calls into the question whether the plan was 'entered into in good faith'" (U.S. Securities and Exchange Commission, paragraph 15(b)). Therefore, even though postponing insider sales under Plan 10b5-1 is possible, doing so is costlier than postponing purchases.

[14] One reason might be that insider sales carry a higher litigation risk than insider purchases (Cheng and Lo (2006); Rogers (2008)).

and $NetPurchasesNTM$ are defined similarly, except I separate trades executed by top managers (TM) from trades executed by lower-level insiders (NTM). The regressions include month, year, day of the week of the event, and either industry or firm fixed effects. Standard errors are clustered at the firm level. The results are presented in Table 10.

Columns (1) and (2) include all insiders who have to file Form 4 with the SEC. Column (1) includes industry fixed effects, and column (2) includes firm fixed effects. The results are similar for the two sets of fixed effects. As expected, net sales have more predictive power than net purchases. Whereas, on average, companies are 4% more likely to report negative news, relative to non-negative news, on a Friday, the difference increases by 3% if insiders' net sales are 10% larger over the next three weeks. This difference is statistically significant. Next, I separate insiders into "top managers" and non "top managers." The results are presented in columns (3) and (4). Column (3) includes industry fixed effects, and column (4) includes firm fixed effects. Again, I find insider sales have more predictive power than insider purchases. Furthermore, I find transactions carried out by top managers drive the predictability of disclosure timing. The probability of releasing negative news on a Friday increases by 5% if top managers' net sales are 10% larger over the next three weeks. This difference is statistically significant. The sign on net purchases for top managers also goes in the right direction. If top managers are going to be net buyers in the three weeks following the disclosure, they are less likely to release the news on a Friday, because they want the price to drop faster. The coefficient on net purchases, however, is not statistically significant. As expected, trading by non "top managers" does not have predictability for timing of news disclosures.

4.3 Expected Gains from Insider Trading

In the previous section, I show that top managers are more likely to disclose negative news on a Friday if they plan to sell on their own account. How much do they actually expect to gain from the strategic disclosure timing? Because I know the net dollar value of insider sales, and I find returns under-react by about 50 basis points during the three weeks after the disclosure, I can perform a back-of-the-envelope calculation to approximate how much managers expect to gain. I find the expected gains range from \$13 to \$85,200, with the average expected gain of \$12,271.

Even though this amount does not seem large, as long as managers disclose the information before they trade, the probability of being prosecuted for disclosing negative news on a Friday is negligible. Furthermore, this number is consistent with managerial behavior observed in other instances of insider trading. Many cases of illegal insider trading have occurred for what seem to be small gains relative to the managers' overall wealth. I summa-

rize some examples in Table 11. For example, Mark Cuban, the owner of Dallas Mavericks, avoided $750,000 in losses through insider trading.[15] Forbes estimates his net worth at $2.3 billion. Managers in my sample would have to have a net worth of almost $40 million for $12,271 to be a similar proportion of their overall wealth. Because an average company in the "small-company" sample has the market capitalization of $156 million, the managers do not take home millions of dollars in compensation.

One of the shortcomings of the paper is that I do not observe costs incurred by managers who disclose negative news on Fridays. These costs could include manager's reputation or career concerns. However, costs associated with strategically disclosing negative news on Fridays, are certainly lower than costs associated with illegal insider trading. Because the gains I find are in line with gains from insider trading, it is safe to assume that, at least for smaller companies, perceived costs from disclosure timing are lower than gains.

4.4 Wealth Effect

In untabulated analysis I examine whether managers' stake in the company makes them more or less likely to time disclosures. I obtain insider ownership data from ExecuComp. I generate a variable $InsOwnPrc$ equal to the number of shares owned by insiders divided by the number of shares outstanding in the market. I find that on average, smaller firms and firms with low analyst coverage have higher rates of insider ownership. I run the difference-in-difference version of the regression in Eq (3) with Fri as the dependent variable and with $InsOwnPrc$ and $Neg8K$ on the right-hand side. I run the regression for the entire sample, and just for small companies. I do not find managers' company ownership affects their propensity to time disclosures.

5 Investors (In)Attention to Friday Announcements

In this section, I use two measures of investor attention, previously used in the literature, to analyze whether attention is indeed lower on Fridays. If investors are more distracted on Fridays, the result should be lower attention to financial information. First, I look at daily Google searches for individual company tickers. Da, Engelberg, and Gao (2011) find that Google searches are a good measure of retail investors' attention. Because I show earlier that companies that engage in disclosure timing usually have a lot of retail investors, Google searches should capture the attention of the right audience. I also look at abnormal trading volume as a proxy for the number of people in the market who become aware of the

[15] http://dealbook.nytimes.com/2012/04/04/insider-trading-riddle-why-do-the-rich-risk-it/.

information.

5.1 Google Searches

Following Da, Engelberg, and Gao (2011), I use the number of Google searches on a given day to measure investors' attention to information about a company. If more investors are distracted on Fridays we should see fewer searches for the company.

Google Insight, a service run by Google, provides a daily search volume index (SVI) for search volumes above a certain (unspecified) threshold going back to January 2004. The index is not the raw number of searches (i.e., absolute traffic), but the popularity of the term relative to other search terms during the same time period.[16] This adjustment helps normalize the data for general internet usage. However, Google also scales the data by the highest search volume for a given search period. For example, if you search for "WMT" for February 2004, and the highest search volume for that period was on February 21, the search index that Google displays has SVI = 100 for February 21, and all other SVIs for that search period are relative to the SVI on February 21. Therefore, results across different search periods are not easily comparable. To get daily search results, I have to search one month at a time. To make daily SVI for a given company comparable over time, I obtain daily SVI_d, and I also perform a search over the entire time period at the weekly level for each company (which can be done in one search). I scale the daily SVI_d by the weekly SVI_w. Therefore, the SVI that I use for my analysis is

$$SVI = SVI_d * SVI_w/100 \ .$$

Because I am interested in capturing investors' attention, I want to exclude temporary surges in search volume that are unrelated to the events that I am analyzing. Similar to Da,

[16] One concern with using the search volume index is how to compare different days of the week. One explanation for lower interest on Fridays could be that the attention to a given company (proxied for by the SVI index) stays constant across different days of the week, but the search volume for other terms increases, and therefore the number of searches for the company decreases relative to searches for other terms. To try to control for this potential problem, I obtain total search data for "google.com" from a service called Alexa. Alexa.com provides daily visit statistics for most top-level domains. Alexa provides several statistics of page popularity. I use their "reach" measure, which tells me what percent of all unique internet users (that have installed the Alexa toolbar) visit a website on a given day. I obtain the daily reach data starting August 2007. In untabulated results, I show Google.com searches (which are a good proxy for the overall internet usage) are actually lower on Fridays (and the weekend) relative to Monday-Thursday. This result should alleviate some of the concerns using the SVI index to proxy for investors' demand for information.

Engelberg, and Gao (2011), I construct an abnormal SVI measure ($ASVI$):

$$ASVI_{k,t} = \frac{SVI_{k,t}}{MedSVI_{k,t-56\rightarrow t-35}} \ .$$

I use the natural logarithm of $ASVI$+1 to normalize the distribution, where $MedSVI_{k_{t-56\rightarrow t-35}}$ is the median of SVI over a five week period. The median over a long time period should capture the "normal" search volume index, and I am interested in deviations from the norm.

In my analysis, I follow Da, Engelberg, and Gao (2011) and Drake, Roulstone, and Thornock (2012), and use searches for the company's ticker symbol to gauge the number of searches for the company's financial information. I use ticker symbols instead of firm names for two reasons. First, people use many different versions of a company's name. Second, when people search for "Walmart," they are generally not looking for financial information about the company. Some ticker symbols are also common English terms (e.g., "CAT" or "MAN") and their search results include a lot of noise. I use several ways to try to identify those terms,[17] which I then exclude from my analysis. Overall I have 546,777 firm-day observations for 1,341 firms.

One shortcoming of the Google dataset is that the companies are larger than an average company in my sample. For very small companies the search volume is not large enough for Google to display the results. The median firm in the Google dataset has a market capitalization that is 2.5 times larger than the median firm in my overall sample. The fact that larger companies usually attract the attention of more institutional investors (Solomon and Soltes (2011)), should only bias me against finding results. According to Da, Engelberg, and Gao (2011), the search index primarily captures the attention of retail investors. Given that managers of companies with more retail investors are more likely to engage in disclosure timing, this measure is right for my setting.

To analyze whether investors' attention to information is lower if a company makes an 8-K announcement on a Friday, I compare the abnormal search volume index for announcements made on Fridays with announcements made Monday-Thursdays. I run the following OLS regression:

$$Log(ASVI+1)_{k,t} \quad = \quad \alpha + \delta 8K_{k,t} + \gamma Fri_t * 8K_{k,t} + \epsilon \ . \tag{9}$$

The regression includes month, year, and firm fixed effects, and standard errors are clustered

[17] First, I manually look through ticker symbols. Second, I search Google for each of the ticker symbols and only keep tickers for which financial information about the stock was the first search result. Being the top search result implies that for those tickers, the majority of searches are for financial information.

at the firm level. In the above regression, γ can be interpreted as the difference in abnormal search volume between releasing an announcement on a Friday versus Monday-Thursday.

Even if investors don't notice the announcement that is released on a Friday, the question arrises whether they find out the information later. To answer this question, I look at the average abnormal search volume the week before and two weeks after the announcement. I run the following regressions:

$$Log(ASVI+1)_{k,t+s\to t+s'} = \alpha + \delta 8K_{k,t} + \gamma Fri_t * 8K_{k,t} + \epsilon_{k,t} \ , \tag{10}$$

where the $\{s, s'\}$ pairs are $\{-7, -1\}$, $\{1, 7\}$, and $\{8, 14\}$ calendar days, respectively. All regressions include month, year and firm fixed effects, and standard errors are clustered at the firm level.[18] This set of regressions analyzes whether investors make up for the lackluster attention on the day of the announcement in the following weeks.

Table 12 presents the results for regressions in Eqs. (9) and (10). In column (1), I look at the abnormal search volume a week before the announcement. I want to make sure information leakage is not driving the difference in the search volume on the day of the announcement. As the results show, there is no difference in Google searches a week before the announcement between news disclosed on a Friday and Monday-Thursday. In column (2), I do find fewer searches occur on the day of the announcement if it was made on a Friday versus other days of the week. In columns (3) and (4), I separate the sample into high and low retail-investor companies. Because Google searches mostly capture the attention of retail investors, results for companies with a lot of retail investors should be more representative of how much overall attention the company attracts from its investors. As expected, companies with a lot of retail investors are the primary drivers of the under-reaction on Fridays. For companies with few retail investors, no difference exists between announcements made on Fridays versus non-Fridays. Results in columns (5) and (6) show the search volume after an 8-K filing is higher for about a week. No difference seems to exist between information disclosed on a Friday or other days of the week.

5.2 Volume

If some investors miss the Friday announcements, I expect the trading volume to be lower in the short term (Hou and Xiong (2009)). To analyze whether trading volume is lower if negative information is released on a Friday, I use my entire dataset (not just 8-K announcement days). I run the following OLS regression for the day of the announcement and 10 business

[18] I also rerun the analysis using Newey-West standard errors with seven lags and the results are similar.

days afterwards:

$$AbVol_{k,t} = \alpha + \beta_1 Neg8K_{k,t} + \beta_2 Fri_t * Neg8K_{k,t} + \text{Fixed Effects} + \epsilon_{k,t} \ . \tag{11}$$

In the above specification, $AbVol$ is the abnormal trading volume for company k on day t. I include year, month, and firm fixed effects. Standard errors are clustered at the firm level. I define the abnormal volume similar to Dellavigna and Pollet (2009), as the average log volume on day t minus the average log volume for the period t-40 to t-31 (10 trading days):

$$AbVol_{k,t} = \log(vol_{k,t}) - \frac{\sum_{u=31}^{40} \log(vol_{k,t-u})}{10} \ ,$$

where $vol_{k,t}$ is the number of shares traded on day t for company k.

First, I graph the abnormal trading volume around the disclosure date for negative news released on Fridays versus other days of the week. Figure 5 presents the graph. Day 0 is the disclosure day. We can see that before the disclosure, no difference in abnormal trading volume exists between Friday and non-Friday disclosures. However, once the news is disclosed, the abnormal trading volume goes up more for non-Friday disclosures and stays higher for about two weeks (10 trading days). To examine whether the difference is statistically significant, I run the regression in Eq (11). The results are presented in Table 13. When companies release negative 8-K information, the abnormal trading volume is 23% higher than on an average day (most days don't have any news disclosures). The abnormal volume stays higher for about two weeks. If the news is released on a Friday, however, the same-day abnormal trading volume is 8.6% lower than if it is released on a non-Friday. The lower level of abnormal trading volume persists for about a week, after which the difference between Friday and non-Friday negative announcements disappears. This result implies some investors seem to miss information disclosed on a Friday, at least in the short run.

6 Conclusion

Governments are notorious for trying to hide bad news by disclosing it when voters are distracted. For example, a British special advisor to the Labour party, Jo Moore, sent out an email on September 11, 2001, that read: "It's now a very good day to get out anything we want to bury. Councillors' expenses?"[19] It is not unreasonable to assume managers of companies might also be tempted to hide negative news from their investors. However, whereas politicians reap the benefit of uninformed voters during the next election, how

[19] Telegraph.co.uk (October 10, 2001).

managers could benefit is unclear, especially given findings in prior literature that investor inattention only causes a short-lived return under-reaction.

For most disclosure types, managers either have too much or too little discretion over timing, which makes showing that managers act strategically when they disclose negative news on Fridays challenging. In this paper, I use an SEC requirement that managers disclose material corporate events within five business days by filing an 8-K form, to show managers strategically disclose negative news when investors are distracted. Furthermore, I find that managers benefit from the price under-reaction when they sell shares on their own account following the announcement. Strategic timing of disclosures is mostly concentrated among small companies with a lot of retail investors who tend to be more distracted on Fridays than institutional investors.

More broadly, this paper provides evidence that managers try to take advantage of mispricing created by investor behavior. In general showing managers strategically take advantage of investors for their private benefit is empirically challenging. A question arises whether strategic disclosure timing is just the tip of the iceberg, and managers who try to hide negative news from their investors, engage in other types of behavior that might provide them with a private gain at the expense of shareholders. Answering this question is left for future research.

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Figure 1: This figure shows what percent of negative and non-negative events are disclosed on different days of the week.

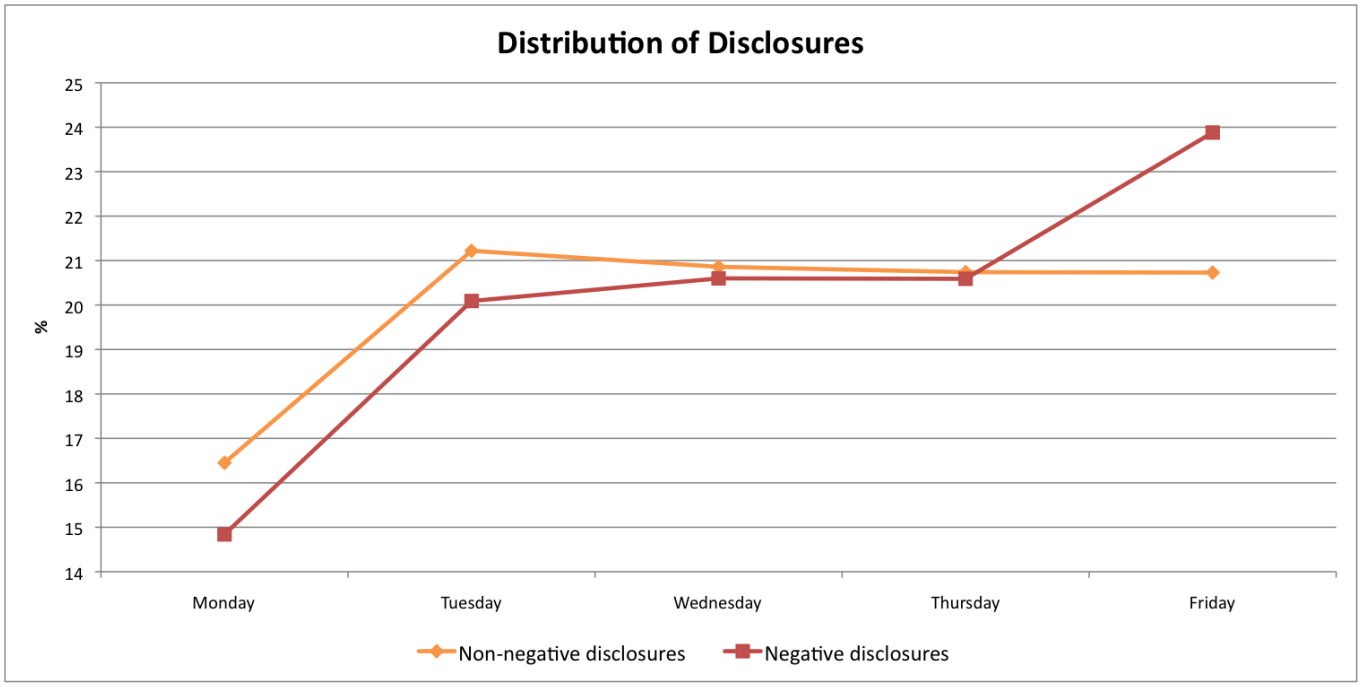
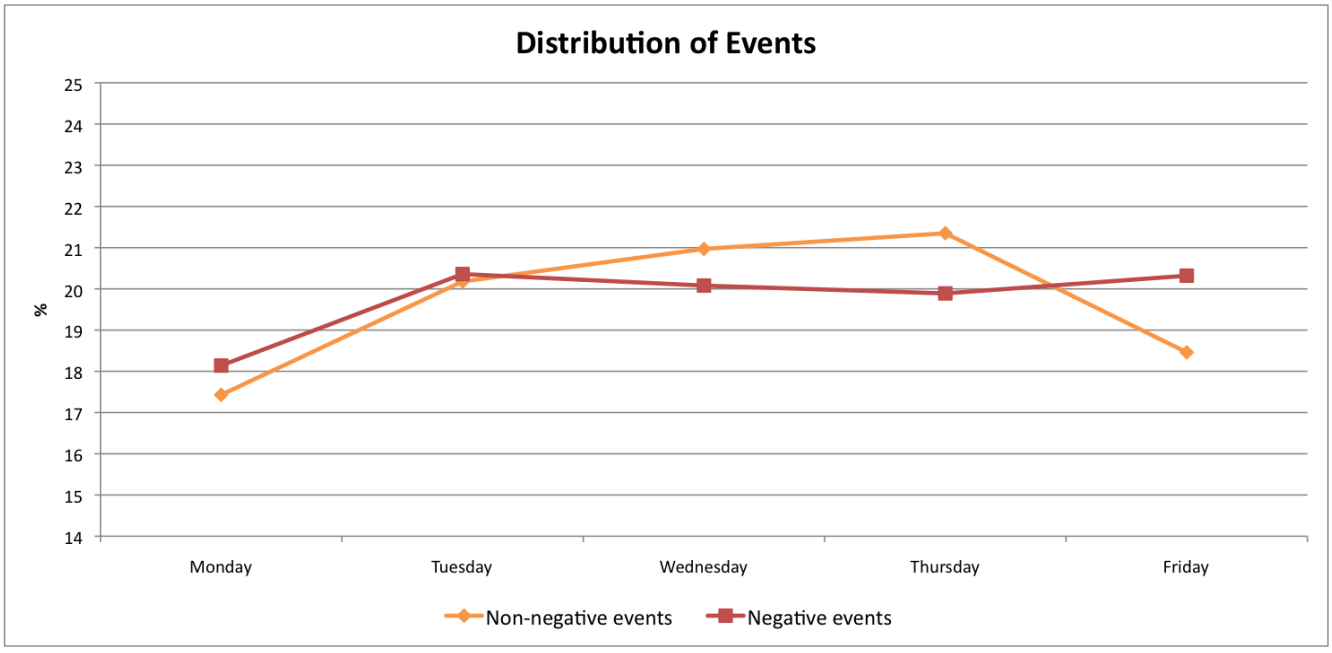
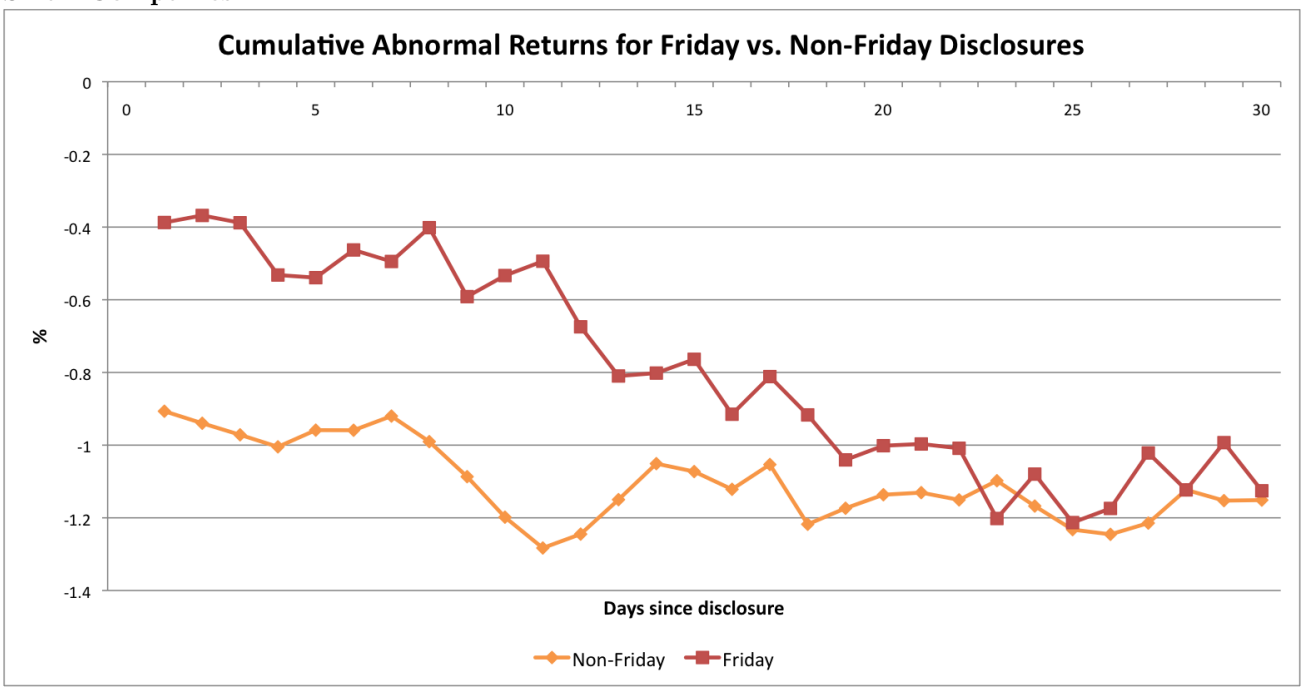


Figure 2: This figure shows what percent of negative and non-negative events occur on different days of the week.



Figures 3/4: The figures display the differences in cumulate abnormal returns between negative and non-negative disclosures. The cumulative abnormal return for each stock is the raw buy-and-hold return adjusted using the estimated beta from the market model. Day 0 is the disclosure day.

Small Companies:



Large Companies:

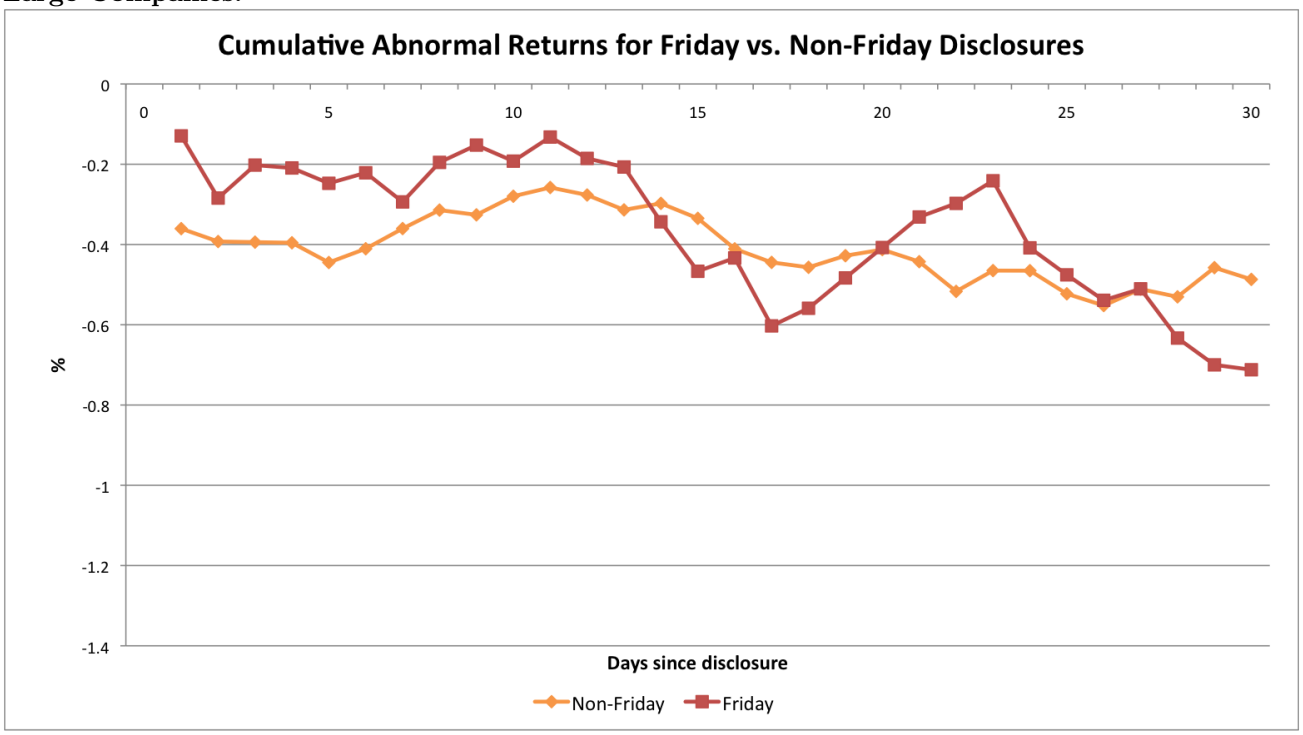


Figure 5: Abnormal trading volume is calculated as

$$AbVol_{k,t} = \log(vol_{k,t}) - \frac{\sum_{u=31}^{40} \log(vol_{k,t-u})}{10} \ ,$$

where $vol_{k,t}$ is trading volume for company k on day t. Day 0 is the disclosure day.

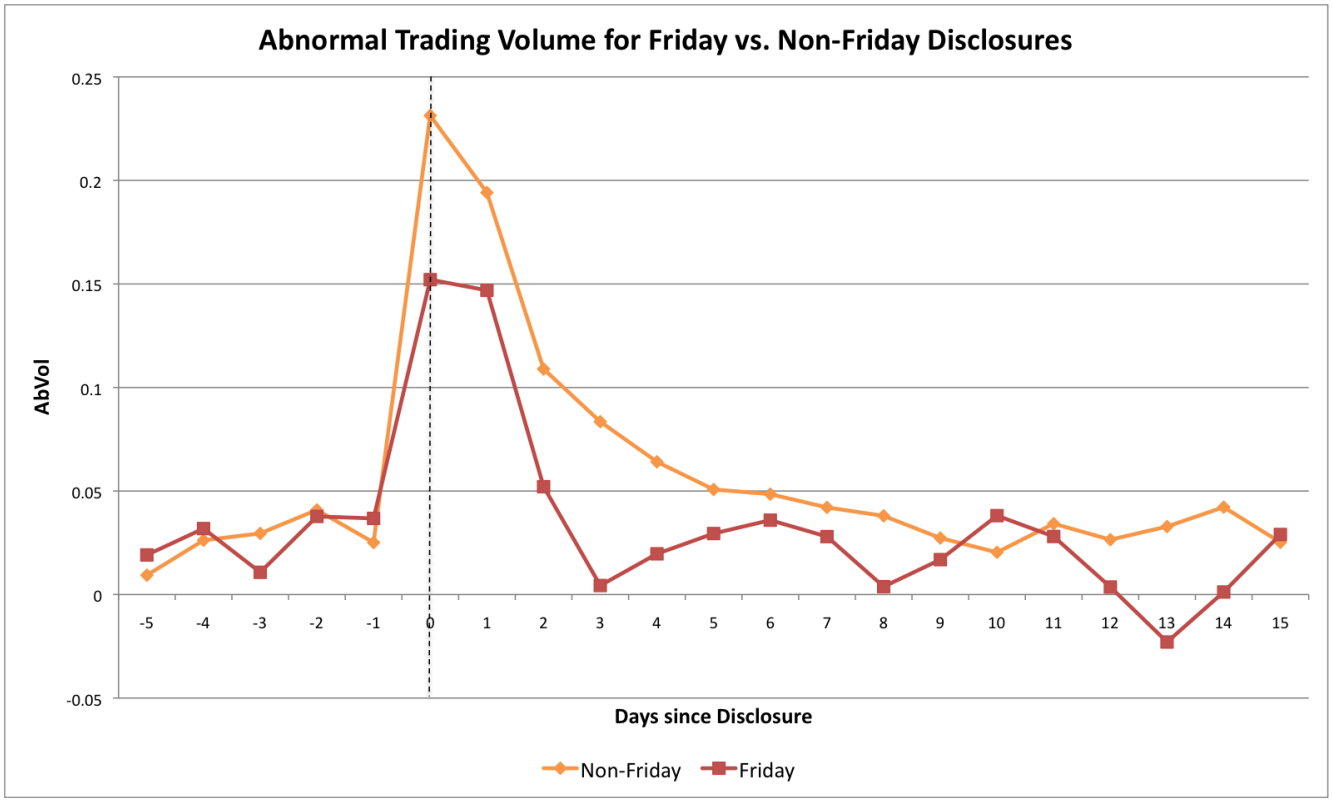


Table 1
8-K Items

This table displays the list of items I use in the paper. I classify an 8-K filing as ex-ante negative if it contains at least one of the seven negative items.

Item #	Neg.	8-K Item Description
Section 1		**Registrant's Business and Operation**
1.01		Entry into a Material Definitive Agreement
1.02	X	Termination of Material Definitive Agreement
Section 2		**Financial Information**
2.01		Completion of Acquisition or Disposition of Assets
2.03		Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant
2.04	X	Triggering Events That Accelerate or Increase a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement
2.05		Costs Associated with Exit or Disposal Activities
2.06	X	Material Impairments
Section 3		**Securities and Trading Markets**
3.01	X	Notice of Delisting or Failure to Satisfy a Continued Listing Rule or Standard; Transfer of Listing
3.02		Unregistered Sales of Equity Securities
3.03		Material Modification to Rights of Security Holders
Section 4		**Matters Related to Accountants and Financial Statements**
4.01	X	Changes in Registrant's Certifying Accountant
4.02	X	Non-Reliance on Previously Issued Financial Statements or a Related Audit Report or Completed Interim
Section 5		**Corporate Governance and Management**
5.01		Changes in Control of Registrant
5.02		Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers
5.03		Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year
5.04	X	Temporary Suspension of Trading Under Registrant's Employee Benefit Plans
5.05		Amendment to Registrant's Code of Ethics, or Waiver of a Provision of the Code of Ehics
Section 8		**Other Events**
8.01		Other Events (to report events that are not specifically called for by Form 8-K, that the registrant considers to be of importance to security holders.)
Section 9		**Financial Statements and Exhibits**
9.01		Financial Statements and Exhibits

Table 2
Summary Statistics

Panel A reports summary statistics for the number of 8-K forms filed by companies in my sample between August 23, 2004 and December 31, 2011. For the definition of negative filings, see Table 1. Panel B, reports summary statistics for companies that disclose news on Fridays versus other days of the week. Columns 1, 2, 4, and 5 report the means of market capitalization, percent of retail investors, and the number of analysts. Standard deviations are in parentheses. Columns 3 and 6 present the differences between columns 1 and 2, and 3 and 4, respectively.

Panel A: 8-K Forms Filed

	Mean	Std. dev	Min	Max
8-K filings	29.09	20.41	1	215
Neg 8-K filings	2.66	2.79	0	25

Panel B: Company Characteristics

	All 8-Ks			Negative 8-Ks		
	Friday	Non-Friday	Difference	Friday	Non-Friday	Difference
	(1)	(2)	(3)	(4)	(5)	(6)
Market Cap ($M)	6,092	5,333	758***	2,853	2,725	128
	[137.118]	[69.602]	[150.783]	[233.968]	[128.060]	[262.735]
% Retail Investors	0.42	0.418	0.002	0.509	0.479	0.030***
	[0.003]	[0.001]	[0.002]	[0.010]	[0.003]	[0.007]
Number of Analysts	10.494	10.351	0.143**	8.352	9.002	-0.650***
	[0.086]	[0.031]	[0.067]	[0.248]	[0.097]	[0.201]

Table 3
Filing Lag

This table reports LPM regressions of whether the distribution of events across different days of the week is driving the disclosure timing. The observations are at the company-day level. I run the following regression:

$$FileLagLength_{k,t} = \alpha + \beta_1 Neg8K_{k,t} + \beta_2 DowEvent_{k,t} + \beta_3 Neg8K_{k,t} * DowEvent_{k,t} + \text{Fixed Effects} + \epsilon_{k,t} \ .$$

$FileLagLength$ is a dummy for whether the filing lag = 0 (or 1, 2, 3 or 4, for different regressions). Filing lag is defined as the number of days between the event and the disclosure. $Neg8K$ is a dummy for whether the information disclosed by company k on date t is negative. For the definition of negative filings, see Table 1. $DowEvent$ is a dummy for whether the day of the week of the event is a Monday (or Tuesday, Wednesday, Thursday, or Friday for different regressions). I include month, year, and firm fixed effects. I have five different left-hand-side variables, and five different days of the week that I put on the right-hand side of the regression. Therefore, I run the regression 25 times. For clarity, I only present the interaction terms β_3 for the 25 regressions. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Dependent variable:	File Lag = 0	File Lag = 1	File Lag = 2	File Lag = 3	File Lag = 4
	(1)	(2)	(3)	(4)	(5)
Neg 8K x Event on Monday	-0.054***	-0.007	0.003	-0.023*	**0.077*** **
	[-3.924]	[-0.553]	[0.217]	[-1.654]	**[4.548]**
Neg 8K x Event on Tuesday	-0.01	-0.009	-0.038***	**0.104*** **	-0.037**
	[-0.720]	[-0.755]	[-3.387]	**[6.498]**	[-2.528]
Neg 8K x Event on Wednesday	-0.004	0.005	**0.045*** **	-0.021	-0.024
	[-0.296]	[0.389]	**[3.506]**	[-1.601]	[-1.533]
Neg 8K x Event on Thursday	0.007	**0.009**	0.009	-0.034**	0.007
	[0.507]	**[0.715]**	[0.823]	[-2.463]	[0.440]
Neg 8K x Event on Friday	**0.049*** **	-0.005	-0.009	-0.026*	-0.011
	[3.325]	[-0.372]	[-0.737]	[-1.900]	[-0.710]

Table 4
Friday Announcements

This table reports LPM regressions of whether managers are more likely to disclose negative news on Fridays. The observations are at the company-day level. Neg 8K is a dummy for whether the information disclosed by the company is negative. For the definition of negative filings, see Table 1. In columns 1-4, the dependent variable is a dummy for whether the news was disclosed on a Friday. In columns 1-3, I use the entire sample with different sets of fixed effects. In column 4, I exclude companies that either never or always disclose information on Fridays. In column 5, I only look at filings that were accompanied by a press release issued at least one business day before the filing. The dependent variable is a dummy for whether Form 8-K was filed on a Friday. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Dependent variable: Dummy for whether information was	disclosed on a Friday				filed on a Friday
	(1)	(2)	(3)	(4)	(5)
Neg 8K	0.028***	0.028***	0.026***	0.026***	0.02
	[6.593]	[6.523]	[5.696]	[5.678]	[1.099]
Observations	117,204	117,204	117,204	115,424	17,917
R-squared	0.052	0.051	0.094	0.09	0.236
Year FE	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes
Day of the event FE	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	No	No
Firm FE	No	No	Yes	Yes	Yes
Sample	Entire Sample	Entire Sample	Entire Sample	Switchers	Early PR

Table 5
Company Characteristics and Friday Announcements

Panel A reports LPM regressions of whether small companies, companies with a lot of retail investors, and companies with low analyst following are more or less likely to disclose negative news on Fridays. The characteristics are market capitalization, % of retail investors, and the number of analysts. The dependent variable is a dummy for whether the news was disclosed on a Friday. Neg 8K is a dummy for whether the information disclosed by the company is negative. For the definition of negative filings, see Table 1. Panel B reports LMP regressions for subsamples. The dependent variable is a dummy for whether the news was disclosed on a Friday. Column 1 reports results for companies that had below-the-median market capitalization in the previous calendar year, and column 2 reports results for companies that had above-the-median market capitalization in the previous calendar year. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Panel A: Company Characteristics

Dependent variable: Dummy for whether the news was disclosed on a Friday

	(1)	(2)	(3)	(4)
Neg 8K	0.196***	-0.008	0.062***	0.121***
	[7.224]	[-1.013]	[8.054]	[2.588]
Log(ME)	0.003***			0.005***
	[3.881]			[4.358]
Neg 8K x Log(ME)	-0.013***			-0.008**
	[-6.273]			[-2.158]
% Retail Investors		-0.008		0.001
		[-1.505]		[0.196]
Neg 8K x % Retail Investors		0.078***		0.033
		[5.350]		[1.572]
Log(Num Analysts + 1)			0.002	-0.006**
			[1.526]	[-2.468]
Neg 8K x Log(Num Analysts + 1)			-0.021***	-0.003
			[-5.463]	[-0.460]
Observations	115,424	115,424	115,424	115,424
R-squared	0.054	0.053	0.053	0.054
Year FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Day of the event FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Panel B: Friday Annoucements

Dependent variable: Dummy for whether the news was disclosed on a Friday

	(1)	(2)
Neg 8K	0.046***	0.001
	[7.167]	[0.083]
Observations	51,557	63,867
R-squared	0.091	0.104
Year FE	Yes	Yes
Month FE	Yes	Yes
Day of the event FE	Yes	Yes
Firm FE	Yes	Yes
Sample	Small Firms	Large Firms

Table 6
Disclosures around National Holidays

This table reports LMP regressions of whether managers are more likely to disclose negative news before national holidays. The observations are at the company-day level. I only include companies that had below-the-median market capitalization in the previous calendar year. The dependent variable is a dummy for whether the news was disclosed on the last business day before Memorial Day, Independence Day, Labor Day, Christmas, New Year's, or either on the Wednesday or the Friday before/after Thanksgiving. Neg 8K is a dummy for whether the information disclosed by the company is negative. For the definition of negative filings, see Table 1. In columns 1 and 2, I analyze the entire sample with different sets of fixed effects. In column 3, I only look at news disclosed Monday-Thursday, and in column 4, I only look at news disclosed on Fridays. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Dependent variable: Dummy for whether the news was disclosed on the last business day before a national holiday				
	(1)	(2)	(3)	(4)
Neg 8K	0.009***	0.005**	0.006**	0.003
	[3.896]	[2.256]	[2.576]	[0.390]
Observations	51,557	51,557	40,521	11,036
R-squared	0.00	0.101	0.116	0.314
Year FE	No	Yes	Yes	Yes
Month FE	No	Yes	Yes	Yes
Day of the event FE	No	Yes	Yes	Yes
Day of the disclosure FE	No	Yes	Yes	Yes
Firm FE	No	Yes	Yes	Yes
Sample	Entire Sample	Entire Sample	Non-Fridays	Fridays

Table 7
After the Market Closes

This table reports LPM regressions of whether managers are more likely to disclose negative news after the market closes. The observations are at the company-day level. I only include companies that had below-the-median market capitalization in the previous calendar year. The dependent variables are dummies for whether the disclosure time falls in the ranges 6:00am-9:30am, 4:00pm-5:30pm, and 5:30pm-10:00pm, respectively. In columns 1-4, I only include disclosures that were not accompanied by a press release, because I do not know the exact disclosure time for press releases. In columns 5-6, I only include disclosures with a press release that was made public at least one business day before the 8-K filing. Neg 8K is a dummy for whether the information disclosed by the company is negative. For the definition of negative filings, see Table 1. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

	BMO	AMC	AMC	AMC	BMO	AMC
Dependent Variables:	6:00am-9:30am	4:00pm-5:30pm	4:00pm-5:30pm	5:30pm-10:00pm	6:00am-9:30am	4:00pm-5:30pm
	(1)	(2)	(3)	(4)	(5)	(6)
Neg 8K	-0.005**	0.074***	0.073***	-0.006	0.001	-0.034
	[-1.999]	[7.573]	[6.661]	[-1.116]	[0.111]	[-1.092]
Friday			-0.01			
			[-1.411]			
Neg 8K x Friday			0.065***			
			[3.610]			
Observations	32,927	32,927	32,927	32,927	8,420	8,420
R-squared	0.139	0.188	0.188	0.131	0.312	0.305
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Day of the event FE	Yes	Yes	Yes	Yes	Yes	Yes
Day of the disclosure FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Sample		Filings without a PR			Filings with early PR	

Table 8
Cumulative Return Reaction

This table reports OLS regressions of whether prices under-react to negative information disclosed on a Friday. The dependent variable is the cumulative abnormal return over the given time period. The cumulative abnormal return for each stock is the raw buy-and-hold return adjusted using the estimated beta from the market model. Day 0 is the disclosure date. Neg 8K is a dummy for whether the information disclosed by the company is negative. For the definition of negative filings, see Table 1. Panel A displays results for companies that had below-the-median market capitalization in the previous calendar year. Panel B displays results for companies that had above-the-median market capitalization in the previous calendar year. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the date level. T-statistics are reported in parentheses.

Panel A: Small Firms							
Dependent variable:	Ret -5 to 0	Ret 0 to 1	Ret 0 to 5	Ret 0 to 10	Ret 0 to 15	Ret 0 to 20	Ret 0 - 25
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Neg 8K	0.001	-0.009***	-0.009***	-0.011***	-0.009***	-0.010***	-0.008**
	[0.588]	[-6.926]	[-4.384]	[-4.300]	[-3.329]	[-2.900]	[-2.244]
Friday	0.001	-0.002*	-0.002*	-0.004**	-0.005***	-0.006***	-0.007**
	[0.945]	[-1.954]	[-1.762]	[-2.325]	[-2.681]	[-2.966]	[-2.221]
Friday x Neg 8K	-0.004	0.006**	0.004**	0.008**	0.005*	0.004	0.001
	[-0.881]	[2.254]	[2.181]	[1.964]	[1.664]	[0.573]	[0.114]
Observations	51,557	51,557	51,557	51,557	51,557	51,557	51,557
R-squared	0.081	0.077	0.082	0.091	0.103	0.113	0.131
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day of the event FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Large Firms							
Dependent variable:	Ret -5 to 0	Ret 0 to 1	Ret 0 to 5	Ret 0 to 10	Ret 0 to 15	Ret 0 to 20	Ret 0 - 25
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Neg 8K	-0.001	-0.003***	-0.003***	-0.002	-0.002	-0.002	-0.002
	[-0.252]	[-3.698]	[-2.699]	[-1.533]	[-1.108]	[-0.946]	[-0.959]
Friday	-0.001	-0.001*	0	0	0	0	0.001
	[-1.020]	[-1.827]	[0.709]	[-0.074]	[0.387]	[0.183]	[0.992]
Friday x Neg 8K	0.002	0.002	0.002	0	-0.001	0.001	**-0.001**
	[0.524]	[1.418]	[0.844]	[0.126]	[-0.258]	[0.208]	**[-0.215]**
Observations	63,867	63,867	63,867	63,867	63,867	63,867	63,867
R-squared	0.053	0.051	0.056	0.062	0.069	0.077	0.092
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day of the event FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 9
Calendar-Time Portfolios

This table reports OLS regressions of whether prices under-react to negative information if it is disclosed on a Friday, using calendar-time portfolios. On day t, for a given window $t-P$ to $t-p$, where {P,p} $\in$ [{2,0},{5,3},{10,3},{15,3},{20,3},{25,3}], I calculate equal-weighted returns of four portfolios. The first portfolio includes all companies that disclosed negative information on a Friday during the window. The second portfolio includes all companies that disclosed negative information on a Monday-Thursday during the window. I construct the third and the fourth portfolios similarly for non-negative announcements. I repeat this procedure daily, keeping the same size windows. I run the following OLS regression:

$$Ab\_Ret_{t-P\rightarrow t-p} = \alpha + \beta_1 Fri_t + \beta_2 Neg8K_{k,t} + \beta_3 Fri_t * Neg8K_{k,t} + \epsilon_{k,t} \ ,$$

where $Ab\_Ret_{t-P\rightarrow t-p}$ is the equal-weighted abnormal return for each of the four calendar-time portfolios. To calculate abnormal returns, I subtract out the equal-weighted market return on day t. Neg 8K is a dummy for whether the information disclosed by the company is negative. For the definition of negative filings, see Table 1. Standard errors are robust to heteroskedasticity and clustered at the date level date. T-statistics are reported in parentheses.

Panel A: Small Firms

Dependent variable:	Ret -2 to 0	Ret -5 to -3	Ret -10 to -3	Ret -15 to -3	Ret -20 to -3	Ret -25 to -3
	(1)	(2)	(3)	(4)	(5)	(6)
Neg 8K	-0.0028***	0.0011	0.0006	0.0004	0.0004	-0.0011
	[-2.9950]	[1.4996]	[1.1513]	[0.8818]	[1.0265]	[-0.7495]
Friday	-0.0003	0.0014*	0.0000	0.0004	0.0003	-0.0012
	[-0.3854]	[1.8143]	[-0.0467]	[0.6260]	[0.5001]	[-0.7446]
Friday x Neg 8K	**0.0059****	**-0.0018**	**-0.0020****	**-0.0018****	**-0.0016***	**0.0003**
	[1.99273]	**[-0.6635]**	**[-2.0805]**	**[-2.0004]**	**[-1.8109]**	**[0.2084]**
Observations	5,584	5,745	7,033	7,204	7,273	7,322
R-squared	0.0012	0.0002	0.0014	0.0007	0.0007	0.0004

Panel B: Large Firms

Dependent variable:	Ret -2 to 0	Ret -5 to -3	Ret -10 to -3	Ret -15 to -3	Ret -20 to -3	Ret -25 to -3
	(1)	(2)	(3)	(4)	(5)	(6)
Neg 8K	-0.0012**	-0.0005	0.0001	0.0001	0.0002	0.0001
	[-2.2619]	[-1.3290]	[0.2575]	[0.4549]	[1.1391]	[0.7464]
Friday	0.0006	0.0019***	0.0003	0.0001	0.0001	0.0001
	[1.6294]	[2.7231]	[1.6120]	[0.8078]	[1.2817]	[1.1199]
Friday x Neg 8K	**0.0007**	**-0.0003**	**-0.0002**	**-0.0004**	**-0.0003**	**-0.0004**
	[0.6848]	**[-0.3102]**	**[-0.4266]**	**[-1.0377]**	**[-0.9646]**	**[-0.4430]**
Observations	5,591	5,651	7,065	7,197	7,235	7,255
R-squared	0.0015	0.0028	0.0001	0.0002	0.0001	0.0002

Table 10
Insider Trading

This table reports LPM regressions of whether managers are more likely to disclose negative news on a Friday if they are planning to trade on their own account in the three weeks following the disclosure. The observations are at the company-day level. I only include companies that had below-the-median market capitalization in the previous calendar year. The dependent variable is a dummy for whether the news was disclosed on a Friday. Neg 8K is a dummy for whether the information disclosed by the company is negative. For the definition of negative filings, see Table 1. Columns 1 and 2 include all insiders who have to file Form 4 with the SEC. In columns 3 and 4, I separate the insiders into top managers and non top managers. I define top managers as CEOs, board chairmen, presidents, CFOs, COOs, and general counsels. Net Sales is the dollar value of all insider sales minus the dollar value of all insider purchases in the three weeks following a disclosure if Net Sales > 0, and 0 otherwise. Net Purchases is the dollar value of all insider purchases minus the dollar value of all insider sales in the three weeks following a disclosure if Net Purchases > 0, and 0 otherwise. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Dependent variable: Dummy for whether the news was disclosed on a Friday				
	(1)	(2)	(3)	(4)
Neg 8K	0.046***	0.042***	0.045***	0.041***
	[5.654]	[4.945]	[5.659]	[5.024]
All Insiders:				
Log(Net Sales + 1)	0	0		
	[-0.515]	[0.229]		
Neg 8K x Log(Net Sales + 1)	**0.003***	**0.003***		
	[1.731]	**[1.876]**		
Log(Net Purchases + 1)	0	0.001		
	[0.559]	[1.144]		
Neg 8K x Log(Net Purchases + 1)	**0.001**	**0.001**		
	[0.228]	**[0.335]**		
Top Managers:				
Log(Net Sales + 1)			0	0.001
			[-0.073]	[0.699]
Neg 8K x Log(Net Sales + 1)			**0.004***	**0.005****
			[1.926]	**[1.981]**
Log(Net Purchases + 1)			0.001	0.001
			[0.517]	[0.406]
Neg 8K x Log(Net Purchases + 1)			**-0.005**	**-0.005**
			[-1.327]	**[-1.279]**
Non "Top Managers":				
Log(Net Sales + 1)			-0.001	0
			[-1.187]	[-0.731]
Neg 8K x Log(Net Sales + 1)			**0.001**	**0.001**
			[0.545]	**[0.596]**
Log(Net Purchases + 1)			0	0.001
			[0.412]	[1.103]
Neg 8K x Log(Net Purchases + 1)			**0.003**	**0.003**
			[1.227]	**[1.243]**
Observations	45,236	45,236	45,236	45,236
R-squared	0.01	0.06	0.01	0.06
Year FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Day of the event FE	Yes	Yes	Yes	Yes
Industry FE	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes

Table 11
Illegal Insider Trading

This table lists several insider traders who got caught by the SEC. The table displays how much the SEC claimed the insider gained (or avoided in losses) and the punishment received.

Name	**Gains/Avoided Losses**	**Penalty**
Martha Stewart	$45,000	6 months in jail
Mark Cuban (Mavericks)	$750,000	Currently fighting a lawsuit
Noah J. Griggs, J (CKE Restaurants)	$145,430	Can't serve as an officer or director of a public company for ten years
Joseph Ceranzia (CONSOL Energy)	$5,690	Settled
Michael Hendry (Pacific Select Distributors, Inc)	$69,955	Barred from the securities business

Table 12
Google Searches

This table reports OLS regressions of whether Google Searches for the company ticker are lower if the negative information is disclosed on a Friday. The dependent variable is the average log abnormal search volume index (ASVI) for the given time period. Day 0 is the disclosure day. For the exact definition of ASVI, refer to the text. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Dependent variable: Log(ASVI+1)	-7 to -1 days	Day 0	Day 0	Day 0	1 to 7 days	8 to 14 days
	(1)	(2)	(3)	(4)	(5)	(6)
8K	0.002	0.013***	0.016***	0.012***	0.004**	-0.002
	[0.320]	[5.327]	[3.170]	[4.383]	[2.372]	[-0.968]
Friday x 8K	-0.002	-0.010**	-0.020**	-0.005	-0.001	0.002
	[-0.602]	[-2.280]	[-2.530]	[-0.923]	[-0.151]	[0.443]
Observations	546,777	546,777	188,822	357,955	546,777	546,777
R-squared	0.059	0.056	0.062	0.053	0.074	0.077
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Entire Sample	Entire Sample	High Retail	Low Retail	Entire Sample	Entire Sample

Table 13
Volume Response to Friday versus non-Friday Negative Announcements

This table reports OLS regressions of whether abnormal trading volume is lower if negative information is disclosed on a Friday. I only include companies that had below-the-median market capitalization in the previous calendar year. I define abnormal trading volume as the average log volume on day t, divided by the average log volume for the period t-40 to t-31: $AbVol_{k,t} = \log(vol_{k,t}) - \frac{\sum_{u=31}^{40} \log(vol_{k,t-u})}{10}$. Day 0 is the disclosure day. Neg 8K is a dummy for whether the information disclosed by the company is negative. For the definition of negative filings, see Table 1. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Dependent Variable: abnormal trading volume	t=0	t=1	t=2	t=3	t=4	t=5	t=6	t=7	t=8	t=9	t=10
Neg 8K	0.231***	0.205***	0.122***	0.093***	0.081***	0.066***	0.052***	0.042***	0.041***	0.032**	0.032**
	[15.183]	[13.358]	[8.257]	[6.433]	[5.690]	[4.646]	[3.728]	[3.023]	[2.924]	[2.346]	[2.269]
Friday x Neg 8K	-0.085**	-0.056*	-0.072**	-0.083***	-0.057*	-0.033	-0.007	0	-0.027	-0.001	0.021
	[-2.508]	[-1.648]	[-2.117]	[-2.581]	[-1.723]	[-0.980]	[-0.237]	[-0.013]	[-0.867]	[-0.040]	[0.712]
Observations	2,579,244	2,579,244	2,579,244	2,579,244	2,579,244	2,579,244	2,579,244	2,579,244	2,579,244	2,579,244	2,579,244
R-squared	0.009	0.009	0.008	0.008	0.008	0.008	0.008	0.008	0.009	0.009	0.009
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix

Table 1A: Friday Disclosures Using Return Classification

This table reports LPM regressions of whether managers are more likely to disclose negative news on Fridays. The observations are at the company-day level. Neg 8K is a dummy for whether the information disclosed by the company is negative. I define a filing as negative if the abnormal return in the three days around the disclosure is less than zero. In columns 1-6, the dependent variable is a dummy for whether the news was disclosed on a Friday. In columns 1-3, I use the entire sample with different sets of fixed effects. In column 4, I exclude companies that either never or always disclose information on Fridays. Column 5 reports results for companies that had below-the-median market capitalization in the previous calendar year, and column 6 reports results for companies that had above-the-median market capitalization in the previous calendar year. In column 7, I only look at filings that were accompanied by a press release issued at least one business day before the filing. The dependent variable is a dummy for whether Form 8-K was filed on a Friday. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Dependent variable: Dummy for whether information was	disclosed on a Friday						filed on a Friday
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Neg 8K	0.021**	0.022**	0.023*	0.022*	0.041***	-0.001	0.004
	[2.346]	[2.370]	[1.853]	[1.864]	[3.004]	[-0.209]	[0.498]
Observations	117,204	117,204	117,204	115,424	51,557	63,867	17,917
R-squared	0.05	0.05	0.09	0.09	0.09	0.10	0.24
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Day of the event FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	No	No	No	No
Firm FE	No	No	Yes	Yes	Yes	Yes	Yes
Sample	Entire Sample	Entire Sample	Entire Sample	Switchers	Small Firms	Large Firms	Early PR

Table 2A: Insider Trading Using Return Classification

This table reports LPM regressions of whether managers are more likely to disclose negative news on a Friday if they are planning to trade on their own account in the three weeks after the disclosure. The observations are at the company-day level. I only include companies that had below-the-median market capitalization in the previous calendar year. The dependent variable is a dummy for whether the news was disclosed on a Friday. Neg 8K is a dummy for whether the information disclosed by the company is negative. I define a filing as negative if the abnormal return in the three days around the disclosure is less than than zero. Columns 1 and 2 include all insiders who have to file Form 4 with the SEC. In columns 3 and 4, I separate the insiders into top managers and non top managers. I define top managers as CEOs, board chairmen, presidents, CFOs, COOs, and general counsels. Net Sales is the dollar value of all insider sales minus the dollar value of all insider purchases in the three weeks following a disclosure if Net Sales > 0, and 0 otherwise. Net Purchases is the dollar value of all insider purchases minus the dollar value of all insider sales in the three weeks following a disclosure if Net Purchases > 0, and 0 otherwise. The intercepts are not reported. Standard errors are robust to heteroskedasticity and clustered at the firm level. T-statistics are reported in parentheses.

Dependent variable: Dummy for whether the news was disclosed on a Friday				
	(1)	(2)	(3)	(4)
Neg 8K	0.032**	0.030**	0.031**	0.030**
	[2.414]	[2.062]	[2.419]	[1.999]
All Insiders:				
Log(Net Sales + 1)	0	0		
	[-0.782]	[-0.194]		
Neg 8K x Log(Net Sales + 1)	**0.001***	**0.001***		
	[1.616]	**[1.779]**		
Log(Net Purchases + 1)	0.001	0.001		
	[0.570]	[1.069]		
Neg 8K x Log(Net Purchases + 1)	**0**	**0**		
	[-0.137]	**[-0.037]**		
Top Managers:				
Log(Net Sales + 1)			-0.001	0
			[-1.269]	[-0.060]
Neg 8K x Log(Net Sales + 1)			**0.003***	**0.004****
			[1.929]	**[2.456]**
Log(Net Purchases + 1)			0	0
			[0.006]	[-0.202]
Neg 8K x Log(Net Purchases + 1)			**0**	**0.001**
			[0.213]	**[0.237]**
Non "Top Managers":				
Log(Net Sales + 1)			0	-0.001
			[-0.540]	[-0.912]
Neg 8K x Log(Net Sales + 1)			**0**	**0.001**
			[-0.140]	**[0.645]**
Log(Net Purchases + 1)			0.001	0.001
			[1.033]	[1.147]
Neg 8K x Log(Net Purchases + 1)			**-0.001**	**0**
			[-0.547]	**[-0.125]**
Observations	45,236	45,236	45,236	45,236
R-squared	0.04	0.10	0.04	0.07
Year FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Day of the event FE	Yes	Yes	Yes	Yes
Industry FE	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes

Figure 1A: This figure shows what percent of negative and non-negative events are disclosed on different days of the week. I exclude weeks that include a federal holiday.

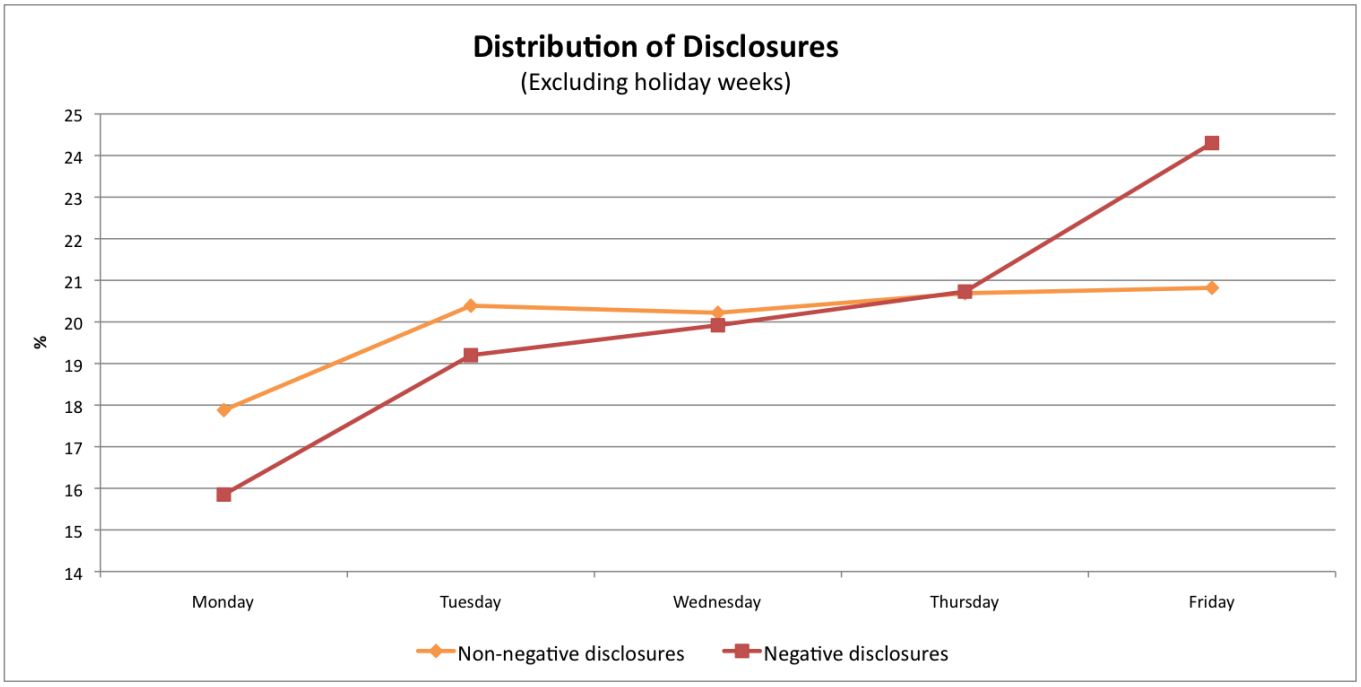


Figure 2A: This figure shows what percent of negative and non-negative events occur on different days of the week. I exclude weeks that include a federal holiday.