

How firms manage investors' attention: Evidence from advance notice period prior to earnings news^{*}

ROMAIN BOULLAND[†] and OLIVIER DESSAINT[‡]

Abstract

Firms must notify the date and time of earnings announcements to market participants before the event (the "advance notice period"). We find that such advance notice period varies within firm and that its variation affects how much investors pay attention to earnings news. Using various measures of investors' attention – including attendance to earnings conference call and trading volume – we find that investors are more attentive when the date and time of earnings disclosure is scheduled far in advance. This variation in investors' attention affects short-run and long-run stock prices, thereby creating incentives for firms to strategically reduce the advance notice period when they plan to disclose bad news. Consistent with this idea, we find that within-firm variations in the advance notice period predict the earnings surprise. A trading strategy that exploits such variations yields abnormal returns of 1.7% per month.

November 2013

^{*} We would like to especially thank François Degeorge, François Derrien, and Edith Ginglinger for their constant guidance and support. We also thank Paul Karehnke, Dong Lou, Adrien Matray, Mario Milone, Chay Ornthanalai, Wendy Rotenberg, Daniel Schmidt, David Thesmar, Kent Womack, and seminar participants at HEC Paris for their comments and suggestions. Part of this work was conducted while the first author was a visiting student at the Rotman School of Management (University of Toronto) whose hospitality is gratefully acknowledged.

[†] IESEG School of Management

[‡] HEC Paris

"The fundamental scarcity in the modern world is scarcity of attention."

Herbert A. Simon

Introduction

During earnings announcement seasons, investors need to digest news from numerous companies in a very short period of time. At the peak of the season, about 250 US firms announce their earnings on the same day. While prior research shows that investors' limited attention is central to explain how stock prices incorporate earnings news during this period, little evidence exists that this attention constraint also matters for managers who care about the value of their firm's stocks.¹

This paper examines the effects of investors' limited attention on corporate managers' decisions. The question we ask is whether managers take investors' inattention into account when preparing their audience to the forthcoming earnings announcement. To answer this question, we study the notification process by which managers make investors aware of the date and time of earnings announcement events. We use a new dataset of circa 53,000 press releases by US firms over the 2007-2012 period which announce the date, time, conference call number and other details about the organization of their earnings release to market participants (the "notice of earnings"). On average, such details are released ten days before the event (the "advance notice period").² We argue that the choice of this advance notice period affects investors' attention to earnings news and that firm managers use this notification period to strategically manage investors' attention.

¹ Prior literature finds that stock prices under-react to earning news when multiple firms announce their earnings on the same day (Hirshleifer, Lim, and Teoh 2009), on Friday (DellaVigna and Pollet 2009), or when media coverage is low (Peress 2008). However, little evidence exists that managers exploit investors' inattention when announcing their earnings. Doyle and Magilke (2009) for instance find no evidence that firms opportunistically release bad earnings on Friday or outside the market hours.

² For the sake of clarity, we call the action of communicating the date, time and any other organizational detail about earnings releases "notice of earnings". We call the action of disclosing quarterly earnings information "earnings announcement" or "earnings release". As illustrated in Figure 3, the "advance notice period" is the number of days between the date of the first notice of earnings and the earnings announcement date.

There are two reasons why the advance notice period can cause higher or lower attention. First, investors with a crowded agenda face a selection issue when deciding which earnings announcement they will focus on. Therefore, a simple rule of thumb is to follow the order in which investors receive the notices of earnings. This “first-come, first-served” rule implies that a longer advance notice period increases the probability that the announcing firm is first on investors' agenda. Second, a notice of earnings for a given firm can coincide with other relevant information, such as earnings announcements by other firms. In this case, such a notice of earnings will most likely be overlooked by investors. Indeed, investors whose attention is limited will then focus on news with the most valuable content (earnings announcements by other firms) and ignore the notice of earnings. Since earnings announcements are seasonal, this overlap problem is more likely to occur when the advance notice period is short.³ By contrast, a longer advance notice period reduces the risk that a notice of earnings competes with simultaneous earnings announcements for investors' attention, thereby increasing the probability that investors include the event in their agenda.

Consistent with those predictions, we find that an increase in the advance notice period leads to higher attention to earnings news. We measure investors' attention using attendance to earnings conference calls. Controlling for known determinants of investors' attention as well as firm fixed-effects, we find that the number of conference call participants increases when the date and time of the earnings announcement are notified earlier. To complement this analysis, we use the abnormal trading volume as an alternative measure of investors' attention (e.g. Gervais, Kaniel, and Mingelgrin 2001; Barber and Odean 2008; Hou, Xiong, and Peng 2009). Again, we find that investors are more attentive on d-day when earnings release details are communicated well ahead of time. Specifically, we compare firms that announce their

³ A short advance notice period for a given firm implies that the date of its notice of earnings is very close to its earnings announcement date. Since earnings announcements are seasonal and thus occur around the same dates, it is then very likely that the date of this notice of earnings coincide with the date of earnings release by other firms. Figure 1 illustrates very clearly this possibility of overlapping dates between both type of news.

earnings within the same day (day of announcement fixed effects). Controlling for the magnitude of the earning surprise and firm heterogeneity (firm fixed-effects), we find that firms with longer advance notice periods have higher abnormal trading volumes.

Next, we investigate whether the variation in the advance notice period affects the speed of earnings news incorporation into stock prices. DellaVigna and Pollet (2009) and Hirshleifer and Teoh (2003) predict that higher inattention leads to lower immediate stock price reaction and higher post-earnings announcement drift. Consistent with their predictions, we find that a longer advance notice period increases the immediate reaction to earnings announcements and decreases the post-earnings announcement drift. Overall, these results indicate that a short notice period hurts investors' attention on earnings announcement day, which reduces stock price immediate reaction to earnings news.

We then proceed to the central question of this paper and examine whether managers strategically use investors' limited attention by making shorter notice period when they are about to disclose bad news. Consistent with this idea, we find that for a given firm, the earnings surprise decreases on average by almost one cent when the notice of earnings is sent one week later. In other words, within-firm variations in the advance notice period predict the earnings surprise. This finding holds after controlling for delays in earnings releases or when focusing on the subsample of firms that consistently report their earnings on the same date. Therefore, our effect is not driven by the well documented behavior that managers tend to announce good news early and bad news late (Kross and Schroeder, 1984, Begley and Fischer, 1998, and Bagnoli, Kross, and Watts, 2002). While consistent with the "good news early / bad news late" practice documented by the accounting literature, our finding differs from this strand of research by showing that managers' communication ahead of the earnings announcement day also conveys information about earnings news that is not contained in the choice of the announcement date.

Next, we investigate how managers' response to investors' inattention varies across firms. First, not all managers can exploit investors' inattention. In particular, managers of highly visible firms whose stock is consistently scrutinized by the market do not have this possibility. Consistent with this idea, we find that a change in the advance notice period is much more informative about the earnings surprise for less visible firms, i.e. firms with the same fiscal year-end as their industry peers, which thus report earnings at the same moment as their competitors, firms with low analysts coverage, and small-cap companies. Second, some managers may care more about the short-term value of their firm's stock. For instance, managers who plan to issue new equity should focus more on maximizing their current stock price as well as managers of firms with short-term oriented shareholders. Consistent with this intuition, we find that a change in the advance notice period is more informative about the earnings surprise when firms issue equity in the subsequent quarter or when their share turnover was high at the end of the previous quarter. Overall, this second set of results suggests that firm managers respond strategically to investors' limited attention by making shorter or longer advance notice period when it is in their interest to do so.

Finally, we investigate whether investors anticipate the implication of earnings notification on future earnings surprise. Indeed, investors may detect firm's strategic behavior regarding the choice of the advance notice period. In this case, they may react positively to early notices and negatively to late notices. If so, the market reaction to the notice of earnings would be positively correlated with the advance notice period. We fail to find such a correlation, which suggests that a majority of investors do not perceive the implications of a change in the advance notice period.

Consistent with this interpretation, we show that it is possible to build a trading strategy that takes advantage of the predictive power of the within-firm variation in the advance notice period. Such a strategy consists in (i) buying stocks when the notice of

earnings is issued earlier than the notice of earnings issued one-year ago for the same fiscal quarter, and (ii) selling stocks when this notice of earnings is issued later. This strategy yields substantial abnormal returns of eight basis points per day (circa 1.7% per month) before transaction costs ($t = 4.54$), in line with the existence of significant mispricing during earnings announcement period (Frazzini and Lamont 2007).⁴

Our paper builds on two streams of research. First, we contribute to the literature on investors' limited attention.⁵ Several studies in this field examine the effects of investors' attention on stock prices (DellaVigna and Pollet 2009, Hirshleifer, Lim, and Teoh 2009, Peress 2008). They find that stock prices incorporate earnings news less rapidly when investors are less attentive. However, manifestations of investors' inattention are difficult to identify empirically, and recent studies argue that some of these results are not due to investors' inattention but to heterogeneity between firms (Michaely, Rubin, and Vadrashko 2013). Our paper contributes to this debate. We identify a new channel affecting investors' attention and provide additional evidence that a lack of attention affects stock prices. We control for firm fixed-effects in all our tests, which alleviates the concern that our estimated differences in stock price reaction are due to permanent differences between firms. Other studies in this field investigate how investors consciously allocate their attention to particular information. While many studies highlight the influence of external factors (Peng and Xiong 2006, Corwin and Coughenor 2008, Chakrabarty and Moulton 2009), very few studies underline the influence of firm communication policy on the way investors allocate their amount of attention. Finally, some studies investigate whether managers strategically exploit investors' inattention during the earnings release process. There are evidence that managers

⁴ Frazzini and Lamont (2007) also identify significant mispricing during earnings announcement period. They find that buying stocks of announcing firms and selling stocks of non-announcing firms every month yield substantial abnormal returns. They suggest that earnings announcements grab the attention of individual investors who rarely short sale and thus push up prices too high, thus creating temporary overpricing. While such overpricing around the earnings announcement date might influence our finding that buying stocks in case of early notice of earnings yield positive abnormal returns, it cannot explain why selling stocks of announcing firms in case of late notice of earnings also yield positive abnormal returns.

⁵ See Lim and Teoh in Baker and Nofisnger (2010) for a comprehensive review.

use the display of financial information to influence investors' perception of earnings results, for instance through the issuance of pro forma earnings (Hirshleifer and Teoh 2003, Bradshaw and Sloan 2002). Regarding the strategic timing of earnings release, studies reach mixed conclusions. Some papers highlight that earnings released after the market closes or on Friday are more likely to contain bad news (Patell and Wolfson 1982, Penman 1987, Damodaran 1989, DellaVigna and Pollet 2009, Bagnoli et al. 2005). However, recent papers find no evidence that this empirical regularity is due to managers trying to exploit investors' inattention. In particular, Doyle and Magilke (2009) find no evidence that firms opportunistically report worse news after the market closes or on Fridays. In that respect, our paper provides the first evidence that managers strategically "time" the release of bad or good news as a response to investors' limited attention.

Second, our paper is related to the literature on the timing of earnings announcement. Previous research has consistently identified that managers release bad news late (Kross 1982; Givoly and Palmon 1982; Kross and Schroeder 1984), and that the market reaction to earnings news is extremely negative when such a delay occurs (Begley and Fischer 1998; Bagnoli, Kross, and Watts 2002). In this paper, we control for delays in earnings releases and also verify that our results systematically hold when focusing on the subsample of firms that consistently report their earnings on the same date. Therefore, our results are not driven by this "good news early / bad news late" practice. We contribute to this literature by pointing out to a new dimension of the timing of earnings announcement. We show that, in addition to the choice of the earnings announcement date, managers use the notice of earnings to influence the reaction of investors to good versus bad news.

The rest of the paper is organized as follows. Section 1 provides a background description on the earnings release process in the US and develops our hypothesis. Section 2 describes the data. Section 3 provides evidence that the advance notice period influences

investors' attention to earnings news. Section 4 examines whether such variation in investors' attention affects stock prices. Section 5 provides evidence that firm managers strategically time the notice of earnings. Section 6 tests whether investors infer the relation between the advance notice period and the subsequent earnings surprise. Section 7 concludes.

1. Notice of Earnings Disclosure Background and Hypothesis Development

1.1. Legal requirements and practices

Pursuant to the 2002 Sarbanes-Oxley Act and the 2004 Regulation Fair Disclosure (*Reg FD*), public companies' quarterly earnings announcements are highly regulated activities, under strict control of the SEC. In particular, the SEC mandates that quarterly earnings releases disclosed by means of a press release trigger the filling of an 8-K form, and the conference call of earnings (if any) should be held shortly hereafter and be easily available to investors (e.g. through a real-time webcast). However, the SEC displays very few requirements regarding the notice of earnings disclosure: consistent with *Reg FD*, detail on to when and how to access the conference must be made widely available to all investors, but there are virtually no constraints on when to notify this information to investors.

In the absence of any guidelines, legal advisors recommend the notification to be made at least one week before the earnings announcement.⁶ Anecdotal evidence suggest that earnings schedule is known late in the process, and that such a short notice period is an issue for market participants. The NASDAQ website reports an earnings schedule calendar for firms listed on the NASDAQ⁷ based on an "expected date" for earnings release -i.e. an estimation derived from past years' release date, rather than the true date of earnings release.

⁶The Earnings Release : Legal Requirements and Best Practices, Insights, March 2008, Aspen Publishers

⁷Available on <http://www.nasdaq.com/earnings/earnings-calendar.aspx?>

In a letter to the SEC,⁸ the CFA institute complains about the notification process (or the lack thereof) and asks the SEC to issue “additional statements [...] that encourage companies to announce reasonably ahead of time when earnings will be released”. It also expresses its concern that a short period notice may disadvantage some market participants in accessing information related to earnings announcements⁹.

In practice, notices of earnings release are communicated to investors through a specific press release similar to the one reproduced in Annex A. It shows that, on November 2, 2009, Agilent Technologies issued a press release titled “Agilent Technologies to Host Webcast of Fourth-Quarter Fiscal Year 2009 Financial Results Conference Call” in which the company states that it will release its fourth-quarter earnings result on November 13, 2009. In that case, the earnings announcement date is thus known to potential participants eleven days in advance. We systematically identify those press releases (details on this data step are provided in the Data section) to exactly recover when investors are first notified about the date of earnings release.

1.2. Hypothesis development

There are two channels by why early notices of earnings can influence the degree of investors’ attention to earning news. First, in the spirit of Kahneman (1973), we consider investors as individuals with a limited amount of attention that they can allocate to the stocks they wish to follow during the earnings announcement season. Constrained by the amount of information that they can process at the same time, individuals tend to adopt simple rules of thumb to facilitate the decision process. We argue that investors with a crowded agenda

⁸Available on <http://www.sec.gov/comments/s7-23-08/s72308-9.pdf>

⁹ “We would welcome additional statements by the SEC that encourage companies to announce reasonably ahead of time when earnings will be released. While some companies already engage in this practice, others continue to release earnings statements without any prior notice, which may disadvantage those without the dedicated means to consistently track this information”

during the earnings announcement season adopt a “first-come, first-served” rule by which they follow the order in which they receive the notices of earnings to fill their agenda. This rule implies that a longer advance notice period increases the probability that the announcing firm is first on investors' agenda.

[Insert Figure 1 here.]

The second channel by which the advance notice period can affect investors' attention is also a consequence of investors' busy schedule during the earnings announcement season and is better understood visually. Figure 1 depicts the average number of earnings announcement by day of the year along with the number of notices of earnings. It is clear from this graph, that during each earnings announcement season, investors are under tight pressure, the number of announcements being as high as 250 in a single day (the blue line). And while investors are fully focused on earnings announcement, many notices of earnings (the red line) are also issued during that period. As a consequence, those notices of earnings are more likely to be overlooked by investors. We argue that a longer advance notice period thus reduces the risk that a notice of earnings competes with simultaneous earnings disclosures for investors' attention, thereby increasing the probability that investors include the event in their agenda.

Both views lead to the following two predictions. First, the length of the advance notice period should be positively related to investors' attention to earnings news (*H1*). Second, given limits to arbitrage in the form of risk aversion, lower investors' attention caused by a short notice period should lead to slower information incorporation into stock prices (Hirshleifer and Teoh 2003, DellaVigna and Pollet 2009). Therefore, a short notice period should generate lower immediate stock price reaction to earnings news and higher post-earnings announcement drift (*H2*).

If changes in advance notice period affect short term stock prices, firm managers may be willing to behave strategically. Indeed, several studies document that firm managers care about the value of their firm's stock, for instance for career motives (Healy and Palepu 2001; Graham, Harvey, and Rajgopal 2005). Such motivations lead managers to take actions that maximize stock prices at earnings announcement, such as the timing of news disclosure (Begley and Fischer 1998, Bagnoli, Kross, and Watts 2002). Similarly, career motives and reputation concerns could lead managers to maximize the immediate stock price reaction to earnings news by reducing (increasing) the advance notice period when they plan to announce bad (good) news. In this case, a longer advance notice period would predict better earnings surprise (*H3*).

2. Data Collection and Descriptive Statistics

2.1. Notice of Earnings Release Data

We obtain corporate earnings schedule for U.S. companies from the Thomson Reuters Archives website¹⁰ which gives unlimited access to all articles published on the Reuters newswire over the 2007-2012 period. A significant part of Reuters' news flow consists of press releases directly written by the companies, in which case Reuters does not alter the original companies' press releases and accepts no responsibility for their content. We focus on such firm-initiated press releases that explicitly schedule an earnings announcement (see Appendix A for an example). We systematically identify those press releases by writing a PERL script that matches string patterns expressing the future action of releasing or announcing an earnings such as *[to announce/to report/ to release/to host/ to webcast] [conference call]*.¹¹ To match those press releases with firm-level data, we also require the

¹⁰ <http://www.reuters.com/resources/archive/us/>

¹¹ Other significant string patterns include *[announces] [webcast/conference call]* or *[schedules/will announce] [earnings results]*

press release to include a valid company ticker i.e. any characters of the press release that match the patterns (*NYSE:*) or (*NASDAQ:*).

We obtain data on earnings announcements date from Compustat and I/B/E/S. We start with all quarterly earnings announcements from Compustat with a corresponding record in I/B/E/S, and when the earnings announcement dates between the two sources differ, we apply the procedure described in DellaVigna and Pollet (2009) and take the earlier date as the correct one. Finally, we match each press release of notice with the corresponding notified earnings announcement. The detail of this data step is provided in Appendix B.1. The final sample includes 52,872 notices of earnings that could be matched with their corresponding earnings announcement. This accounts for 3,897 distinct firms.

2.2. Notice of Earnings Release Descriptive Statistics

An important issue for us is to check whether the earnings release date notified in the press release is actually met by the firm. In other word, we want to explore whether firms consider the date communicated to the market as binding, or whether they systematically delay or advance the release of earnings. We tackle this question by systematically checking whether the date announced in the press release of notice effectively matches with the actual date of announcement. We perform this step through a specific algorithm and a random sampling described in Appendix B.2. We find that, in all likelihood, all firms respect the date of earnings that they notify to the market. This is consistent with the findings by Duarte-Silva et al. (2010) who show that over the 1995-2006 period, a maximum of 791 earnings announcements were explicitly delayed by the firms.

We define the advance notice period as the difference in days between the earnings announcement date and the first time it is notified to investors. In Figure 2, we graph the

distribution of the advance notice period where, for visual purpose, the difference is taken in *calendar days*.¹²

[Insert Figure 2 here.]

The distribution exhibits five modes: the first one corresponds to notices made one week (six days) before the earnings announcement; the second one two weeks (14 days) before; the third one three weeks before (21 days) etc... A simple and intuitive explanation for this pattern is that it reflects the efficiency of the internal reporting process of the firm, where some firms with a better organizational process would prepare market participants way ahead of the earnings announcement, while poorly organized firms do last minute notifications. We rule out this interpretation by looking at the variation *within* each firm of the advance notice period. In Table 1, we define *Advance Notice Period* as the difference in *trading days* between the earnings announcement date and the notification date and we compute the standard deviation estimation of the raw variable (*Overall*); of the average of the variable for each firm across time (*Between*); and of the demeaned variable (*Within*).¹³ While part of the total standard deviation (5.95) is driven by cross-sectional differences (3.38), the *within-firm* distribution shows that there exists considerable variation for each firm across time (5.08). This enables us to consider the notification of earnings announcement as a choice of the manager of the firm that varies across time, rather than the output of the firm's internal organizational.

[Insert Table 1 here.]

2.3. Other data sources and sample description

¹² In the remainder of the paper, we will consider this difference in *trading days*

¹³ Intuitively, the *Between* standard deviation indicates how much firms are on average different from each other, while the *Within* standard deviation gives the variation within each firm of the *Advance Notice Period* across time

Analyst EPS estimates and actual earnings are taken from the I/B/E/S files. We use quarterly data and define the earnings surprise as the difference between actual earnings and the consensus analyst forecast from the I/B/E/S consensus file. Denoting $e_{k,t}$ the earnings per share for firm k at time t , $c_{k,t}$ the corresponding consensus, and $P_{k,t}$ the price of the share at the end of the quarter, the earnings surprise $s_{k,t}$ is defined as:

$$s_{k,t} = \frac{e_{k,t} - c_{k,t}}{P_{k,t}}$$

To mitigate the effects of outliers we remove observations for which the earnings surprise is superior (in absolute term) to one and we trim observations with earnings surprise in the top and bottom 1% of the distribution. Finally, we collect stock return and trading volume from the CRSP dataset, and accounting data from the Compustat dataset. All variables are winsorized at the 1% in each tail. In Table 1, we present sample description of the main variables used. Firms, on average send the notices of earnings 10 trading days before the earnings announcement occur. To reflect the sharp categorization of *Advance Notice Period*, evident in Figure 1, we divide this variable into five quintiles. We were able to recover 52,872 earnings announcement with data on the *Advance Notice Period*. By comparison, over the 2007-2012 period, there are 67,253 earnings announcements available in I/B/E/S with valid data on earnings surprise and subject to minimal data requirements. Our sample of firms is thus representative of the universe of announcing firms.

3. Advance notice period and investors' attention to earnings news

This section examines whether the advance notice period influences investors' attention to earnings news using various proxies for investors' attention

3.1. Attendance to earnings conference call

Existing literature on investors' attention proposes various proxies for investors' attention such as extreme returns (Barber and Odean 2008), trading volume (Gervais, Kaniel, and Mingelgrin 2001; Barber and Odean 2008; Hou, Xiong, and Peng 2009), news and headlines (Barber and Odean 2008; Yuan, 2012), advertising expense (Lou 2009; Chemmanur and Yan 2009), or google searches (Da, Engelberg, and Ga 2011).

In this paper we propose to use a novel and direct measure of investors' attention to earnings news: the number of participants to earnings conference call. We obtain this information from earnings conference call transcripts which report the names of all persons who participate to the conference call, including executives (such as the CEO) and equity analysts.¹⁴ Ideally, we would like the information on all the people who *listen* to the conference call –not only those who *speak*, but since the former measure is not available, we adopt the latter.

Our test is a regression of the number of conference call participants (excluding executives) on *Advance Notice Period* divided into five quintiles, controlling for known determinants of investors' attention. We systematically include firm fixed-effects so that coefficient estimates are driven by changes of the variables within each firm. The results of this analysis are shown in Table 2.

[Insert Table 2 here.]

In the first column of Table 2, we find that an increase in the advance notice period increases the number of conference call participants. In term of economic impact, a one-quintile increase of *Advance Notice Period* translates into a 6.4 percentage point increase in the number of participants to the conference call. This means that for a firm with an average

¹⁴ Earnings transcripts are collected from the website Seeking Alpha (<http://seekingalpha.com/>)

audience of eight people, a two-quintile increase in the advance notice period (or roughly a two-week earlier notice of earnings) translates into having one extra person following the call. Consistent with the findings in DellaVigna and Pollet (2009) and Hirshleifer, Lim, and Teoh (2009), we find that the number of market participants attending the conference call is lower on Friday or when there are multiple firms announcing their earnings during the same day, reassuring us on the validity of earnings call attendance as a measure of investors' attention . We next investigate the robustness of this result in the rest of the table. In column 2, we examine whether our findings are robust to the inclusion of additional control variables. To the extent that the earnings call participants mentioned in the transcript are only those who ask questions during the call, one possible issue is that our result may be driven by a spurious correlation between the advance notice period and the complexity of the earnings conference call. We control for this aspect by adding a variable measuring the number of words in the CEO's introductory speech, which presumably varies with the degree of complexity of the information released. We also add standard controls such as firm size and market-to-book. The results are virtually unchanged: higher advance notice period increases attendance to the conference call. Last, in column 3, we add earnings announcement date fixed-effects to study the effect of the advance notice period on attendance for firms who announce their earnings on the same day. This specification does not affect our results.

3.2. Trading volume

To the extent that trading volume is a valid proxy for investors' inattention (e.g. Barber and Odean 2008), if investors pay lower attention to earnings news when the date and time of the earnings disclosure are notified later, then we should also observe lower trading volume on the day of earnings announcement. We examine whether this is the case by regressing the abnormal trading volume for company k on day t on the advance notice period, controlling for

variables known to affect the trading volume as well as firm fixed-effects, year-week fixed-effects, fiscal quarter fixed-effects and day of the week fixed-effects. The abnormal trading volume is calculated in the following way:

$$AbVol_{k,t} = \log(vol_{k,t}) - \left(\frac{\sum_{i=21}^{40} \log(vol_{k,t-i})}{20} \right)$$

where $vol_{k,t}$ is the number of shares traded on day t for company k , and where the “normal” trading volume is the average number of shares traded over a [-40, -20] trading days preceding the earnings announcement. We compute the abnormal trading volume around earnings announcement as the mean abnormal trading volume over a [-1;+1] window surrounding earnings announcement, and denote it $VOL[-1;1]$

[Insert Table 3 here.]

In the first column of Table 3, we find that the advance notice period is positively correlated with the abnormal trading volume. Controlling for firm fixed effects, later notices of earnings lead to lower trading volume, in line with hypothesis *H1* that investors' attention varies with the advance notice period. This relation is robust to the addition of standard control in the regression (column 2) as well as earnings announcement date fixed-effects (column 3).

4. Advance notice period and stock price reaction to earnings news

Immediate reaction to earnings announcement and the post-earnings announcement drift has often been associated with plausible proxies for investor attention (DellaVigna and Pollet 2009; Hirshleifer, Lim, and Teoh 2009). We thus predict that the length of the advance notice period is associated with a similar pattern.

We compute earnings return and cumulative abnormal return for different windows at the date of earnings announcement. Specifically, denoting $r_{k,t}$ the return of the share of a company k on day t , we compute the cumulative abnormal return $CAR[\tau, T]$ over a $[\tau, T]$ window as the buy-and-hold return $\prod_{t=\tau}^T(1 + r_{k,t}) - \prod_{t=\tau}^T(1 + r_{p,t})$, where $r_{p,t}$ is the characteristics-adjusted portfolio return based on a monthly matching of stocks that belong to the same size/book-to-market/momentum quintiles in the spirit of Daniel, Grinblatt, Titman, and Wermers (1997).

We estimate the following equation:

$$CAR[\tau, T]_{k,t} = \alpha_0 + \beta DS_{k,t} + \gamma Advance\ Notice\ Period_{k,t} + \delta DS_{k,t} \times Advance\ Notice\ Period_{k,t} + \zeta Controls_{k,t} + \varepsilon_{k,t}$$

where $DS_{k,t}$ is the earnings surprise for firm k at quarter t divided into ten deciles of surprise, and where *Advance Notice Period* is divided into five quintiles. The coefficient β is the stock price response to the level of earnings surprise. Our interest is in the coefficient δ of the interaction between *DS* and *Advance Notice Period* which gives the sensitivity of the stock price response to earning surprise conditional on the level of the advance notice period. In other words, it gives the magnitude of the response to earnings surprise when managers vary the length of the notification. To control for known determinants of the post-earnings announcement drift, we include a set of dummies for the day of the week (DellaVigna and Pollet 2009), as well as the number of earnings announcement made on the same day (Hirshleifer, Lim, and Teoh 2009). We include the standard set of controls and each time we include a control, we also interact it with the level of earnings surprise. We compute robust standard errors clustered by the date of announcement.

[Insert Table 4 here.]

Table 4 presents our results where all specifications include firm fixed effects. In the first three columns, we display the immediate reaction to earnings announcement. On average, a one-quintile increase in the advance notice period translates into a three percentage point increase in the immediate reaction to earnings announcement. This result is robust to the inclusion of standard controls and date fixed effects. In the last three columns, we display results of the analysis of the post-earnings announcement drift. We compute the cumulative abnormal return over a 40 trading day window in the two days following the announcement. On average, over this period, a one-quintile increase in the advance notice period is associated with a five percentage point decrease in the post-earnings announcement drift.

Overall, across all specifications, the immediate reaction is larger and the post-earnings announcement is weaker for firms with higher value of *Advance Notice Period*. This suggests that an early notification of earnings release increases the speed of incorporation of earnings information by market participants. The length of the notification has real effects on firms' stock price.

5. Do firms strategically notify the date and time of earnings disclosure?

This section examines whether firms strategically choose the date at which they send the notice of earnings to attract (escape) investors' attention when they plan to issue good (bad) news.

5.1. Advance notice period and earnings surprise

If managers behave strategically, then a change in the advance notice period should predict the forthcoming earnings surprise. Specifically, we expect to find under this strategic behavior assumption that good earnings surprise are notified earlier than bad earnings surprise. We thus expect a positive correlation between the earnings surprise and the advance

notice period at the firm level. We test this prediction by regressing the earnings surprise on the advance notice period, controlling for firm fixed-effects in all specifications

[Insert Table 5 here.]

In the first column of Table 5, we regress the earnings surprise on the advance notice period with no time-varying control variables, but controlling for firm fixed effects, fiscal quarter fixed effects, and time fixed effects. Consistent with the predictions of the strategic behavior hypothesis, we find that the advance notice period predicts the earnings surprise. In terms of economic magnitude, one within-firm standard deviation of the advance notice period divided into quintile (1.23 in Table 1) explains about 5% of the within-firm standard deviation of the earnings surprise ($1.23 * 0.053 / 1.343 = 4.8\%$). In a non-reported regression, we use the earnings surprise before normalization by the stock price as a dependent variable, and find that a six trading day longer advance notice period leads to an increase in the earnings surprise by about one penny.

We investigate the robustness of this result in the rest of the table. A first concern is the possibility that the advance notice period is correlated with the date surprise, i.e. the difference between the date of earnings announcement expected by investors, and the earnings announcement date. If so, our result may be driven by the well documented fact that firms change their earnings announcement date and choose later-than-expected date of earnings announcement when they plan to disclose bad news (Kross and Schroeder, 1984, Begley and Fischer, 1998, and Bagnoli, Kross, and Watts, 2002). To control that this effect does not drive the correlation between earnings surprise and advance notice period, we add two well-known controls associated with the timing of earnings release: (i) the date surprise i.e. the difference between the earnings announcement date and the ‘expected announcement date’, defined as the same day of the week as the earnings four quarter previous, and (ii) the reporting lag i.e

the difference between the date of announcement and the quarter-end date. In column (2), the addition of these two control variables does not change our result. In column (3), we further add traditional control variables such as size, age, and market-to-book and still find unchanged results. To completely rule out the possibility that our result is driven by firms announcing bad results late, we focus on the subset of firms that consistently announce their earnings at the same date. We define this subset as the firms that do not change their earnings announcement date in more than 80% of the case. Again we still find a positive correlation between the advance notice period and earnings surprise (column 4). Finally, we check for the robustness of this correlation by using alternative definition of earnings surprise such as a dummy variable equal to one if the surprise is positive (column 5), and the quarterly net income growth on a year-on-year basis (column 6).

5.2. Cross-sectional results on firm visibility

Next, we check that the magnitude of the correlation between the advance notice period and the earnings surprise varies according to the degree of firm visibility. Indeed, being able to attract or escape investors' attention should be less of an issue for more visible firms which are consistently scrutinized by the market and much more of an issue for less visible firms.

We use three proxies to measure firm visibility: (i) the difference between the fiscal year-end of the company and the average of its industry, (ii) the analyst coverage of the firm, and (iii) the market capitalization of the firm. We use the absolute difference in number of days between the fiscal year-end of the firm and the average fiscal year-end of its peers from the same three-digit SIC code as a measure of visibility because earnings are mechanically less likely to be announced at the same time as the earnings of industry peers when this difference is large. If so, investors are less likely to be distracted by simultaneous

announcements made by firms from the same industry and the firm should then be more visible. We also follow the literature and use both the number of sell side analysts (e.g, Baker, Nofsinger, and Weaver 2002) and the size of the firm as measured by the natural logarithm of its market capitalization to assess the degree of firm visibility. For each criterion, we split our sample into three categories of visibility (low, medium, and high), and then define three dummy variables corresponding to each degree of firm visibility. With respect to the fiscal year-end criterion, the high (low) dummy variable is equal to one if the absolute difference between the fiscal year-end of the firm and the industry average is in the top (bottom) 25 centiles of the distribution during the quarter, and zero otherwise. The medium dummy variable is equal to one if both the high and low dummy variables are equal to zero. We follow the same methodology to define the high, medium and low dummy variables for the other two criteria. Finally, we perform a regression of earning surprise on advance notice period similar to the specification in Table 5 column (3) where we add an interaction term between advance notice period and the three dummy variable measuring the degree of firm visibility.

[Insert Table 6 here.]

Column 1 to 3 of Table 6 show that the advance notice period is much more predictive of the earnings surprise when the visibility of the firm is low. By contrast, we find that when the visibility of the firm is high, the magnitude of the correlation between advance notice period and earnings surprise is low and even sometimes not statistically different from zero. On average, for a *High Visibility* firm, going to the *Low Visibility* subgroup implies that a one-quintile increase in the advance notice period will be from now on associated with a 10 percentage point increase of the normalized earnings surprise. In all three cases, an F-test indicates that the difference between the two coefficients (Advance Notice Period x High

Visibility vs. Advance Notice Period x Low Visibility) is statistically significant at the 1% or 5% level.

5.3. Cross-sectional results on managerial horizon

Last, we investigate how the strategic use of the advance notice period varies according to the horizon of the managers. We use two measures for managerial horizon. First, we use the amount of new equity to be issued one quarter forward. We assume that managers who plan to issue equity in the next quarter has greater incentives to maximize short-term stock prices than managers who do not intend to raise funding on the equity market. Second, we measure managerial horizon by the share turnover during the last month of the previous quarter. We assume that high share turnover signals short-term oriented shareholders. Managers who maximize shareholders' value exhibit shorter horizons when share turnover is high. Our strategy is to regress earnings surprise on advance notice period, a proxy for managerial horizon (equity issuance or share turnover), and an interaction term between horizon and advance notice period.

[Insert Table 7 here.]

Table 7 presents our results. For each proxy of managerial horizon, the interaction term is positive statistically significant. This indicates that a change in the advance notice period is more informative about the earnings surprise when managers have shorter horizons. This suggests that firm managers respond strategically to investors' limited attention by making shorter or longer advance notice period when it is in their interest to do so.

6. The effects of investors' attention management and trading strategy

So far, we found that firms use the advance notice period to strategically time the disclosure of bad versus good news. A natural question is whether investors are aware of this

“attention management” strategy by firms. We are thus interested in whether investors perceive that an early notice implies that firms will disclose good news while a late notice is indicative of bad news. To explore this question, we run two different types of analyses: first, we look at the stock price reaction at the date of the notice of earnings; second, we build a trading strategy that takes advantage of the predictive power of the advance notice period on earnings surprise.

6.1. Stock price reaction at the notification date

If investors are aware of the strategic behavior of the firm regarding the advance notice period, then we should observe a stock price reaction at the date of notice that reflects the new information received by investors. Specifically, investors should react positively to a longer advance notice period (indicative of a future positive earnings surprise) and negatively to a shorter advance notice period. To answer this question, we compute the immediate reaction at the date of notification as the cumulative abnormal return over a $[-1;+1]$ window centered around the date of notification ($CAR[-1;1]$). We then regress the immediate stock price reaction on *Advance Notice Period* and a set of control variables. Table 8 displays the results and show that the coefficient on *Advance Notice Period* is not statistically different from zero. This suggests that market participants fail to understand the implication of an early notice on the subsequent earnings. Interestingly, the coefficient on *Date Surprise* is statistically and economically significant, suggesting that investors react to the information content of the press release and interpret negatively any earnings release date that falls after the usual announcing date, consistent with the findings by (Bagnoli, Kross, and Watts 2002). However, they fail to fully integrate the information conveyed by the date at which this press release is issued.

[Insert Table 8 here.]

6.2. Trading strategy

The possibility still exists that investors react to early or late notice between the date of notification and the date of earnings announcement. A more comprehensive way to test whether investors integrate the information conveyed by early versus late notice is to build a trading strategy that takes advantage of the predictive power of within-firm variations in the advance notice period on earnings surprise. We follow a strategy similar in spirit to Barber, Lehavy, McNichols and Trueman (2007) that take advantage of analysts' upgrades and downgrades. By analogy with their strategy, we 'upgrade' a stock when the notice of earnings is made earlier than one year before and we 'downgrade' the stock otherwise. We thus form two distinct "buy" and "sell" portfolio. Our strategy consists in (i) buying stocks when the notice of earnings is issued earlier than the notice of earnings one-year ago for the same fiscal quarter, and (ii) selling stocks otherwise. It is important to stress that this strategy only exploits information that are easily known by any investors. In fact, it only requires keeping track of last year's notices of earnings for each firm in the portfolio.

We create calendar-time portfolios that invest one dollar each time an earnings release is notified. Let $x_{k,t}$ denote the compounded daily return of stock k from the date of notification through date t . The equally-weighted portfolio return on date t is given by:

$$\frac{\sum_{k=1}^{n_t} x_{k,t-1} R_{k,t}}{\sum_{k=1}^{n_t} x_{k,t-1}}$$

where n_t is the number of stocks (or notifications) held in the portfolio at date t and $R_{k,t}$ is the total return of stock k on calendar date t . Similarly, we define the value-weighted portfolio return on date t as:

$$\frac{\sum_{k=1}^{n_t} x_{k,t-1} R_{k,t}}{n_t}$$

The buy portfolio consists in buying a stock when the notice of earnings is issued earlier than four quarter previous, and the position is held until five days have passed after the earnings announcement. That way, an investor takes advantage of the positive stock price reaction that follows a positive earnings surprise. The five day cutoff is here to ensure that an investor benefit from the position even if the market reacts to the earnings surprise with a delay. The sell portfolio is constructed in a similar way.

We compute the risk-adjusted return of each portfolio p using the Carhart 4-factor model:

$$R_{p,t} - R_{t,f} = \alpha_p + \beta_p(R_{m,t} - R_{t,f}) + s_p SMB_t + h_p HML_t + m_p WML_t + \varepsilon_{pt}$$

where $R_{p,t}$ is the portfolio return on date t , $R_{m,t}$ is the market return on date t , $R_{t,f}$ is the risk-free rate on date t , and SMB_t , HML_t , WML_t are the size, book-to-market, and momentum factors taken from Kenneth French's website. We compute robust standard errors using the Newey-West estimator with six lag.

[Insert Table 9 here.]

Table 9 presents the results. In column (1) to (3), we present results for value-weighted portfolios where the first line (*Constant*) denotes the excess return. A long-short portfolio that buys early notifications and sells late notifications generates an excess return of 8.4 basis points per day. In column (4) to (6) we present results for the equally-weighted portfolio. We find an excess return of the same order of magnitude. In both cases, the long-short portfolio generates an excess return of around 1.7% per month.

7. Conclusion

While investors' inattention to earnings announcement has been consistently shown as an explanation for several market inefficiencies, there have been mixed evidence of managers trying to benefit from this bias by timely disclosing bad news when investors are inattentive. We contribute to this literature by looking at the preparation by firms of earnings announcements through the notification of earnings disclosure. We show that the length of the advance notice period affects investors' attention to earnings news and stock price reaction at announcement. Firm managers make use of the advance notice period to time the release of good versus bad news. We find that the length of the advance notice period is predictive of earnings surprise, with longer notices being associated with more positive earnings surprise, and that this strategic behavior is more pronounced for firms that face visibility issues. Investors fail to fully understand the implication of early versus late notice on the level of earnings surprise. A long-short portfolio that buys stocks with early notices and sells stocks with late notice generates an excess return of 1.7% per month.

Appendix A Agilent Technologies Earnings Announcement Schedule

Agilent Technologies to Host Webcast of Fourth-Quarter Fiscal Year 2009 Financial Results Conference Call

* Reuters is not responsible for the content in this press release.

Mon Nov 2, 2009 11:00am EST

SANTA CLARA, Calif.--(Business Wire)--

Agilent Technologies Inc. (NYSE:A) will release its fourth-quarter fiscal year 2009 financial results before the stock market opens on Nov. 13. The company will host a live webcast of its investor conference call in listen-only mode.

Date: Friday, Nov. 13

Time: 5:30 a.m. (PT)

Web access: www.investor.agilent.com

Listeners may log on and select "Q4 2009 Agilent Technologies Inc. Earnings Conference Call" in the "News & Events -- Calendar of Events" section. The webcast will remain on the company site for 90 days.

In addition to the online broadcast, a telephone replay of the conference call will be available at 8:30 a.m. (PT) after the call on Nov. 13 through Nov. 20 dialing +1 888 286 8010 (for international, dial +1 617 801 6888) and entering pass code 96035796.

About Agilent Technologies

Agilent Technologies Inc. (NYSE:A) is the world's premier measurement company and a technology leader in communications, electronics, life sciences and chemical analysis. The company's 18,000 employees serve customers in more than 110 countries. Agilent had net revenues of \$5.8 billion in fiscal 2008. Information about Agilent is available on the Web at www.agilent.com.

NOTE TO EDITORS: Further technology, corporate citizenship and executive news available on the Agilent news site at www.agilent.com/go/news.

Agilent Technologies Inc.
Alicia Rodriguez, +1-408-345-8948
alicia_rodriguez@agilent.com

Copyright Business Wire 2009

Appendix B Data proceeding

This appendix provides details on two important data steps. First, we show how to match each press release of notification with the corresponding earnings announcement. Second, we describe how to identify whether the release date set forth in the press release of notification has been respected by the company.

B1- Matching press releases with the corresponding earnings announcement

We match each press release of notification with the corresponding earnings on the basis of the fiscal quarter-year reported in the press releases. To recover the fiscal quarter in the press releases, we search for string pattern such as *[first/second/third/fourth] [quarter]*. It is more challenging to recover the fiscal year as several years can be mentioned in a press release (not only the fiscal year but also the year at which the announcement actually occurs). We opt for the following approach: for each press release in our dataset, identified by a company ticker and a fiscal quarter, we look forward to identify the next earnings announcement made by the firm in the fiscal quarter mentioned in the press release. When there are several press releases that notify the same earnings announcement, we take the earlier one to identify the *first* time the earnings announcement date was made public to investors. Finally, we remove press releases where the notification is published on the same day of the earnings announcement.

B2- Checking that the notified release date has been respected by the firm

For each press release of notification, we search for string patterns that match a date i.e. any strings of the form *[Month Day, Year]* such as May 9, 2012. A press release of notification can mention several other dates than the date of earnings announcement (e.g. the date until which the conference webcast will be available). We then check whether at least one of those dates reported in the press release match with the actual date of announcement. If this is the case, we consider the company to respect its notification. Of the 54,570 notices of earnings in the initial dataset, we were able to identify 49,441 earnings announcements where the release date announced in the press release matches either the Compustat or the I/B/E/S reporting date. We are thus left with 5,129 notices of earnings (about 9.4% of the dataset) where the earnings release date is potentially not respected by the firm. Due to the difficulty of extracting the date of announcement from the text of the press release, this figure represents an upper bound of the number of non-respected earnings notification. To further examine this question, we draw a random sample of 1% of the unmatched observations (52 press releases) and manually check whether the date of announcement has been respected by the firm. We find that in 71% of the case (37 observations), firms actually respect their earnings schedule date, but our procedure fail to identify it¹⁵. In the remaining 29% of the cases (15 observations), firms respect their notifications, but the earnings announcement date recorded in either I/B/E/S or Compustat is wrong (often by a day or two) and no match can thus be found. On this random sample, we thus find no firms that do not respect the date of earnings that they announce in advance to market participants.

¹⁵ For instance the date “May 9, 2012” can be displayed in the press release under the form “Wednesday, May 9”. The latter expression is not matched by our procedure

Appendix C List of Variables

Variable	Definition	Source
<i>Advance Notice Period</i>	The number of days between the release of the notice detailing the date and time of the forthcoming quarterly earnings disclosure, and the earnings announcement day, divided into five quintile.	Reuters Archives
<i>EPS Surprise</i>	The difference between the announced earnings per share and the consensus earnings per share, normalized by the stock price at the end of the corresponding quarter.	I/B/E/S
<i>DS</i>	The <i>Earnings Surprise</i> divided into ten deciles	I/B/E/S
<i>Absolute Earnings Surprise Decile</i>	The absolute value of <i>Earnings Surprise</i> divided into ten deciles	I/B/E/S
<i>Date Surprise</i>	The difference in calendar days between the earnings announcement date and the expected announcement date, defined as the same day of the week as the earnings four quarter previous.	I/B/E/S and COMPUSTAT
<i>Reporting Lag</i>	The difference in calendar days between the date of announcement and the quarter-end date	I/B/E/S and COMPUSTAT
<i>Number of Announcements</i>	The number of earnings announcements that occur on the same day.	I/B/E/S and COMPUSTAT
<i>Friday</i>	Dummy variable for announcements made on Friday.	I/B/E/S and COMPUSTAT
<i>Number of Analysts</i>	The numbers of analysts who attend the conference call.	Analysts' transcripts
<i>Number of Words</i>	The number of words in the CEO's introductory speech.	Analysts' transcripts
<i>Size</i>	The natural logarithm of market capitalization.	COMPUSTAT
<i>Market-to-Book</i>	Market to book ratio	COMPUSTAT
<i>Age</i>	The number of year elapsed since a firm's inception	COMPUSTAT
<i>RoA</i>	Net Earnings over Assets at the end of the period	COMPUSTAT

References

- Bagnoli, M., W. Kross, and S. G. Watts. 2002. The Information in Management's Expected Earnings Report Date: a Day Late, a Penny Short. *Journal of Accounting Research* 40:1275–96.
- Bagnoli, M., M.B. Clement, and S.G. Watts. 2005. Around-the-Clock Media Coverage and the Timing of Earnings Announcements. *Working Paper*
- Baker, H.K., J. R. Nofsinger, and D. G. Weaver. 2002. International Cross-listing and Visibility. *Journal of Financial and Quantitative Analysis* 37:495–521.
- Baker, H. K., and J.R. Nofsinger. 2010. *Behavioral Finance: Investors, Corporations, and Markets*. Hoboken, N.J: John Wiley & Sons.
- Barber, B., and T. Odean. 2008. All That Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors. *Review of Financial Studies* 21:785–818.
- Barber, B., R. Lehavy, and B. Trueman. 2007. Comparing the Stock Recommendation Performance of Investment Banks and Independent Research Firms. *Journal of Financial Economics* 85:490–517.
- Begley, J., and P. E. Fischer. 1998. Is There Information in an Earnings Announcement Delay? *Review of accounting studies* 3:347–63.
- Bradshaw, M. T., and R. G. Sloan. 2002. GAAP versus The Street: An Empirical Assessment of Two Alternative Definitions of Earnings. *Journal of Accounting Research* 40:41–66.
- Chemmanur, T., and A. Yan. 2009. Advertising, Investor Recognition, and Stock Returns Thomas Chemmanur. *Working Paper* .
- Chakrabarty, B., and P. C. Moulton. 2012. Earnings announcements and attention constraints: The role of market design. *Journal of Accounting and Economics* 53:612–634.
- Corwin, S. A., and J. F. Coughenour. 2008. Limited Attention and the Allocation of Effort in Securities Trading. *The Journal of Finance*, 63: 3031–3067
- Da, Z., J. Engelberg, and P. Ga. 2011. In Search of Attention. *The Journal of Finance* 66:1461–99.
- Damodaran, A. 1989. The Weekend Effect in Information Releases: A Study of Earnings and Dividend Announcements. *Review of Financial Studies* 2:607–23.
- Daniel, K., M. Grinblatt, S. Titman, and R. Wermers. 1997. Measuring Mutual Fund Performance with Characteristics-based Benchmarks. *The Journal of Finance* 52:1035–58.
- DellaVigna, S., and J. M. Pollet. 2009. Investor Inattention and Friday Earnings Announcements. *The Journal of Finance* 64:709–49.

- Doyle, J. T., and M. J. Magilke. 2009. The Timing of Earnings Announcements: An Examination of the Strategic Disclosure Hypothesis. *The Accounting Review* 84:157–82.
- Duarte-Silva, T., H. Fu, C. F. Noe, and K. Ramesh. 2010. Information Content of Earnings Delay Announcements. *Working Paper*.
- Frazzini, A., and O. Lamont. 2007. The Earnings Announcement Premium and Trading Volume. *Working Paper*.
- Gervais, S., R. Kaniel, and D. H. Mingelgrin. 2001. The High-volume Return Premium. *The Journal of Finance* 56:877–919.
- Givoly, D., and D. Palmon. 1982. Timeliness of Annual Earnings Announcement: Some Empirical Evidence. *The Accounting Review* 57:486–508.
- Graham, J. R., C. R. Harvey, and S. Rajgopal. 2005. The Economic Implications of Corporate Financial Reporting. *Journal of Accounting and Economics* 40:3–73.
- Healy, P. M., and K. G. Palepu. 2001. Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature. *Journal of Accounting and Economics* 31:405–40.
- Hirshleifer, D., S. S. Lim, and S. H. Teoh. 2009. Driven to Distraction: Extraneous Events and Underreaction to Earnings News. *The Journal of Finance* 64:2289–2325.
- Hirshleifer, D., and S. H. Teoh. 2003. Limited Attention, Information Disclosure, and Financial Reporting. *Journal of Accounting and Economics* 36:337–86.
- Hou, K., W. Xiong, and L. Peng. 2009. A Tale of Two Anomalies: The Implications of Investor Attention for Price and Earnings Momentum. *Working Paper*.
- Kahneman, D. 1973. Attention and effort. Englewood Cliffs, NJ: Prentice-Hall.
- Kross, W. 1982. Profitability, Earnings Announcement Time Lags and Stock Price. *Journal of Business Finance & Accounting* 9:313–28.
- Kross, W., and D. A. Schroeder. 1984. An Empirical Investigation of the Effect of Quarterly Earnings Announcement Timing on Stock Returns. *Journal of Accounting Research* 22:153–76.
- Lou, D. 2009. Attracting Investor Attention through Advertising. *Working Paper*.
- Michaely, R., R. Amir, and V. Alexander, 2012. Firm Heterogeneity and Investor Inattention to Friday Earnings Announcements. *Working Paper*
- Patell, J. M., and M. A. Wolfson. 1982. Good News, Bad News, and the Intraday Timing of Corporate Disclosures. *The Accounting Review* 57:509–27.
- Peng, L., and X. Wei. 2006. Investor Attention, Overconfidence and Category Learning. *Journal of Financial Economics* 80: 563-602

Penman, S. H. 1987. The Distribution of Earnings News over Time and Seasonalities in Aggregate Stock Returns. *Journal of Financial Economics* 18:199–228.

Peress, J. 2008. Media Coverage and Investors' Attention to Earnings Announcements. *Working Paper* .

Yuan, Y. 2012. Market-Wide Attention, Trading, and Stock Returns . *Working paper*

Table 1***Descriptive Statistics***

This table presents summary statistics for our main variables. The sample includes 90,870 firm-quarter observations over the 2007-2012 period corresponding to 4,875 US firms from the Compustat Quarterly database and the I/B/E/S database. Of these 90,870 earnings announcements, 52,872 observations (3,897 firms) could be matched with the corresponding notice of earnings date from Thomson Reuters Archive. *Advance Notice Period* is the number of days between the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) and the earnings announcement date. *EPS Surprise* is the difference between the announced earnings per share and the consensus earnings per share, normalized by the stock price at the end of the corresponding quarter. All other variables are defined in Appendix C. All continuous variables are winsorized at the 1% level in each tail.

	Count	Mean	p10	p50	p90	Standard Deviation		
						Overall	Between	Within
Advance Notice Period (Continuous)	52 872	10.58	4.00	10.00	19.00	5.95	3.38	5.08
Advance Notice Period (Quintile)	52 872	2.87	1.00	3.00	5.00	1.46	0.84	1.23
EPS Surprise	67 253	-0.121	-0.929	0.054	0.866	1.838	1.646	1.343
Size	89 285	6.63	4.02	6.65	9.18	1.98	0.31	1.95
RoA	89 171	-3.98%	-5.64%	0.55%	3.36%	10.81	10.11	5.79
Leverage	88 708	0.23	0.00	0.16	0.53	0.27	0.14	0.24
Market-to-Book	84 467	3.05	0.79	1.88	5.83	4.03	2.35	4.08
# Analysts at Earnings Call	14 675	7.40	3.00	7.00	12.00	3.50	1.85	2.94

Table 2

Advance Notice Period and Attendance to Earnings Calls

This table presents panel regressions examining the effect of the advance notice period on the number of participants to the earnings conference call. The dependent variable is the number of conference call participants. *Advance Notice Period* is the number of days between the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) and the earnings announcement date, divided into five quintile. *Friday* is a dummy variable for announcements made on Friday. *Number of Announcements* is the number of contemporaneous announcements. *Number of Words* corresponds to the number of words in the CEO's introductory speech. *Date Surprise* is the difference between the earnings announcement date and the expected announcement date. *Reporting Lag* is the difference in calendar days between the announcement date and the quarter-end date. All other variables are defined in Appendix C. Standard errors are adjusted for heteroskedasticity and clustered by firm. t-statistics are in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Number of Conference Call Participants			
	(1)	(2)	(3)
Advance Notice Period	0.064** (2.38)	0.064** (2.28)	0.080** (2.54)
Friday	-0.266** (-2.15)	-0.272** (-2.18)	-
Number of Announcements	-0.001*** (-2.86)	-0.001*** (-3.02)	-
Number of Words		-0.018*** (-4.24)	-0.017*** (-3.51)
Date Surprise		-0.011** (-1.98)	-0.006 (-0.91)
Reporting Lag		-0.004 (-1.13)	0.003 (0.44)
Size		0.481*** (3.46)	0.400** (2.54)
Market-to-Book		0.009 (0.55)	0.013 (0.70)
Age		0.017 (0.03)	0.032 (0.04)
Firm Fixed Effects	Yes	Yes	Yes
Year-Quarter Fixed Effects	Yes	Yes	-
Fiscal Quarter Fixed Effects	Yes	Yes	-
Earnings Announcement Date Fixed Effects	No	No	Yes
Adj. R ²	2.2%	2.9%	-
N	11,994	11,420	11,420
# Firms	1,509	1,475	1,475

Table 3***Advance Notice Period and Trading Volume Response to Earnings News***

This table presents panel regressions examining the effect of the advance notice period on trading volume response to earnings news. Abnormal trading volume on day t is defined as the log trading volume on that day minus the average log trading volume over a [-40,-21] trading day window preceding day t . The dependent variable VOL[-1,1] is the average abnormal trading volume over days [-1,1] surrounding the announcement date. *Advance Notice Period* is the number of days between the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) and the earnings announcement date, divided into five quintile. All other variables are defined in Appendix C. Standard errors are adjusted for heteroskedasticity and clustered by day of announcement. t-statistics are in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Abnormal Volume at Earnings Announcement Date			
	(1) VOL [-1,1]	(2) VOL [-1,1]	(3) VOL [-1,1]
Advance Notice Period	0.0054** (2.32)	0.0070*** (2.85)	0.0075** (2.58)
Number of Announcements	0.0000 (0.40)	0.0000 (0.17)	- -
Date Surprise		0.0004 (0.58)	0.0004 (0.63)
Reporting Lag		-0.0013 (-1.29)	-0.0005 (-0.44)
Absolute Earnings Surprise Decile		0.0149*** (14.98)	0.0145*** (13.64)
Market-to-book		0.0012 (1.22)	0.0008 (0.77)
Size		-0.011 (-1.17)	-0.0121 (-1.11)
Age		-0.3131 (-1.09)	-0.0702 (-0.20)
Firm Fixed Effects	Yes	Yes	Yes
Year-Week Fixed Effects	Yes	Yes	-
Day of Week Fixed Effects	Yes	Yes	-
Earnings Announcement Date Fixed Effects	No	No	Yes
Fiscal Quarter Fixed Effects	Yes	Yes	Yes
Adj. R ²	10.6%	13.5%	36.7%
N	52,816	41,984	41,984

Table 4

Advance Notice Period and Market Reactions to Earnings News

This table presents panel regressions examining the effect of the advance notice period on the relation between announcement or post-announcement returns and earnings surprises. The dependent variable is indicated under each column heading. *DS* is earnings surprise deciles (DS=1: lowest, 10: highest). *Advance Notice Period* is the number of days between the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) and the earnings announcement date, divided into five quintile. Control variables include *Date Surprise*, *Reporting Lag*, *Number of Announcements*, *Size*, *Market-to-Book*, *Number of Analysts*, and indicator variables for each day of the week. All control variables are also interacted with the deciles of surprise (*DS*). See Appendix C for variable definitions. Standard errors are adjusted for heteroskedasticity and clustered by the day of announcement. t-statistics are in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Market Reaction to Earnings Announcement						
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR [-1,1]	CAR [-1,1]	CAR [-1,1]	CAR [2,42]	CAR [2,42]	CAR [2,42]
Advance Notice Period x DS	0.030*** (2.94)	0.029** (2.29)	0.027** (1.99)	-0.057*** (-2.97)	-0.057** (-2.53)	-0.045** (-1.97)
Advance Notice Period	-0.131* (-1.77)	-0.08 (-0.88)	-0.065 (-0.69)	0.209 (1.48)	0.237 (1.44)	0.187 (1.10)
DS	0.994*** (29.01)	1.573*** (11.54)	1.811*** (14.41)	0.401*** (6.29)	0.610** (2.41)	0.603** (2.53)
Controls (Interacted)	No	Yes	Yes	No	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year-Week Fixed Effects	Yes	Yes	-	Yes	Yes	-
Fiscal Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Earnings Ann. Date Fixed effects	No	No	Yes	No	No	Yes
Adj. R ²	12.9%	14.2%	15.1%	1.0%	2.0%	2.3%
N	43,405	34,306	42,580	42,580	34,141	34,114

Table 5

Advance Notice Period and Earnings Surprise

This table presents panel regressions examining the effects of the advance notice period on the level of earnings surprise at the time of the earnings announcement. The dependent variable is the earnings surprise. In columns (1) to (4), the earnings surprise is the difference between the announced earnings per share and the consensus earnings per share, normalized by the stock price at the end of the corresponding quarter. In column (4), we restrict the sample to firms whose earnings announcement date is always the same. In column (5), the earnings surprise is a dummy equal to 1 if the surprise is positive and 0 if not. In column (6), the earnings surprise is the net income growth in the quarter relative to the same quarter of the previous year. *Advance Notice Period* is the number of days between the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) and the earnings announcement date, divided into five quintile. All other variables are defined in Appendix C. Standard errors are adjusted for heteroskedasticity and clustered by firm. t-statistics are in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Earnings Surprise at the Earnings Announcement Date						
	(1)	(2)	(3)	(4)	(5)	(6)
	(Actual EPS - Estimated EPS) / Price				Positive EPS Surprise	Net Income Growth
Advance Notice Period	0.053*** (4.75)	0.064*** (5.51)	0.066*** (5.60)	0.050** (2.33)	0.017*** (5.66)	12.073*** (4.13)
Date Surprise		-0.008*** (-3.97)	-0.013*** (-4.58)	0.001 (0.13)	-0.004*** (-5.85)	-5.144*** (-6.09)
Reporting Lag		-0.007*** (-3.80)	-0.006*** (-2.93)	0.003 (1.42)	-0.001 (-1.45)	-2.834*** (-5.53)
Size			-0.214*** (-4.02)	-0.256*** (-2.66)	-0.048*** (-4.27)	-162.084*** (-10.38)
Market-to-book			0.002 (0.52)	-0.009 (-1.12)	0 (-0.24)	4.135*** (3.02)
Age			-3.420** (-2.14)	-19.541 (-1.46)	-0.531 (-0.70)	-996.153 (-0.64)
RoA			-0.544* (-1.66)	0.462 (0.63)	-0.123* (-1.90)	-1575.286*** (-6.57)
Leverage			0.430** (2.52)	0.469 (1.52)	0.116*** (3.01)	243.681*** (5.48)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Fiscal Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Sample restriction	No	No	No	Yes	No	No
Adj. R ²	0.7%	0.8%	1.0%	0.8%	0.6%	4.6%
N	45,617	44,704	42,060	9,336	42,060	35,382
# Firms	3,731	3,663	3,536	653	3,536	3,248

Table 6

Cross-sectional Effects According to Firm Visibility

This table presents panel regressions examining the cross-sectional effects of the advance notice period on the level of earnings surprise according to firm visibility. The dependent variable is the earnings surprise defined as the difference between the announced earnings per share and the consensus earnings per share, normalized by the stock price at the end of the corresponding quarter. *Advance Notice Period* is the number of days between the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) and the earnings announcement date, divided into five quintile. Firm visibility is measured using three criteria: the fiscal year-end month of the firm relative to the average of the industry (same three-digit SIC code), the number of analysts covering the firm, and its market capitalization. *High (Low) Visibility* is a dummy variable equal to one if the proxy for firm visibility falls in the top (bottom) 25 centiles of the distribution during the quarter and zero otherwise. *Medium* is a dummy variable equal to one if both *Low* and *High* equal zero, and zero otherwise. Controls variables include *Date Surprise*, *Reporting Lag*, *Size*, *Market-to-Book*, *Leverage*, and *Age*. All control variables are interacted with *High Visibility*, *Medium Visibility*, and *Low visibility*. All variables are defined in Appendix C. Standard errors are adjusted for heteroskedasticity and clustered by firm. t-statistics are in parentheses. The bottom of the table reports coefficients and f-statistics of an F-test that tests the equality of coefficient estimates for two variables: Advance Notice Period x High Visibility, and Advance Notice Period x Low Visibility. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Earnings Surprise at the Earnings Announcement Date			
Proxy for visibility	(1) Fiscal Year-End	(2) # Analysts	(3) Market Cap.
Advance Notice Period x High Visibility	0.034 (1.63)	0.036*** (2.66)	0.014 (1.40)
Advance Notice Period x Medium Visibility	0.063*** (4.11)	0.056*** (3.55)	0.071*** (4.85)
Advance Notice Period x Low Visibility	0.105*** (4.41)	0.108*** (3.52)	0.184*** (3.33)
High Visibility	-0.21 (-0.39)	-0.781** (-2.01)	-2.351*** (-3.08)
Medium Visibility	-0.209 (-0.68)	-0.603* (-1.65)	-2.458*** (-3.60)
Controls (Interacted)	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes
Year-Quarter Fixed Effects	Yes	Yes	Yes
Fiscal Quarter Fixed Effects	Yes	Yes	Yes
Adj. R ²	1.2%	1.1%	1.7%
N	42,060	34,783	42,060
# Firms	3,536	3,488	3,536
ANP x Low Visibility - ANP x High Visibility	0.071**	0.072**	0.170***
F-test	(4.66)	(9.26)	(5.04)

Table 7

Cross-sectional Effects according to Managerial Horizon

This table presents panel regressions examining the cross-sectional effects of the advance notice period on the level of earnings surprise according to managers' horizon. The dependent variable is the earnings surprise defined as the difference between the announced earnings per share and the consensus earnings per share, normalized by the stock price at the end of the corresponding quarter. *Advance Notice Period* is the number of days between the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) and the earnings announcement date, divided into five quintile. Managerial horizon is measured using two criteria: the amount of new equity that will be issued in the next quarter scaled by the firm market capitalization (*New Equity Issue_{q+1}*), and the share turnover during the last month of the previous quarter (*Share Turnover_{q-1}*). In column (1), *Short Horizon* is equal to *New Equity Issue_{q+1}*. In column (2), *Short Horizon* is equal to *Share Turnover_{q-1}*. Controls variables include *Date Surprise*, *Reporting Lag*, *Size*, *Market-to-Book*, *Leverage*, and *Age*. All control variables are interacted with *Short Horizon*. All variables are defined in Appendix C. Standard errors are adjusted for heteroskedasticity and clustered by firm. t-statistics are in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Earnings Surprise at the Earnings Announcement Date		
Proxy for Short Horizon	(1) New Equity Issue _{q+1}	(2) Share Turnover _{q-1}
Advance Notice Period x Short Horizon	0.903*** (2.70)	2.692* (1.87)
Advance Notice Period	0.059*** (4.79)	0.036** (2.07)
Short Horizon	0.7602 (0.20)	19.993 (1.39)
Standard Controls (Interacted)	Yes	Yes
Firm Fixed Effects	Yes	Yes
Year-Quarter Fixed Effects	Yes	Yes
Fiscal Quarter Fixed Effects	Yes	Yes
Adj. R ²	1.1%	1.1%
N	39,977	39,146
# Firms	3,414	3,392

Table 8***Advance Notice Period and Market Reaction to Notices of Earnings***

This table presents panel regressions examining the effect of the advance notice period on the firm stock return at the notification of the date and time of the next quarterly earnings disclosure. The dependent variable $CAR[-1,+1]$ is the cumulated abnormal return over days $[-1,+1]$ around the date of the notice of earnings. *Advance Notice Period* is the number of days between the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) and the earnings announcement date, divided into five quintile. See Appendix C for other variable definitions. Standard errors are adjusted for heteroskedasticity and clustered by the day of announcement. t-statistics are in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Market Reaction to Earnings Schedule Notification	
	CAR[-1;+1]
Advance Notice Period	0.031 (1.36)
Date Surprise	-0.023*** (-3.05)
Friday	0.069 (0.68)
Size	-0.201** (-2.15)
Market-to-Book	0.00 (-1.03)
Firm Fixed Effects	Yes
Year-Week Fixed Effects	Yes
Fiscal Quarter Fixed Effects	Yes
Adj. R ²	0.2%
N	43,363

Table 9***Advance Notice Period (ANP) Portfolios Abnormal Returns***

This table presents daily abnormal return portfolios from January 2007 to December 2012. The portfolios of stocks are formed according to the date of the notice detailing the date and time of the forthcoming quarterly earnings disclosure. Stocks are added to the High (Low) ANP portfolio when the date of the notice of earnings (i.e. the press release announcing the date and time of the forthcoming quarterly earnings disclosure) comes earlier (later) than the date of the notice of earnings issued for the same quarter of the previous year. Stocks are removed from the High (Low) ANP portfolio five trading days after the earnings announcement date. In Column 1 through 3, all stocks are value weighted within a given portfolio. In Column 4 through 6, all stocks are equally weighted within a given portfolio. Column 1 through 6 report the coefficients of an OLS regressions of portfolios daily return in excess of the Treasury bill rate on daily factors. MktRf is the return on the CRSP value-weighted index minus the treasury rate. SMB and HML are the daily returns from the Fama and French (1993) factor-mimicking portfolios for size and book-to-market, respectively. UMD is the daily return from the Carhart (1997) factor-mimicking portfolio for momentum. The constant is the average daily risk-adjusted return expressed in basis points. Heteroskedasticity and autocorrelation consistent standard errors are calculated using the Newey-West estimator with six lags. t-statistics are in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Dependent Variable: Portfolio Daily Excess Return (in bp)						
Portfolio:	Value weights			Equal weights		
	High ANP (1)	Low ANP (2)	Long / Short (3)	High ANP (4)	Low ANP (5)	Long / Short (6)
Constant	4.689*** (3.07)	-3.680* (-1.96)	8.369*** (4.54)	4.146*** (2.64)	-3.775** (-2.20)	7.921*** (4.18)
MktRF	1.012*** (47.71)	1.003*** (57.23)	0.008 (0.37)	1.179*** (42.13)	1.187*** (43.62)	-0.008 (-0.34)
SMB	0.709*** (19.62)	0.767*** (19.91)	-0.058** (-2.04)	0.265*** (5.32)	0.328*** (5.80)	-0.063* (-1.93)
HML	0.116*** (3.35)	0.115*** (3.38)	0.001 (0.02)	0.090** (2.17)	0.081 (1.62)	0.009 (0.19)
UMD	-0.002*** (-7.43)	-0.002*** (-8.78)	0.000* (1.73)	-0.000* (-1.85)	-0.001*** (-3.22)	0.000* (1.65)
N	1,257	1,257	1,257	1,257	1,257	1,257

Figure 1

Number of Events Related to Quarterly Earnings Disclosure

This figure plots the average number of events related to quarterly earnings disclosure by day within a trading year, based on (i) a sample of 4,875 US firms (90,870 observations) from the Compustat Quarterly database and (ii) a sample of 3,897 US firms (52,872 observations) from Reuters Archive over the 2007-2012 period. It figures the number of earnings announcements (the blue line), and the number of notices of earnings (the red line).

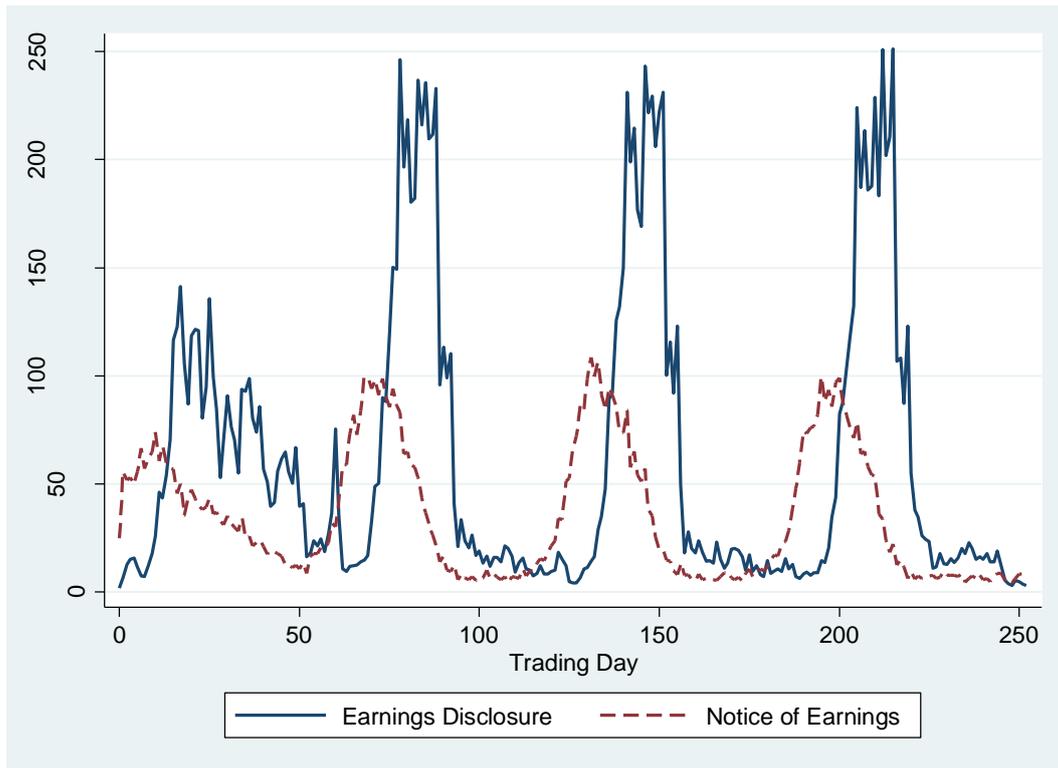


Figure 2

Advance Notice Period Distribution

This figure displays the density function of the advance notice period, the number of calendar days between the notice detailing the date and time of the forthcoming quarterly earnings disclosure, and the earnings announcement day. The sample includes 52,872 observations, corresponding to any notice detailing the date and time of the forthcoming quarterly earnings disclosure which we are able to identify in the Reuters press release database, and which we are able to match with 3,897 US firms from the Compustat Quarterly database over the 2007-2012 period

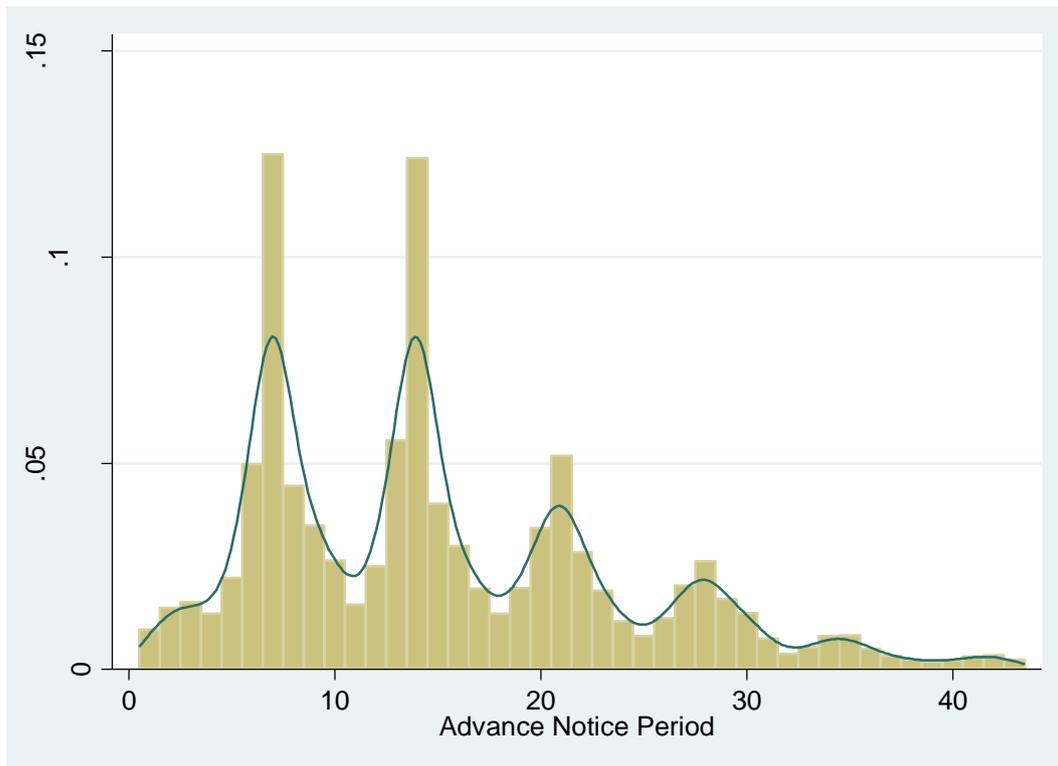


Figure 3

Timeline of Events

This figure presents the standard timeline of the earnings release process in the US. Information about the organization of the forthcoming earnings release is sent on average ten days before the event. Such information typically includes the date and time of earnings release as well as the earnings conference call number. We call the action of sending this information to market participants "Notice of Earnings". We call the action of disclosing quarterly earnings information to market participants "Earnings Announcement". The "Advance Notice Period" is the number of days between the date of the first notice of earnings and the earnings announcement date.

