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Earnings Notifications, Investor Attention, and the Earnings Announcement Premium

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Abstract

This paper provides new evidence that investor attention explains positive returns around earnings announcements and reconciles the attention explanation with information-based explanations in the literature. I use earnings notifications, which are attention-grabbing announcements of the upcoming earnings date but otherwise provide little new information. I find positive returns, more EDGAR searches, and higher trading volumes on notification days. I also find that attention and returns around the earnings announcement are lower in the presence of notifications, consistent with notifications attenuating investor attention. I show that attention has its strongest effect on returns in the days immediately following the earnings announcement.

Keywords: Investor Attention, Earnings Announcement Premium, Earnings Notifications
JEL Classification: M4, M41, G10, G14

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1 Introduction

The literature documents a pattern of positive returns around earnings announcements (EAs), commonly referred to as the earnings announcement premium (EAP). Studies either cite an information explanation, attributing this phenomena to (i) increased risk or market frictions because of the information revealed in the EA (Ball and Kothari 1991; Cohen et al. 2007; Patton and Verardo 2012; Levi and Zhang 2015; Savor and Wilson 2016),[1] or (ii) an attention explanation, because of greater investor attention around the announcement (Frazzini and Lamont 2007; Hirshleifer et al. 2008; Aboody et al. 2010; Lawrence et al. 2017). Recent research mainly supports the information view and questions the robustness of evidence for the attention explanation. These studies suggest that results supporting the attention explanation conflate the effects of information and attention, use empirical proxies that do not explain positive returns before the EA (when much of the EAP is generated), and are sensitive to variable construction choices (Cohen et al. 2007; Barber et al. 2013; Levi and Zhang 2015). Additionally, these two explanations have been mostly studied independently, with papers supporting one explanation largely overlooking the other. Research thus fails to describe how they might jointly explain the EAP. The objectives of this paper are to provide new evidence of the attention explanation and reconcile the two explanations.

I proceed in three phases. First, I document an attention effect, similar to the EAP, for earnings notifications, which points to an attention effect for EAs, given their similar attention-grabbing properties. Second, I show that earnings notifications attenuate the attention-grabbing effect of EAs, allowing for empirical identification of the effect of attention on the EAP. Third, I provide further evidence of the attention effect and compare it to the information-based explanations, showing how both explain the EAP.

[1] This literature includes research attributing the EAP to systematic risk (Ball and Kothari 1991; Hsieh et al. 1999; Patton and Verardo 2012; Savor and Wilson 2016), idiosyncratic risk (Cohen et al. 2007; Barber et al. 2013), or market frictions affecting liquidity providers (Levi and Zhang 2015; Johnson and So 2017) or speculators (Berkman et al. 2009).

In the first phase, I use a setting of earnings notifications, which, like EAs, are firm-initiated press releases distributed to investors via paid newswires and are therefore likely to grab attention. However, unlike EAs, notifications provide no additional information about firm performance. Thus I argue they provide a research setting that disentangles the effect of attention from that of new information.[2] I find abnormal returns of between 8 and 11 basis points, 41% more internet searches of the SEC's repository of firm filings (EDGAR searches), and 5% higher trading volume on notification days. As additional evidence of an attention effect, I show that notification-day returns are higher for lower visibility firms (where additional attention should have a larger effect) and firms for which short selling is more constrained (which limits the trading choices to buying or abstaining from trade, increasing the effect of attention on returns).

In the second phase, I show that earnings notifications attenuate attention to the EA. Given the similar attention-grabbing properties of notifications and EAs and the fact that the earnings notification occurs soon before the EA, the behavioral literature on habituation predicts a diminished response to the EA (Thompson and Spencer 1966; Groves and Thompson 1970; Rankin et al. 2009). Thus, to the extent that the EAP is caused by attention, the effect should diminish in the presence of an earnings notification. Consistent with this prediction, I find that, when firms provide notifications, returns are 0.24% *higher* over the five trading days before the EA (when notifications often occur) and 0.22% *lower* around the EA. EDGAR searches around the EA are also lower in the presence of earnings notifications.

To provide more robust evidence of this effect, I use a difference-in-difference research design around the time when notifications were exogenously mandated for many firms.[3] This approach mitigates selection concerns related to managers' discretionary or strategic use of notifications

[2] While the explicit content of notifications is limited to scheduling information, they may provide implicit information about earnings through the advancement or delay of the EA date (Johnson and So 2016). As discussed in Section 2.4, I take several steps to control for implicit information revealed in earnings notifications.

[3] With the adoption of Reg FD, the SEC required firms holding earnings conference calls to publicly announce, in advance, the date and time of the call to facilitate public participation. See the SEC's Reg FD compliance and disclosure interpretations at http://www.sec.gov/divisions/corpfin/guidance/regfd-interp.htm.

(Boulland and Dessaint 2014; DeHaan et al. 2015). Using this setting, I find that the EAP declined 0.44% for firms initiating notifications. I also find that non-earnings press releases in the month before the EA and shorter notification lead times are negatively associated with attention and returns around the EA. These findings suggest that attention explains at least part of the EAP because notifications or other news announcements before the EA attenuate its attention-grabbing effect, reducing the EAP.

In the third phase, I reconcile the attention and information-based explanations by describing when they explain the EAP. First, I analyze daily returns around the EA to show when attention and information explain returns. I find that returns are higher on notification days before the EA but are lower on days t=0 and t+1 in the presence of a notification. Consistent with the information explanation, I find that liquidity explains returns before the EA (Johnson and So 2017; Levi and Zhang 2015), idiosyncratic risk explains returns on and immediately after the EA (Cohen et al. 2007; Barber et al. 2013), and systematic risk is positively associated with returns throughout the EA period (Ball and Kothari 1991; Patton and Verardo 2012). These results demonstrate that the two explanations jointly explain the EAP.

Next, I form portfolios based on quintiles of EDGAR searches by new users. Identifying attention by new investors matters because their only trading choices are to buy or abstain from trading (assuming many avoid short-selling), thereby causing upward pressure on prices around attention-grabbing events (Barber and Odean 2008). I find that the EAP only exists in the top two quintiles of EDGAR searches by new users over the days [-5, 5] and that the well-documented pattern of post-EA return reversals is absent from these quintiles. This suggests that attention helps explain the EAP, particularly in the days immediately following the EA. This pattern persists after extending this analysis in a regression framework and controlling for the information explanations. These results suggest that attention increases the EAP, in part by mitigating the well-documented pattern of post-EA return reversals.

My results provide new evidence that attention explains a significant proportion of the EAP, using a setting that distinguishes the effect of attention from the effect of new information. They also reconcile the attention and information explanations, suggesting the attention explanation dominates the information explanations after the EA but is dominated by the information explanations beforehand.

2 Background and hypothesis development

2.1 Information and market friction explanations of the EAP

Information and risk-based explanations of the EAP include those attributing the EAP to systematic risk, idiosyncratic risk, or market frictions arising from new information revealed in the EA. Ball and Kothari (1991) show that the EAP is partially explained by temporary increases in systematic risk around EAs. Hsieh et al. (1999) show that the increase in beta around EAs is a function of firm characteristics. More recently, Patton and Verardo (2012) find that beta increases with the information content of earnings. Savor and Wilson (2016) argue that systematic risk increases around EAs because the covariance of cash flow news between the firm and the market spikes around the EA and that beta does not fully capture systematic risk when discount rate news is highly correlated across firms.

A second group of papers explains the EAP based on idiosyncratic risk. Cohen et al. (2007) argue that increased voluntary disclosures reduce the resolution of firm-specific uncertainty with the EA, decreasing the EAP. Barber et al. (2013) show that the EAP is larger in countries with more idiosyncratic volatility.

Finally, several papers explain the EAP based on market frictions. Berkman et al. (2009) argue that short-sale constraints give rise to a pre-EA run-up in prices. Johnson and So (2017) show that liquidity providers seek to reduce their net positions in advance of EAs, which makes it more

expensive to trade on negative news, leading to positive pre-EA returns. Levi and Zhang (2015) show that some investors reduce liquidity purchases ahead of EAs.

2.2 Attention explanations of the EAP

Barber and Odean (2008) argue that the universe of available stocks is simply too large for many investors to search across when considering which ones to purchase. Thus attention constrains purchase decisions. Attention is less likely to constrain decisions to sell because investors attend to stocks they own, which is usually a much smaller set than the universe of stocks available for purchase. Therefore attention-grabbing events increase the number of potential buyers of a stock without increasing the number of potential sellers. This effect is strongest for new investors in a firm, for whom the only trading choices are to buy or abstain from trading, assuming many investors do not sell short.

The literature supporting the attention explanation includes the work of Lee (1992), who observes an "anomalous proclivity" of small investors to buy stocks around significant news events, regardless of the direction of the news. Similarly, Hirshleifer et al. (2008) show that retail investors are net buyers around both positive and negative extreme news. Frazzini and Lamont (2007) find that firms with predictably high trading volumes during announcement months have higher EA returns. They also show that volume and returns increase together in the few days before the EA and that small investors sharply increase net buying on the EA date. Aboody et al. (2010) find that firms with high stock returns have higher EA returns followed by price reversals. More recently, Lawrence et al. (2017) provide evidence of a causal relationship between attention and positive abnormal returns, using a field experiment in which attention is randomly assigned.

2.3 Robustness of evidence supporting the attention explanation

The literature supporting the information explanation has raised questions about the robustness of evidence supporting the attention explanation. For example, Barber et al. (2013) find that trading

volume before the EA (when most of the EAP is generated) is *negatively* associated with the EAP. Similarly, Levi and Zhang (2015) find *negative* net buying for firms experiencing higher mutual fund selling and higher returns before the earnings announcement. Both of these results seem to contradict the primary result of Frazzini and Lamont (2007) that abnormal trading volume is positively associated with the EAP. Additionally, Cohen et al. (2007) find that the relationship between abnormal volume and the EAP is sensitive to how abnormal volume is measured.[4] A broader potential concern about proxies for attention, including trading volume used by Frazzini and Lamont (2007) and returns used by Aboody et al. (2010), is that they conflate attention and information, particularly when measured around EAs, which are both information-rich and attention-grabbing. My results help address these concerns by providing evidence of the attention effect, using a setting that more cleanly disentangles attention from information (earnings notifications) and an empirical proxy that explains returns before, during, and after the EA (EDGAR searches by new users).

2.4 Earnings notifications

With the passage of Regulation Fair Disclosure (Reg FD), firms were required to broadly disseminate advance notice of earnings conference calls, including "the date, time, subject matter and call-in information for the conference call."[5] Firms typically provide this information in a press release distributed through a newswire. I label these announcements "earnings notifications" to distinguish them from EAs and from earnings pre-announcements, which contain earnings forecasts and are voluntary (while notifications are mandatory for conference call firms).[6]

[4] See footnote 27 of Cohen et al. (2007).

[5] See the SEC's Reg FD compliance and disclosure interpretations at http://www.sec.gov/divisions/corpfin/guidance/regfd-interp.htm.

[6] My approach assumes that earnings notifications reach investors with awareness constraints. This is supported by the broad dissemination capabilities of the newswires. For example, BusinessWire distributes to more than 89,000 media outlets in 162 countries (https://services.businesswire.com/press-release-distribution). PR Newswire claims 3,000 media outlets at 9,000 organizations (see http://www.prnewswire.com/solutions/Content-Distribution.html). Marketwire and GlobeNewswire also claim broad dissemination capabilities (http://www.marketwired.com/Products/Distribute and

The timing of earnings notifications closely relates to managers' scheduling of EAs. DeHaan et al. (2015) show that managers strategically schedule EAs to hide bad news or feature good news. They also find that the scheduling lead time is positively associated with investor attention at the EA and with the earnings surprise. While the scheduling of an earnings announcement reveals informative signals about the future earnings news, investors appear to unravel only the most salient signal immediately. Specifically, DeHaan et al. (2015) find that scheduling date returns are negative for Friday EAs but not for after-hours or busy-day EAs. In addition, they find no immediate reaction to a delay in the expected EA date.

Boulland and Dessaint (2014) find that earnings notification lead times are positively associated both with attention around the EA and with the earnings surprise. Their evidence suggests managers use notifications to moderate investor attention to EAs. In contrast to DeHaan et al. (2015), they find that investors immediately respond to changes in the expected EA date but not to the notification lead time. Johnson and So (2016) find no difference in scheduling-day returns for firms advancing or delaying their earnings date, although they find that this information is subsequently impounded into prices. Thus, while these papers differ on which signals are immediately unraveled by investors, they all show some degree of incomplete processing of information revealed in scheduling announcements (earnings notifications).

These findings have several implications for my approach. First, they show that, while notifications contain no explicit earnings-related information, they provide implicit information about the earnings news. Given that my intent is to use earnings notifications to isolate the effect of attention, I control for delays in the EA and the subsequent earnings surprise in my notification tests. Second, these results emphasize the need to control for the potentially endogenous relationship between notifications and earnings news. I do this by using the period when notifications were exogenously mandated. However, these findings also support my use of

https://globenewswire.com/Index). My assumption is also supported by the fact that paid newswires are the most common dissemination tool firms use to publish EAs to meet the SEC's requirement of broad disclosure (NIRI 2016).

notifications to isolate the effect of attention because information effects are arguably reduced; investors fully process only the most salient signals immediately.

2.5 Earnings notifications and habituation

Literature on habituation shows a reduced reaction to a repeated stimulus (Rankin et al. 2009; Thompson and Spencer 1966; Groves and Thompson 1970). In my setting, because earnings notifications and earnings announcements are both firm-initiated news releases, they are likely to be sufficiently similar for habituation to occur. Both are likely to appear through the same news application, similarly presented as news headlines, using similar beginning language, such as "Company X announces…") Research on habituation predicts that, given the similarities of two events occurring in a relatively short period, the presence of the first (the earnings notification) will attenuate the reaction to the second (the EA). Thus habituation describes how the earnings notification would attenuate attention to the EA, allowing for empirical identification of the effect of attention on the EAP.

2.6 Hypothesis development

Consistent with increased attention causing positive returns around attention-increasing events, I predict that there are positive returns and higher attention on earnings notification days. This leads to my first hypothesis (stated in the alternative form).

H1: Abnormal returns are positive on notification days.

The literature on habituation predicts a reduced reaction to a repeated stimulus. Given the similar attention-grabbing characteristics of earnings notifications and EAs, the attention-grabbing effect of the EA is likely to be diminished by the earnings notification. Stated in the alternative form, my second hypothesis is as follows.

H2: Earnings notifications reduce investor attention to EAs.

Next, I consider the prediction of Barber and Odean (2008) that attention by new investors increases returns around attention-grabbing events because these investors exhibit asymmetric demand. In the presence of short-selling constraints, once new investors become aware of a firm, their only trading choice is whether to buy the stock. To the extent that earnings notifications attenuate their attention to the EA, I expect the EAP to be lower in the presence of earnings notifications.[7] Stated in the alternative form, my third hypothesis is as follows.

H3: Returns around EAs are lower in the presence of earnings notifications.

3 Data sample, research design, and empirical results

3.1 Sample construction

I identify earnings notifications from headlines of firm-initiated press releases on four major newswires (PR Newsire, MarketWire, BusinessWire, and Globe Newswire), accessed through the Factset news search application. Consistent with the work of Bushee and Miller (2012) and Core et al. (2008), I assume that press releases on newswires are firm initiated. I distinguish earnings notifications from other releases through an analysis of the title and date of the release. To be classified as an earnings notification, the title of the press release must include language indicating an upcoming earnings release or conference call.[8] I omit notifications with a lead time of more than 50 days (3.2% of the sample) because these are often erroneous observations.[9] I use this period around the adoption of Reg FD (between the fourth quarter of 1999 and the third quarter of 2002) for the difference-in-difference tests because this is when earnings notifications were first exogenously mandated for conference call firms.

[7] While this prediction is based on trading by new investors, I lack trading data specific to new investors and therefore make a prediction on overall stock returns. I rely on subsequent tests using EDGAR searches by new users to provide corroborating evidence specific to new investors.

[8] I categorize a press release as an earnings notification if the headline contains either (i) one of the following words/phrases—*conference call*, *results call*, *webcast*, or *earnings call*—and one of the following words—*earnings*, *results*, *quarter*, *fiscal*, or *year*—or (ii) one of the following words/phrases—*to announce*, *to report*, *to release*, *date*, or *timing*—and one of the following words—*earnings*, *results*, *quarter*, *fiscal*, or *year*.

[9] These are usually other types of announcements falsely identified as notifications or notifications with incorrectly recorded dates (i.e., the date of the press release in Factset is not the date in the original press release).

I use data from internet searches of the SEC's repository of firm filings (EDGAR) to create an empirical proxy for attention by new investors (*PropNewSearches*). This data is advantageous in my setting because it directly measures attention and is available by firm and day (Drake et al. 2015; DeHaan et al. 2015; Bozanic et al. 2017). Additionally, the data includes a masked version of the user's IP address and is therefore sufficient to identify search patterns by distinct users or groups of users (Bozanic et al. 2017).[10]

Despite these advantages, the EDGAR data also has limitations in my setting. First, EDGAR is only one of many information sources; thus it may not reflect investor attention more broadly. Second, the data captures only the external IP address used to download each filing and may therefore reflect usage by more than one individual at the same location. This is less of a concern for residential locations, as multiple EDGAR users at a single residence are less common. However, for business internet users, it is common to route traffic from multiple users through relatively few external IP addresses.[11] This is both an advantage and disadvantage in my setting. The advantage is that, if a business user changes computers or offices within the same location, the external IP address captured by EDGAR remains the same. The disadvantage is that my approach may fail to recognize new searchers if users in the same firm have overlapping search patterns (i.e., if they search filings from the same firms). However, my approach partially mitigates this concern because I identify new searchers not only based on the IP address but also the combination of the IP address and the EDGAR firm whose filings are searched. Thus, even when one external IP address represents the searches of multiple individuals, to the extent that individual users are searching the filings of different firms, my measure would still correctly identify new searchers.[12] Taken together,

[10] The uniqueness of each IP address is preserved in the masked IP address. As described in the EDGAR documentation: "This variable provides the first three octets of the IP address with the fourth octet obfuscated with a 3 character string that preserves the uniqueness of the last octet without revealing the full identity of the IP (###.###.###.xxx)." EDGAR server log files and documentation are available at https://www.sec.gov/data/edgar-log-file-data-set.

[11] Bozanic et al. (2017) discuss this issue and its implications in Section 2.1 of their online appendix.

[12] A third limitation is that residential internet users often have dynamic IP addresses, meaning the external IP address is periodically reset by the internet service provider. This issue is less of a concern for businesses, who typically reserve IP

these limitations suggest that inferences from tests using EDGAR data are subject to the caveat that my measure is a noisy proxy for attention by new investors. Subject to this caveat, I define new searchers as those who have not searched any of the firm's filings within the prior year.[13]

Other variables are constructed using data from publicly available data sources, including CRSP, Compustat, IBES, and the RavenPack events database. I attempt to preserve the largest possible sample of observations to conduct each of the empirical tests; therefore I use different samples across the empirical analyses. The construction of each sample is described in Panel A of Table 1.

3.2 Descriptive statistics

Panel B of Table 1 provides descriptive statistics on the primary sample of 149,708 firm-quarters. Returns average 23.3 basis points over the 11-day window centered on the EA (*CAR [-5,5]*). Consistent with literature documenting a run-up in returns before the EA followed by a reversal, returns average 42.6 basis points over the five trading days immediately before the EA (*CAR [-5, -1]*), which is 183% of the 11-day return centered on the EA. There is an average of approximately 60 total EDGAR searches over days [0,1], relative to the EA date (*TotalSearches*).[14] Slightly more than half (55.5%) of the searches over days [0,1], relative to the EA date, are conducted by new searchers (*PropNewSearches [0,1]*). I observe notifications in 54.5% of observations (*NotifyQtr*).

addresses that remain fixed for long periods. To quantify the potential impact of IP address resetting, I randomly select 1,000 instances of new searchers of a firm's filings. I find that over 70% of these searchers had searched EDGAR filings of other firms in the prior year, which suggests that these are correctly identified as new searchers of firm filings, rather than old searchers with new IP addresses (in which case I would see no previous searches of any firm from that IP address). Given that the remaining 30% also includes entirely new EDGAR users (which are correctly identified as new searchers), this suggests the measure largely captures new searchers of a firm's filings, although with noise.

[13] Inferences from my results are unchanged when I identify new searchers as those not having searched the firm's filings in the previous six, 18, or 24 months, with the exception that the coefficient estimate on *NotifyQtr* in Column 2 of Table 3 is significant only on a one-tailed basis when using the six-month window (t-stat=-1.42).

[14] $e^{(4.108)}$= 60.8. This is generally comparable to results of DeHaan et al. (2015), who report an average of 49 EDGAR downloads over days [0,1], relative to the EA. The remaining difference is likely due to the fact that my measure includes all downloads, while theirs is limited to 8Ks.

3.3 Abnormal returns and new investor attention on notification days

With the first hypothesis, I predict positive returns on notification days. To test this prediction, I identify the subset of firm-quarters in which a notification was provided and for which sufficient data is available on a comparable non-event day. I use five trading days prior to the notification day as the non-event day. Using a non-event day soon before the notification is motivated in part by survey evidence that many firms adopt quiet periods in the weeks leading up to the EA, which implies that notifications are provided when there is relatively little information flowing from the firm.[15] Using five trading days before the notification day as the non-event day also controls for unique factors arising from the day of the week on which the notification was provided. I avoid using a non-event day after the notification day because some notifications have short lead times, which implies that the subsequent days may include the EA day. I identify 135,340 firm-quarters for which required data is available for the notification day and the non-event day. After I include the notification day and the non-event day, the sample consists of twice this number of observations (270,680). Using this sample, I estimate the following OLS regression.

$$\begin{aligned} AbnormalReturn_{it} = {} & \beta_{NotifyLeadtime} + \beta_{yearXqtr} + \beta_{Industry\ or\ firm} + \beta_1 NotifyDay_{it} \\ & + \beta_2 AnnouncementLagCh_{it} + \beta_3 StdAnnLag_{it} + \beta_4 EarningSurprise_{it} + \\ & + \beta_5 NotifyDayNews_{it} + \beta_6 NotPriorYearReturn_{it} + \beta_7 LnMveq_{it} \\ & + \beta_8 MarketToBook_{it} + \beta_9 FridayEA_{it} + \varepsilon_{it}, \end{aligned} \quad (1)$$

where *NotifyDay* is my variable of interest and equals one for the notification-day and zero for the non-event day. The control variables and fixed effects are intended to control for factors other than investor attention that may influence notification-day returns. I include fixed effects for the number of days between the notification and the EA, which is potentially informative of the earnings surprise (DeHaan et al. 2015; Boulland and Dessaint 2014), the intersection of year/quarter, and industry or firm. I also control for information about a delay in the expected future EA date, as revealed in the earnings notification (*AnnouncementLagCh*), because this is also

[15] See the 2015 Trading Blackouts and Quiet Periods Survey conducted by the National Investor Relations Institute, available at https://www.niri.org/analytics.

informative of the earnings news (Johnson and So 2016). Additionally, *StdAnnLag* controls for the extent to which the earnings notification resolves uncertainty about the date of the upcoming EA, even in the absence of a delay. To control for managers' strategic use of earnings notifications, I include the ex-post earnings surprise (*EarningSurprise*). *NotifyDayNews* controls for other news announced on the same day as notifications. *NotPriorYearReturn*, *LnMveq*, and *MarketToBook* control for priced factors. *FridayEA* controls for the negative signal about the earnings news revealed when the firm schedules a Friday EA (DeHaan et al. 2015). Panel C of Table 1 provides descriptive statistics on this sample.

The first hypothesis predicts positive returns on notification days, leading to a prediction of $\beta_1>0$ in Equation 1. Column 1 of Panel A, Table 2, shows that notification day returns are 8.2 basis points higher than returns on the non-event day (t-stat = 5.34).[16] Consistent with the results of DeHaan et al. (2015), I find a negative coefficient on *FridayEA*. Consistent with the findings of DeHaan et al. (2015) and Johnson and So (2016), I find no evidence of an immediate reaction to a delay in the EA date (*AnnouncementDelayCh*). In Column 2, I include firm fixed effects with little change to inferences from Column 1.

To provide additional evidence of an attention effect, I next estimate Equation 1 on two sets of partitioned samples: (i) firms above or below the median level of analyst coverage (which is five analysts) and (ii) those above or below the median short interest ratio, calculated as the short interest as a percentage of total shares outstanding, as of the most recent monthly reporting period. To the extent that positive earnings notification day returns are driven by attention, I expect the magnitude of the coefficient estimate for *NotifyDay* to be larger for firms with lower analyst coverage because the incremental effect of increased attention is likely to be greater for less visible firms. Similarly, to the extent that positive returns around attention-increasing events are driven by

[16] When I estimate Equation 1 using non-event days of t-3 and t-1, relative to the notification date, instead of t-5 as reported in Table 2, coefficient estimates on *NotifyDay* suggest notification day abnormal returns of 9.4 bps and 10.5 bps, respectively (untabulated). When I modify Equation 1 by omitted fixed effects and non-event day observations, the coefficient estimate of the intercept term suggests notification day abnormal returns of 11.3 bps (also untabulated).

new investors who avoid short selling, I expect positive returns on notification days to be higher for firms where short-selling is relatively constrained (i.e., where short interest is lower). Results in Columns (3) through (6) are consistent with these predictions.[17]

To provide additional evidence that notifications increase investor attention, I modify Equation 1 by replacing the dependent variable with a measure of abnormal EDGAR searches by new users (*AbNewSearches*) and total EDGAR searches (*AbTotalSearches*).[18] Columns (1) and (2) of Table 2 Panel B show that abnormal total and new searches are higher on notification days than on the non-event day (t-stats = 16.24 and 22.27, respectively). The coefficient estimates suggest that abnormal total (new) searches are 41% (27%) higher on the notification day than on the non-event day.[19] In Column (3), I use abnormal trading volume (*AbVolume*) as the dependent variable. I find that abnormal trading volumes are 5% higher on notification days than on the non-event day. These results are consistent with earnings notifications increasing investor attention. In Column (4), I use implied stock option volatility as the dependent variable (*ImpliedVol*) as an additional test of the potential information content of earnings notifications. I find weak evidence that notifications increase implied volatility (t-stat=1.67). Overall, I interpret these results as evidence that increased attention, rather than new information, explains positive returns on notification days.

3.4 Earnings notifications and investor attention around EAs

In the second hypothesis, I predict that earnings notifications attenuate attention to EAs. I test this prediction by estimating the following OLS regression across the subsample of firm-quarters for which EDGAR search data is available.

$$Attention_{it} = \beta_{yearXqtr} + \beta_{firm} + \beta_1 NotifyQtr_{it} + \beta_2 Liquidity_{it} + \beta_3 Beta_{it} + \beta_4 LnReturnVolatility_{it}$$

[17] In untabulated analysis, I find similar inferences when using institutional ownership or firm size as proxies for visibility, instead of analyst coverage.

[18] The search variables used in Table 2 (*AbNewSearches* and *AbTotalSearches*) are constructed relative to the 10-day window before the notification non-event day and are only used in the notification tests reported in Table 2. In subsequent analyses, I use other measures of EDGAR searches (*TotalSearches [X,Y]* and *PropNewSearches [X,Y]*). See Appendix 2 for variable definitions.

[19] Calculated as the coefficient on *NotifyDay* divided by the mean of the dependent variable on the non-event day.

$$+ \beta_5 LnMveq_{it} + \beta_6 MarketToBook_{it} + \beta_7 PriorYearReturn_{it}$$
$$+ \beta_8 AnnouncementLag_{it} + \beta_9 EarningsVolatility_{it} + \beta_{10} YearReturnVolatility_{it}$$
$$+ \beta_{11} EarningSurprise_{it} + \beta_{12} NotifyDayNews_{it} + \beta_{13} NumAnalysts_{it}$$
$$+ \beta_{14} NumSecFilings_{it} + \beta_{15} InstOwnership_{it} + \beta_{16} FirmAge_{it} + \beta_{17} Forecasts_{it} + \varepsilon_{it}. \quad (2)$$

I use two proxies for attention, total EDGAR searches (*TotalSearches*) and the proportion of searches conducted by new searchers (*PropNewSearches*), both measured over days [0,1], relative to the EA date. *NotifyQtr* is my variable of interest and equals one for firm-quarters in which I observe an earnings notification. I strive to isolate the effect of the earnings notification from other factors that may affect investor attention around EAs. Besides including the intersection of year/quarter and firm fixed effects, I control for the information and risk-based explanations, including stock price liquidity (*Liquidity*), systematic risk (*Beta*), idiosyncratic risk (*LnReturnVolatility*) as well as priced factors, such as firm size (*LnMveq*), the market-to-book ratio (*MarketToBook*), prior returns (*PriorYearReturn*), and systematic risk arising from early season announcers (*AnnouncementLag*). I also control for other characteristics or events shown to be associated with EDGAR searches or that seem reasonably likely to affect attention (*EarningsVolatility*, *YearReturnVolatility*, *EarningSurprise*, *NotifyDayNews*, *NumAnalysts*, *NumSecFilings*, *InstOwnership*, *FirmAge*, and *Forecasts).* These variables are defined in Appendix 2. I expect notifications to attenuate the attention-increasing effect of EAs, which leads to a prediction of a negative coefficient estimate on *NotifyQtr* in Equation 2 ($\beta_1 < 0$).

Consistent with this prediction, in Columns (1) and (2) of Table 3, I find negative coefficient estimates for both *TotalSearches* and *PropNewSearches* (t-stats: -5.38 and -2.34, respectively). These results support the prediction that attention to the EA is lower in the presence of a notification. I also find notable differences in the results of some control variables when comparing Columns (1) and (2). These can be explained in part by the difference between overall attention (*TotalSearches [0,1]*) and attention by new investors, conditional on the overall level of attention (*PropNewSearches [0,1]*). For example, *PriorYearReturn* is negatively associated with

TotalSearches [0,1] but positively associated with *PropNewSearches [0,1]*. These results are consistent with overall lower levels of information discovery but relatively more attention from new investors when returns have been high, consistent with the findings of Aboody et al. (2010).

3.5 Earnings notifications and returns around EAs

In the third hypothesis, I predict that the EAP is lower in the presence of notifications. I test this by modifying Equation 2 by replacing the dependent variable with abnormal returns around the EA (*CAR[0,1]*). I choose the two-day window beginning with the EA date to focus on the return on and immediately following the EA.[20] Consistent with notifications attenuating attention to the EA and reducing the EAP, Column (3) of Table 3 shows that EA returns are 21.5 basis points lower for firm-quarters with notifications (t-stat=-2.43). Next, I modify Equation 2 by replacing the dependent variable with returns over the five-day window leading up to the EA date, when many notifications are provided (*CAR[-5,-1]*). Column (4) of Table 3 shows that returns are 23.9 basis points higher for notification firm-quarters over this five-day window (t-stat=2.75), which further supports the attenuation effect.

Given managers' potential discretionary or strategic use of earnings notifications and to provide causal evidence that earnings notifications reduce the EAP, I test for this attenuation effect when notifications became exogenously mandated for many firms with the adoption of Reg FD. To identify the subsample of firms that thus initiated notifications, I observe the frequency of firms providing their first notification. While there is a sharp increase with the adoption of Reg FD at the end of 2000, there is also an elevated level of first notifications over several previous and subsequent quarters, consistent with a staggered implementation. To include as many of these firms as possible, I identify those firms providing their first notification between the fourth quarter of 1999 and the third quarter of 2002 as treatment firms for the purposes of the following tests

[20] Johnson and So (2017) show that, when EA dates are correctly identified, positive returns around the EA occur primarily in the days immediately preceding the announcement. In all of my empirical tests, I follow their method, also used by DellaVigna and Pollet (2009), for identifying earnings announcement dates (using the earlier of the Compustat or IBES date and adjusting the date one trading day forward if the IBES timestamp is after the market close).

(*Notifier=1*). For these firms, I implement two sets of tests. The first is a within-firm test across only those firms initiating notifications during this period. I estimate the following OLS regression across the 16 quarters centered on the first quarter in which each firm initiated notifications.

$$CAR[0,1]_{it} = \beta_{yearXqtr} + \beta_{firm} + \beta_1 Post_{it} + Controls_{it} + \varepsilon_{it}, \quad (3)$$

where *Post* is an indicator variable equal to one (zero) for the eight quarters after (before) the first notification.[21] Control variables are the same as those used as in Equation 2. I expect that notifications will attenuate attention to the EA, reducing the EAP, which leads to a prediction of a negative coefficient estimate on *Post* ($\beta_1<0$). Column 1 of Table 4 shows that EA returns are 51.8 basis points lower in the post-period for firms initiating notifications (t-stat= -2.39). This evidence supports the prediction that the EAP is lower in the presence of notifications.

Next, I estimate a difference-in-difference regression by excluding the quarters during the initiation period (fourth quarter of 1999 to third quarter of 2002) and identifying the previous eight quarters (fourth quarter of 1997 to third quarter of 1999) as the pre-period (*Post*=0) and the subsequent eight quarters (fourth quarter of 2002 to third quarter of 2004) as the post-period (*Post*=1). I also include nonnotifying control firms (*Notifier=0*) to estimate the following OLS regression.

$$CAR[0,1]_{it} = \beta_{yearXqtr} + \beta_{firm} + \beta_1 Post_{it} + \beta_2 Notifier_{it} + \beta_3 Post^{*} Notifier_{it} + Controls_{it} + \varepsilon_{it}. \quad (4)$$

I expect returns around EAs to be lower in the presence of notifications, which leads to a prediction of a negative coefficient estimate on *Post*Notifier* in Equation 4 ($\beta_3<0$). Column (2) of Table 4 shows that EA returns are 43.7 basis points lower for notifier firms in the post-period (t-stat=-2.38). This evidence supports my prediction that returns around EAs are lower in the presence

[21] In Equation 3, *Post* is not collinear with the Year X Qtr fixed effects in Equation 3 because the year and quarter of the first notification vary by firm. The advantage of this design is that it exploits the staggered implementation to offset potential concerns related to time effects. In contrast, *Post* is collinear with the fixed effects in Equation 4 because it is estimated across a consistent period for all firms.

of earnings notifications because the notifications attenuate the attention-increasing effect of EAs.[22] In Columns (3) and (4), I estimate modified versions of Equation 4 using industry, instead of firm, fixed effects and a propensity-score-matched sample (in Column 4).[23] I interpret results in Table 4 as evidence that EA returns are lower in the presence of an earnings notification.

To provide additional evidence of the attenuation effect and the resulting reduction in the EAP, I model the effect of notification lead time and non-earnings press releases on attention and returns around EAs. To the extent that the attention-grabbing events just before the EA attenuate attention to it, the literature on habituation would predict that the effect should be stronger for firms with shorter notification lead times. Similarly, I also predict that the presence of other attention-increasing events in the weeks leading up to the EA will attenuate the attention to it. I test these two predictions by estimating the following OLS regression.

$$CAR[0,1]_{it} \text{ OR } PropNewSearches[0,1]_{it} = \beta_{yearXqtr} + \beta_{firm} + \beta_1 NotifyLeadtime_{it} \text{ Or } PressRelease_{it} + Controls_{it} + \varepsilon_{it}, \quad (5)$$

where *NotifyLeadtime* is the number of trading days between the earnings notification and the EA. *PressRelease* is an indicator variable set equal to one if the firm provided at least one press release in the 30 days before the EA, as captured by the Ravenpack events database. I exclude press releases about earnings or dividends, as these may include information directly related to the upcoming earnings announcement. Control variables are the same as those in Equation 2.

Table 5 presents the results of Equation 5. Columns (1) and (3) show that the notification lead time is positively associated with returns and attention by new investors at the EA. This is consistent with shorter lead times attenuating attention to the EA. This result extends the similar result of DeHaan et al. (2015) by showing that lead time is positively associated with attention at the EA, after controlling for the earnings surprise, which suggests that the attention effect is

[22] In untabulated analysis, I find that the average announcement returns for notifier and nonnotifier firms follow a similar pattern during the two years preceding the period used in the difference-in-difference analysis. This supports the parallel trends assumption inherent in the difference-in-difference methodology.

[23] I use the following model in the first stage of the PSM model, motivated by factors likely to predict whether a firm was a conference call firm before Reg FD: $Notifier_i = \beta_{industry} + \beta_1 LnMveq_i + \beta_2 MarketToBook_i + \beta_3 Age_i + \beta_4 EarningsVolatility_i + \varepsilon_i$. Estimation results from the first-stage model are untabulated.

incremental to managers' strategic use of notifications. Columns (2) and (4) show that non-earnings press releases in the 30 days before the EA also attenuate attention and returns around the EA, similar to earnings notifications. These results provide additional support for the attenuation effect.

These results, combined with prior evidence on the attenuation effect, suggest an alternative interpretation for why longer notification lead times increase investor attention to the EA (Boulland and Dessaint 2014; DeHaan et al. 2015), which is that longer lead times don't necessarily *cause* higher attention but that shorter lead times attenuate more attention from the EA. This explanation is based on the literature on habituation in which awareness-increasing events have a diminished effect when they are repeated in close proximity.

3.6 Reconciling attention and information explanations of the EAP

3.6.1 Event-time returns and earnings notifications

To reconcile the attention and information-based explanations of the EAP, I first replicate the notification results in event time around the EA to show when the information-based or attention-based explanations influence returns. Specifically, I estimate the following OLS model by day over the 11 days centered on the EA.

$$\begin{aligned} Abnormal\ Return_{itd} = {} & \beta_1 NotifyDay_{itd} + \beta_2 PreEANotification_{itd} + \beta_3 Liquidity_{itd} + \beta_4 Beta_{itd} \\ & + \beta_5 LnReturnVolatility_{it} + \beta_6 LnMveq_{it} + \beta_7 MarketToBook_{it} + \beta_8 PriorYearReturn_{it} \\ & + \beta_9 AnnouncementLag_{it} + \beta_{10} YearReturnVolatility_{it} + \beta_{11} EarningSurprise_{it} + \varepsilon_{it}, \end{aligned} \quad (6)$$

where *NotifyDay* is an indicator variable set to one on notification days (and only populated on days before the EA) and *PreEANotification* is an indicator variable set to one for firm-quarters in which there is an earnings notification (and only populated for days on or after the EA). I omit fixed effects to facilitate the interpretation of the constant term, cluster standard errors by firm and EA date, and use daily regressions to reconcile my results with the literature. The sample consists of 321,263 firm-quarters for which daily returns and other necessary data are available.

In Panel A of Table 6, I include only the constant term to show average daily returns for purposes of comparison with Panels B and C. Consistent with the pattern documented elsewhere, Panel A shows that daily abnormal returns are positive and increasing over the days leading to the EA, followed by a reversal immediately afterward (Johnson and So 2017). In Panel B, I include *NotifyDay* and *PreEANotification*. I find that notifications increase abnormal daily returns over the days leading to the EA (days t-5 to t-1). I also find evidence of the attenuation effect of notifications on the EA date, as evidenced by average returns of -9.7 (9.4) basis points for notify (nonnotify) observations on day *t=0*.[24]

In Panel C, I include the variables from Equation 6 representing the information and risk-based explanations, including stock price liquidity (*Liquidity*), systematic risk (*Beta*), idiosyncratic risk (*LnReturnVolatility*), priced factors such as firm size (*LnMveq*), the market-to-book ratio (*MarketToBook*), prior returns (*PriorYearReturn*), systematic risk arising from early season announcers (*AnnouncementLag*), and total stock price volatility (*YearReturnVolatility*). I also include the earnings surprise to control for managers' potentially strategic use of earnings notifications (*EarningSurprise*). Results in Panel C provide additional evidence of the attenuation effect. *NotifyDay* is positive and significant on the days before the EA (columns labeled t-5 through t-1) and then negative on and immediately afterward (columns t=0 through t+3 and t+5). I also find evidence consistent with previous evidence in support of the information explanations of the EAP. Specifically, liquidity explains returns in the days immediately before the EA (Johnson and So 2017; Levi and Zhang 2015). Additionally, systematic risk is positively associated with returns on every day throughout the period, but the magnitude of its effect increases on the EA day and remains elevated for one more day, consistent with increasing systematic risk around the EA (Ball and Kothari 1991; Hsieh et al. 1999; Patton and Verardo 2012). Idiosyncratic risk explains returns

[24] The coefficient estimate of *PreEANotification* on event day t=0 of Panel B is -0.097, which indicates that returns for notify observations are 9.7 basis points lower than those of nonnotify observations.

on and immediately after the EA (Barber et al. 2013; Cohen et al. 2007). Firm size and the market-to-book also explain returns throughout the window and have larger magnitudes on the EA day.

These results help reconcile the attention explanation with the information-based explanations by showing that they can co-exist.[25] Additionally, they address the unresolved question of when attention matters around the EA and how it can cause the EAP, even when positive returns occur primarily before the EA. In particular, they show that, because of the attenuation effect, some of the positive return that would otherwise have occurred on or after the EA occurs beforehand because of the earnings notification.

3.6.2 Event-time returns and EDGAR downloads by new searchers

To quantify the attention effect more generally (and independent of the earnings notifications setting), I conduct event-time analyses using the proportion of EDGAR searches conducted by new users (*PropNewSearches*). The advantages of using this measure are that (i) it directly proxies for attention by new investors, (ii) it is not limited to the earnings notifications setting, and (iii) it is available for many firms.

I begin by analyzing the relationship between *PropNewSearches* and returns in univariate portfolio analysis. Panel A of Table 7 shows a positive association between quintiles of *PropNewSearches* over the 10 days immediately preceding the EA window (*PropNewSearches [-15,-6])* and returns across three EA event-time windows (days [-5, 5], [-5,-1], and [0,5], relative to the EA date). Looking over the longest window, *CAR [-5,5]*, the earnings announcement premium only exists in the highest two quintiles of *PropNewSearches* and increases significantly from the lowest to highest quintiles. This suggests that attention by new investors has significant explanatory

[25] For example, Cohen et al. (2007) interpret the significant reduction in the EAP around increased pre-EA disclosure as evidence that less idiosyncratic risk resolution around the EA reduced the EAP. My evidence suggests more pre-announcement disclosure may have attenuated the attention-grabbing effect of EAs, lowering the EAP. Savor and Wilson (2016) find that firms announcing earlier in the earnings season have a higher EAP. They attribute this to risk arising from the market's extrapolation of the earnings news of early announcers. However, firms announcing earlier in the earnings season may also attract more investor attention. While my evidence is insufficient to substantiate the role of attention in these settings, it suggests that both explanations warrant consideration.

power over returns around the EA. Over the 11-day window (*CAR [-5,5]*), the difference between the highest and lowest quintiles is 36.2 basis points (44.2 minus 8.0). All of this this difference is generated after the EA, as evidenced by the fact that the difference between the highest and lowest quintiles of *CAR [1,5]* is 37.9 basis points (6.2 minus -31.7). In contrast, the difference between the highest and lowest quintiles of *CAR* [-5, -1] is not statistically significant. In Panel B of Table 7, I extend this analysis in a multivariate setting, after controlling for the information explanations. Consistent with the univariate results, I find that, while attention explains returns over the entire EA window, its effect is concentrated in the days following the EA. These results suggest the attention explanation dominates the information explanations after the EA but is dominated by the information explanations beforehand.

These results also help address an open question in the literature, which is whether the attention effect occurs *in response* to attention-grabbing events (Barber and Odean 2008; Frazzini and Lamont 2007) or *in anticipation* of them (Aboody et al. 2010). The previous evidence from earnings notifications clearly demonstrates an attenuation effect, consistent with investors reacting to attention-grabbing events. Similarly, the results using *PropNewSearches* suggest that attention has a greater effect during and after the earnings announcement. This is supported by the fact that even the lowest quintiles of *PropNewSearches* demonstrate a pre-announcement run-up in prices (*CAR[-5,-1]*) but that post-EA return reversals are absent from the highest two quintiles over days [0,5], relative to the EA date. This suggests that attention increases the EAP, in part, by mitigating the well-documented pattern of return reversals following the EA.

4 Additional considerations

4.1 Earnings notifications and information acquisition

A potential alternative explanation of the difference-in-difference results is that earnings notifications change information acquisition around EAs. For example, earnings notifications may

remind busy investors that earnings will be disclosed soon, which may motivate them to acquire more private information or to trade on previously acquired private information before the EA. This explanation is broadly consistent with limited attention, even among sophisticated investors (DellaVigna and Pollet 2009; Hirshleifer et al. 2009). This explanation would predict more pre-EA price drift and less post-EA price drift in the direction of the earnings surprise, to the extent that notifications help busy investors anticipate the earnings news before the EA or interpret it faster afterward. I test these predictions by estimating a modified version of Equation 4, using pre- and post-EA returns as dependent variables on a sample partitioned by positive or negative unexpected earnings.

Table 8 provides the results of this analysis. I find no evidence of the alternative explanation in either the positive or negative unexpected earnings partitions. While results in column (2) suggest a negative pre-EA price drift in positive unexpected earnings firm-quarters, this is the opposite of what the alternative explanation would predict.

4.2 Possible effects of Reg FD requiring open conference calls

Another potential alternative explanation of the difference-in-difference results is that they are driven by changes in the information environment around Reg FD. For example, the requirement to provide open conference calls could have reduced managers' incentives to provide conference calls, changing the mix of firms providing earnings notifications. However, Bushee et al. (2004) document a high degree of stability in the number of firms hosting conference calls around the adoption of Reg FD, which helps mitigate this concern. A second way that open conference calls may influence my results is by changing risk around EAs. Research suggests that opening conference calls to the public increases stock price volatility (Bushee et al. 2003). However, an increase in volatility is consistent with higher risk and a higher EAP, which is the opposite of what I find.

5 Conclusion

I revisit the causes of positive returns around earnings announcements. While the literature provides evidence in support of both attention and information-based explanations, recent work focuses on the latter, raises questions about the former, and does little to reconcile the two. I provide evidence that attention explains a significant proportion of positive returns around earnings announcements using a setting that more cleanly distinguishes the effect of attention from that of new information.

I use earnings notifications, which are short announcements of the date and time of the upcoming earnings announcement and attract investor attention without providing much new information. I find positive returns, abnormal trading volumes, and abnormal EDGAR searches on earnings notification days, consistent with an attention effect. I also find a significant reduction in the level of positive returns around the earnings announcement in the presence of earnings notifications, suggesting that notifications attenuate investor attention to the earnings announcement. My results suggest the attention explanation dominates the information explanations after the earnings announcement but is dominated by the information explanations beforehand. This is consistent with attention increasing the EAP, in part, by mitigating the well-documented pattern of return reversals following the earnings announcement.

These results extend prior literature attributing higher returns around earnings announcements to investor attention (Frazzini and Lamont 2007; Hirshleifer et al. 2008; Aboody et al. 2010; Lawrence et al. 2017) in a setting that largely retains assumptions of rationality but assumes positive awareness costs and short-selling constraints (Barber and Odean 2008). The behavioral dimension of my explanation is limited to the attenuated reaction to the earnings announcement caused by the earnings notification, which I argue is best explained by habituation. In documenting the role of investor attention, my results do not contradict information-based explanations that positive returns around earnings announcements arise from liquidity risk, systematic risk, and idiosyncratic risk.

Rather, they describe how both the attention and information-based explanations jointly explain positive returns around earnings announcements.

References

Aboody, D., Lehavy, R., & Trueman, B. (2010). Limited attention and the EA returns of past stock market winners. *Review of Accounting Studies*, 15(2), 317–344.

Ball, R., & Kothari, S. (1991). Security returns around EAs. *The Accounting Review*, 66, 718–738.

Barber, B., De George, E., Lehavy, R., & Trueman, B. (2013). The EA premium around the globe. *Journal of Financial Economics*, 108(1), 118–138.

Barber, B., & Odean, T. (2008). All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors. *Review of Financial Studies*, 21(2), 785–818.

Berkman, H., Dimitrov, V., Jain, P., Koch, P., & Tice, S. (2009). Sell on the news: Differences of opinion, short-sales constraints, and returns around EAs. *Journal of Financial Economics*, 92(3), 376–399.

Boulland, R., & Dessaint, O. (2014). Announcing the announcement. Working paper, ESSEC Business School.

Bozanic, Z., Hoopes, J., Thornock, J., & Williams, B. (2017). IRS attention. *Journal of Accounting Research*, 55(1), 79–114.

Bushee, B., Matsumoto, D., & Miller, G. (2003). Open versus closed conference calls: The determinants and effects of broadening access to disclosure. *Journal of Accounting and Economics*, 34(1), 149–180.

Bushee, B., Matsumoto, D., & Miller, G. (2004). Managerial and investor responses to disclosure regulation: The case of Reg FD and conference calls. *The Accounting Review*, 79(3), 617–643.

Bushee, B., & Miller, G. (2012). Investor relations, firm visibility, and investor following. *The Accounting Review*, 87(3), 867–897.

Cohen, D., Dey, A., Lys, T., & Sunder, S. (2007). EA premia and the limits to arbitrage. *Journal of Accounting and Economics*, 43(2), 153–180.

Core, J., Guay, W., & Larcker, D. (2008). The power of the pen and executive compensation. *Journal of Financial Economics*, 88(1), 1–25.

DeHaan, E., Shevlin, T., & Thornock, J. (2015). Market (in)attention and the strategic scheduling and timing of EAs. *Journal of Accounting and Economics*, 60(1), 36–55.

DellaVigna, S., & Pollet, J. (2009). Investor inattention and Friday EAs. *The Journal of Finance*, 64(2), 709–749.

Drake, M., Roulstone, D., & Thornock, J. (2015). The determinants and consequences of information acquisition via EDGAR. *Contemporary Accounting Research* , 32(3), 1128-1161.

Frazzini, A., & Lamont, O. (2007). The EA premium and trading volume. National Bureau of Economic Research. Working paper.

Groves, P, & Thompson, R. (1970). Habituation: a dual-process theory. *Psychological Review*, 77(5), 419.

Hirshleifer, D., Lim, S., & Teoh, S. (2009). Driven to distraction: Extraneous events and underreaction to earnings news. *The Journal of Finance*, 64(5), 2289–2325.

Hirshleifer, D., Myers, J., Myers, L., & Teoh, S. (2008). Do individual investors cause post-earnings announcement drift? Direct evidence from personal trades. *The Accounting Review*, 83(6), 1521–1550.

Hsieh, S., Jerris, S., & Kross, W. (1999). Quarterly earnings announcements and market risk adjustments. *Journal of Business Finance & Accounting*, 26(3-4), 313–336.

Johnson, T., & So, E. (2017). Asymmetric trading costs prior to earnings announcements: Implications for price discovery and returns. *Journal of Accounting Research*, 56(1), 217-263.

Johnson, T., & So, E. (2016). Time will tell: Information in the timing of scheduled earnings news. *Journal of Financial and Quantitative Analysis*, forthcoming

Lawrence, A., Ryans, J., Sun, E., & Laptev, N. (2017). Earnings Announcement Promotions: A Yahoo Finance Field Experiment. Working paper.

Lee, C. (1992). Earnings news and small traders: An intraday analysis. *Journal of Accounting and Economics*, 15(2), 265–302.

Levi, S., & Zhang, X. (2015). Asymmetric decrease in liquidity trading before earnings announcements and the announcement return premium. *Journal of Financial Economics*, 118(2), 383–398.

National Investor Relations Institute (NIRI). 2016. NIRI Earnings Process Practices Research Report. Available at: https://www.niri.org/analytics.

Patton, A., & Verardo, M. (2012). Does beta move with news? Firm-specific information flows and learning about profitability. *Review of Financial Studies*, 25(9), 2789–2839.

Rankin, C., Abrams, T., Barry, R., Bhatnagar, S., Clayton, D., Colombo, J., & McSweeney, F. (2009). Habituation revisited: an updated and revised description of the behavioral characteristics of habituation. *Neurobiology of Learning and Memory*, 92(2), 135–138.

Savor, P., & Wilson, M. (2016). Earnings announcements and systematic risk. *The Journal of Finance*, 71(1), 83–138.

Thompson, R., & Spencer, W. (1966). Habituation: a model phenomenon for the study of neuronal substrates of behavior. *Psychological Review*, 73(1), 16.

Appendix 1: Examples of earnings notifications

Amazon.com to Webcast Fourth Quarter 2010 Financial Results Conference Call

January 17, 2011 04:01 PM Eastern Standard Time

SEATTLE--(BUSINESS WIRE)--Amazon.com, Inc. (NASDAQ:AMZN) announced today that it will hold a conference call to discuss its fourth quarter 2010 financial results on January 27, 2011, at 2:00 p.m. PT/5:00 p.m. ET.

The event will be webcast live, and the audio and associated slides will be available for at least three months thereafter at www.amazon.com/ir.

PepsiCo Announces Webcast of Conference Call on Third-Quarter 2009 Earnings

PURCHASE, N.Y., Sept. 15 /PRNewswire-FirstCall/ -- PepsiCo, Inc. (NYSE: PEP) today announced that its third-quarter 2009 earnings conference call and slide presentation for financial analysts and investors will be webcast live over the internet on Thursday, October 8, 2009 at 8 a.m. eastern time.

The company will issue its financial results at approximately 7 a.m. eastern time that morning.

The live webcast will be accessible through PepsiCo's website at http://www.pepsico.com, in the “Investors” section under “Investor Presentations.”

Expedia, Inc. to Audiocast Earnings Conference Call

BELLEVUE, Wash., July 12, 2012 /PRNewswire/ -- Expedia, Inc. (NASDAQ: EXPE) will host a conference call to discuss results for its second quarter ended June 30, 2012 on Thursday, July 26 at 2:00 p.m. Pacific Daylight Time / 5:00 p.m. Eastern Daylight Time. A live audiocast of the call will be available to the public at http://www.expediainc.com/ir and replays are expected to be available for at least three months.

Expedia, Inc. will post a release reporting its results on the Company's investor relations site at http://www.expediainc.com/ir approximately one hour prior to the call. The release will not be distributed via newswire.

Appendix 2: Variable definitions

Panel A: Variables unique to the notification tests (Table 2)

Variable	Definition
NotifyDay	An indicator variable equal to one if there was a notification provided on the day.
AnnouncementLagCh	The change in the announcement lag, relative to the same quarter of the prior year.
StdAnnLag	The standard deviation of the announcement lag over the prior eight quarters, where the announcement lag is the number of days between the end of the fiscal period and the earnings announcement date.
NotPriorYearReturn	The cumulative value-weighted market adjusted return over the previous year, measured at five days before the earnings notification date.
FridayEA	An indicator variable equal to one if the EA occurred on a Friday.
AbNewSearches	The number of EDGAR searches by new users divided by the average number for the firm over the 10 trading days before the non-event day (trading days -15 to -6 relative to the earnings notification).
AbTotalSearches	The total number of EDGAR searches divided by the average number for the firm over the 10 trading days before the non-event day (trading days -15 to -6 relative to the earnings notification).
AbVolume	Trading volume divided by average daily trading volume over the 10 trading days before the non-event day (trading days -15 to -6 relative to the earnings notification).
ImpliedVol	Implied stock option volatility from the Option Metrics database.

Panel B: Variables unique to the daily returns analyses (Table 6)

Variable	Definition
AbnormalReturn	The daily value-weighted market-adjusted return.
NotifyDay	An indicator variable equal to one if there was a notification provided on the day.
PreEANotification	An indicator variable set to one for firm-quarters in which there is an earnings notification (and only populated for days on or after the EA).

Panel C: Control and other variables used in multiple analyses

Variable	Definition
CAR [X,Y]	The value-weighted market-adjusted return over the trading days [*X,Y*], relative to the EA date, times 100.
TotalSearches [X,Y]	The natural log of one plus the total number of EDGAR searches over days [X,Y], relative to the EA date.
PropNewSearches [X,Y]	The proportion of total EDGAR searches over days [X,Y], relative to the EA date, from IP addresses that had not searched any of the firm's filings over the previous year, times 100.
NotifyQtr	An indicator variable equal to one for firm-quarters in which the firm provided an earnings notification.
Liquidity	The ratio of returns to dollar volume times one million, measured daily for analyses in Table 6 or as the average over days [-10 to 10], relative to the EA date, otherwise.
Beta	The ratio of the firm's covariance of returns with the market to the variance of the market returns over 16 intra-day periods, following Patton and Verardo (2012), measured daily for analyses in Table 6 or as the average over days [-10 to 10], relative to the EA date, otherwise.
LnReturnVolatility	The natural log of the ratio of the sum of squares of returns during the announcement period (days t-1 to t+1) to the sum of squares of returns in the entire quarter, following Cohen et al. (2007).
LnMveq	The natural log of the market value of equity, measured on the last day of the fiscal quarter.
MarketToBook	The ratio of the market value of equity to the book value of equity, measured on the last day of the fiscal quarter.
PriorYearReturn	The cumulative value-weighted market-adjusted return over the prior year, measured on the last day of the fiscal quarter.
AnnouncementLag	The number of days between the end of the fiscal period and the earnings announcement date.
EarningsVolatility	The standard deviation of the firm's quarterly earnings scaled by the market value of equity over the prior eight quarters.
YearReturnVolatility	The standard deviation of the daily value-weighted market-adjusted return over the prior year, measured on the last day of the fiscal quarter.
EarningSurprise	Earnings before unusual items less earnings before unusual items in the same quarter of the prior year scaled by the market value of equity at the end of the fiscal quarter.
NotifyDayNews	An indicator variable equal to one if there was a nonnotification news event about the firm on the notification date as observed by the Ravenpack events database.

NumAnalysts	The unique number of analysts who made earnings forecasts for the firm during the prior fiscal quarter.
NumSecFilings	The number of SEC filings in the previous quarter, excluding Form 4 filings.
InstOwnership	The percentage of shares owned by institutional investors as of the most recent reporting period before the end of the quarter.
FirmAge	The number of quarters since information was first available on the firm through Compustat.
Forecasts	An indicator variable equal to one if the firm provided earnings forecasts in the prior quarter as identified by the IBES management forecast database.
Post	An indicator variable set equal to one for observations after the initiation of earnings notifications.
Notifier	An indicator variable set equal to one for firms initiating earnings notifications between Q4 of 1999 and Q3 of 2002.
PressRelease	An indicator variable equal to one if the firm provided at least one non-earnings or dividend-related press release in the 30 days before the earnings announcement, as recorded in the RavenPack events database.
NotifyLeadtime	The number of trading days between the earnings notification and the earnings announcement.

Table 1: Sample construction and descriptive statistics

Panel A: Sample construction

		Number of Observations	Used In
(1)	Firm-quarters between August of 1996 (when notification data is first available) and the end of 2013, for which necessary data is available from CRSP, Compustat, and IBES.	321,263	Table 6
(2)	Two observations (one for the notification day and one for the non-event day) for each of 135,340 firm-quarters in which a notification was provided.	270,680	Table 2
(3)	Firm-quarters for which EDGAR search data is available	149,708	Tables 3, 5 & 7
(4)	The 16 quarters centered on the first quarter of an earnings notification for firms that initiated notifications between Q4 of 1999 and Q3 of 2002	45,667	Table 4
(5)	Observations for both notifier and nonnotifier firms over the eight quarters before and after the Reg FD initiation period (Q4 of 1999 to Q3 of 2002)	87,496	Tables 4 & 8
(6)	Subset of row (5) after matching notifier and nonnotifier firms	52,359	Table 4

This panel describes how samples in the study were constructed. The column labeled "Number of Observations" indicates the number of firm-quarters in each sample. The column labeled "Used In" describes which tables use the associated sample. Some of the empirical results use subsamples based on data availability as noted in the subsequent tables.

Panel B: Descriptive statistics (primary sample)

Variable	*Mean*	*25%*	*Median*	*75%*	*Std. Dev.*	*N*
CAR [-5,5]	0.233	-6.215	-0.363	5.506	14.633	149,708
CAR [-5,-1]	0.426	-2.833	-0.005	2.936	8.297	149,708
CAR [0,1]	-0.086	-4.081	-0.205	3.585	9.884	149,708
CAR [0,5]	-0.142	-5.580	-0.412	4.648	12.386	149,708
TotalSearches [0,1]	4.108	3.332	4.127	4.890	1.166	149,708
PropNewSearches [0,1]	55.467	40.000	55.128	71.074	22.525	149,708
PropNewSearches [-15,-6]	56.914	46.673	56.655	66.667	15.392	149,708
NotifyQtr	0.545	0.000	1.000	1.000	0.498	149,708
Liquidity	1.618	0.001	0.011	0.160	7.527	149,708
Beta	0.808	0.319	0.787	1.253	0.746	149,708
LnReturnVolatility	-2.774	-3.665	-2.686	-1.759	1.515	149,708
LnMveq	5.985	4.536	5.942	7.346	2.013	149,708
MarketToBook	2.666	1.108	1.804	3.066	4.088	149,708
PriorYearReturn	0.064	-0.255	-0.029	0.230	0.567	149,708
AnnouncementLag	36.623	26.000	34.000	42.000	16.281	149,708
EarningsVolatility	0.031	0.004	0.011	0.030	0.059	149,708
YearReturnVolatility	0.032	0.018	0.026	0.039	0.021	149,708
EarningSurprise	-0.003	-0.007	0.001	0.009	0.109	149,708
NotifyDayNews	0.113	0.000	0.000	0.000	0.317	149,708
NumAnalysts	5.503	0.000	3.000	8.000	6.528	149,708
NumSecFilings	8.416	4.000	7.000	11.000	5.820	149,708
InstOwnership	0.446	0.055	0.441	0.784	0.359	149,708
FirmAge	69.081	34.000	57.000	92.000	46.385	149,708
Forecasts	0.266	0.000	0.000	1.000	0.442	149,708
NotifyLeadtime	10.303	5.000	9.000	14.000	6.829	81,919
PressRelease	0.304	0.000	0.000	1.000	0.460	149,708

This panel provides descriptive statistics on the primary sample. Continuous variables other than returns are winsorized at the 1% and 99% levels. Variable definitions are provided in Appendix 2.

Panel C: Descriptive statistics (notifications sample)

Variable	*Mean*	*25%*	*Median*	*75%*	*Std. Dev.*	*N*
AbnormalReturn	0.072	(1.249)	(0.031)	1.217	3.786	270,680
NotifyDay	0.500	0.000	0.500	1.000	0.500	270,680
StdAnnLag	6.197	1.581	2.510	4.509	13.379	270,680
AnnouncementLagCh	(0.730)	(1.000)	0.000	2.000	7.386	270,680
EarningSurprise	(0.002)	(0.007)	0.001	0.008	0.089	270,680
NotPriorYearReturn	0.091	(0.252)	(0.007)	0.272	0.596	270,680
NotifyDayNews	0.032	0.000	0.000	0.000	0.176	270,680
LnMveq	6.419	5.142	6.386	7.642	1.844	270,680
FridayEA	0.053	0.000	0.000	0.000	0.225	270,680
MarketToBook	2.743	1.184	1.926	3.263	3.779	270,680
AbNewSearches	1.192	0.276	0.692	1.460	1.570	103,100
AbTotalSearches	1.171	0.366	0.796	1.499	1.260	103,100
AbVolume	1.065	0.583	0.857	1.249	0.866	270,680
ImpliedVol	0.502	0.355	0.468	0.609	0.203	103,100
NotifyLeadtime	9.997	5.000	9.000	14.000	6.518	270,680

This panel provides descriptive statistics on the notifications sample used in Table 2. Continuous variables other than returns are winsorized at the 1% and 99% levels. Variable definitions are provided in Appendix 2.

Table 2: Comparison of returns, EDGAR searches, trading volume, and implied volatility on the notification day, relative to five days earlier, for a sample of 135,340 notifying firm-quarters

Panel A: Returns on day t-5 and t=0 relative to the earnings notification

	Dependent Variable: *AbnormalReturn*					
	Full Sample	*Full Sample*	*Below Median Analyst Coverage*	*Above Median Analyst Coverage*	*Below Median Short Interest*	*Above Median Short Interest*
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
NotifyDay	0.082***	0.084***	0.167***	0.002	0.165***	-0.010
	(5.34)	(5.51)	(6.81)	(0.09)	(6.19)	(-0.44)
AnnouncementLagCh	-0.001	-0.002	-0.004*	0.002	-0.003	0.001
	(-0.79)	(-1.45)	(-1.75)	(0.97)	(-1.19)	(0.30)
StdAnnLag	-0.001	-0.000	0.001	-0.001	0.000	-0.001
	(-1.36)	(-0.35)	(1.09)	(-1.44)	(0.22)	(-1.15)
EarningSurprise	0.972***	0.900***	0.982***	0.749***	0.948***	0.662**
	(5.64)	(5.21)	(4.40)	(2.81)	(3.50)	(2.37)
NotifyDayNews	0.028	-0.000	0.174	-0.040	-0.054	0.112
	(0.47)	(-0.01)	(1.18)	(-0.67)	(-0.58)	(1.33)
NotPriorYearReturn	0.109***	0.149***	0.166***	0.126***	0.186***	0.122***
	(4.82)	(6.43)	(6.12)	(3.54)	(5.32)	(4.16)
LnMveq	-0.047***	-0.272***	-0.368***	-0.209***	-0.402***	-0.246***
	(-7.08)	(-10.24)	(-9.90)	(-5.19)	(-8.04)	(-5.57)
MarketToBook	-0.000	0.001	-0.004	0.006	-0.001	0.006
	(-0.02)	(0.22)	(-0.82)	(1.35)	(-0.09)	(1.20)
FridayEA	-0.054*	-0.055	-0.070	-0.050	-0.117*	0.021
	(-1.69)	(-1.49)	(-1.21)	(-1.23)	(-1.91)	(0.38)
N	270,680	270,680	133,198	137,482	111,914	111,914
Adj. R^2	0.003	0.022	0.017	0.033	0.032	0.018
P-value of difference in *NotifyDay* across partitions			<0.000		<0.000	
Fixed effects	Year X Qtr, Event Day, Industry	Year X Qtr, Event Day, Firm	Year X Qtr, Event Day, Firm	Year X Qtr, Event Day, Firm	Year X Qtr, Event Day, Firm	Year X Qtr, Event Day, Firm
Non-event day	t-5	t-5	t-5	t-5	t-5	t-5
SE clustered by:	Day	Day	Day	Day	Day	Day

This panel analyzes returns on earnings notifications days, relative to a non-event day, as described in Equation 1. Two observations exist in the sample for each firm-quarter, one for the notification day (t=0) and one for the non-event day (t-5). *AbnormalReturn* is the value-weighted market-adjusted return. *NotifyDay* is set to one for the notification day and zero for the non-event day (t-5). Columns (1) and (2) report results for the full sample. Column 3 (4) reports results for firms below (above) the median level of analyst coverage in this sample, which is five analysts. Column 5 (6) reports results for firms below (above) the median short-interest ratio, calculated as the short interest as a percentage of total shares outstanding, as of the most recent monthly reporting period. The table footer reports the p-values from a test of the difference in *NotifyDay* across the partitioned samples (one-tailed). Variable definitions are provided in Appendix 2. Fixed effects are taken by the intersection of year and quarter, event day, and industry or firm as noted. Continuous variables other than returns are winsorized at the 1% and 99% levels. Standard errors are clustered by day. *, **, *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Panel B: EDGAR searches, trading volume, and implied volatility on day t-5 and t=0

	Dependent Variable:			
	AbNewSearches	*AbTotalSearches*	*AbVolume*	*ImpliedVol*
	(1)	*(2)*	*(3)*	*(4)*
NotifyDay	0.283***	0.391***	0.054***	0.001*
	(16.24)	(22.27)	(12.28)	(1.67)
AnnouncementLagCh	0.001	0.002**	0.001**	-0.000
	(1.21)	(2.46)	(2.36)	(-0.15)
StdAnnLag	-0.001	-0.001	-0.000	-0.000
	(-1.55)	(-1.40)	(-0.63)	(-0.66)
EarningSurprise	0.042	0.093	0.065***	-0.071***
	(0.60)	(1.62)	(2.66)	(-7.58)
NotifyDayNews	0.266***	0.205***	0.309***	0.002
	(10.62)	(10.45)	(23.44)	(1.47)
NotPriorYearReturn	-0.006	-0.011	0.006	0.011***
	(-0.53)	(-1.23)	(1.56)	(9.32)
LnMveq	0.002	-0.006	-0.024***	-0.097***
	(0.14)	(-0.55)	(-6.28)	(-64.23)
MarketToBook	-0.002	-0.001	0.002***	0.001***
	(-1.45)	(-0.71)	(2.64)	(7.57)
FridayEA	-0.022	-0.032	0.007	0.000
	(-0.85)	(-1.51)	(0.80)	(0.04)
N	103,100	103,100	270,680	103,100
Adj. R^2	0.028	0.048	0.029	0.705
Fixed effects	Year X Qtr, Event Day, Firm	Year X Qtr, Event Day, Firm	Year X Qtr, Event Day, Firm	Year X Qtr, Event Day, Firm
SE clustered by day	Yes	Yes	Yes	Yes
Non-event day	t-5	t-5	t-5	t-5

This panel analyzes EDGAR searches, trading volume, and implied volatility on earnings notifications days, relative to a non-event day. Two observations exist in the sample for each firm-quarter, one for the notification day (t=0) and one for the non-event day (t-5). *NotifyDay* is set to one for the notification day and 0 for the non-event day. *AbNewSearches* is the number of EDGAR searches by new users divided by the average number for the firm over the 10 trading days before the non-event day (days -15 to -6 relative to the earnings notification). *AbTotalSearches* is the total number of EDGAR searches divided by the average number for the firm over the 10 trading days before the non-event day (days -15 to -6 relative to the earnings notification). *AbVolume* is trading volume divided by average daily trading volume over the 10 trading days before the non-event day (days -15 to -6 relative to the earnings notification). *ImpliedVol* is implied stock option volatility from the Option Metrics database. Other variables are defined in Appendix 2. Fixed effects are taken by the intersection of year and quarter, event day, and firm. The sample in columns (1), (2), and (4) consist of the observations for which EDGAR search data and implied volatility are both available. Continuous variables other than returns are winsorized at the 1% and 99% levels. Standard errors are clustered by day. *, **, *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 3: Comparison of EDGAR searches and returns around earnings announcements for 149,708 notifying and nonnotifying firm-quarters

	Dependent Variables:			
	TotalSearches [0,1]	*PropNewSearches [0,1]*	*CAR [0,1]*	*CAR [-5,-1]*
	(1)	*(2)*	*(3)*	*(4)*
NotifyQtr	-0.045***	-0.497**	-0.215**	0.239***
	(-5.38)	(-2.34)	(-2.43)	(2.75)
Liquidity	-0.003***	0.009	0.003	-0.038***
	(-5.95)	(0.81)	(0.34)	(-4.42)
Beta	0.000	0.103	0.452***	0.368***
	(0.01)	(0.99)	(4.04)	(4.03)
LnReturnVolatility	0.028***	0.429***	0.323***	0.000
	(17.65)	(10.69)	(7.36)	(0.01)
LnMveq	0.098***	-0.381**	-1.690***	-1.298***
	(13.41)	(-2.34)	(-16.56)	(-10.03)
MarketToBook	0.003***	-0.015	-0.001	0.000
	(3.82)	(-0.83)	(-0.09)	(0.02)
PriorYearReturn	-0.021***	0.463***	-0.185**	-0.193**
	(-4.01)	(3.53)	(-2.50)	(-2.52)
AnnouncementLag	0.009***	-0.026***	-0.015***	-0.006
	(17.82)	(-3.52)	(-4.09)	(-1.29)
EarningsVolatility	0.155**	-1.705	0.048	1.597*
	(2.52)	(-1.01)	(0.05)	(1.68)
YearReturnVolatility	5.857***	-7.056	-17.002***	26.819***
	(21.04)	(-1.15)	(-4.01)	(4.77)
EarningSurprise	-0.257***	0.456	10.407***	1.406***
	(-14.39)	(0.97)	(19.66)	(3.11)
NotifyDayNews	-0.006	-0.352	0.213**	0.144*
	(-0.76)	(-1.64)	(2.17)	(1.87)
NumAnalysts	0.012***	0.036	-0.027**	0.012
	(8.86)	(1.27)	(-2.05)	(1.09)
NumSecFilings	0.012***	-0.164***	0.006	-0.002
	(22.12)	(-13.82)	(1.13)	(-0.44)
InstOwnership	-0.120***	0.688	0.071	-0.411**
	(-5.19)	(1.33)	(0.31)	(-2.16)
FirmAge	-0.006	-0.109	0.011	-0.023
	(-1.26)	(-1.39)	(0.36)	(-0.93)
Forecasts	-0.025***	1.030***	0.044	0.211***
	(-2.91)	(4.69)	(0.46)	(2.74)
N	149,708	149,708	149,708	149,708
Adj. R^2	0.651	0.148	0.044	0.037
Fixed effects	Firm, Year X Qtr	Firm, Year X Qtr	Firm, Year X Qtr	Firm, Year X Qtr
SE Clustered by:	Firm, EA Date	Firm, EA Date	Firm, EA Date	Firm, EA Date

This table models EDGAR searches and returns around the earnings announcement (EA) as a function of an earnings notification as described in Equation 2. *TotalSearches [0,1]* is the natural log of 1 plus the total number of EDGAR searches over days [0,1], relative to the EA date. *PropNewSearches [0,1]* is the proportion of total EDGAR searches over days [0,1], relative to the EA date from IP addresses that had not searched any of the firm's filings over the previous year, times 100. *CAR [X,Y]* is the value-weighted market-adjusted return over the trading days [X,Y], relative to the EA date, times 100. *NotifyQtr* is an indicator variable set equal to one for firm-quarters in which an earnings notification is observed. Other variables are defined in Appendix 2. Fixed

effects are taken by firm and the intersection of year and quarter. Continuous variables other than returns are winsorized at the 1% and 99% levels. Standard errors are clustered by firm and EA date. *, **, *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 4: Changes in earnings announcement returns for firms initiating earnings notifications between Q4 of 1999 and Q3 of 2002

	Dependent Variable: *CAR[0,1]*			
	Initiators (Pre / Post)	*Diff in Diff (Firm FE)*	*Diff in Diff (Ind. FE)*	*Diff in Diff (Matched)*
	(1)	*(2)*	*(3)*	*(4)*
Post	-0.518**			
	(-2.39)			
Notifier			0.121	0.054
			(1.12)	(0.45)
*Post * Notifier*		-0.437**	-0.783***	-0.612***
		(-2.38)	(-5.13)	(-3.19)
Liquidity	-0.017	-0.015	0.026***	0.041**
	(-0.96)	(-1.31)	(2.74)	(2.08)
Beta	0.390*	0.082	-0.100	-0.026
	(1.85)	(0.63)	(-0.81)	(-0.17)
LnReturnVolatility	0.404***	0.592***	0.572***	0.475***
	(5.71)	(11.48)	(10.61)	(8.29)
LnMveq	-1.706***	-1.550***	-0.290***	-0.265***
	(-9.95)	(-12.61)	(-8.14)	(-5.69)
MarketToBook	0.013	0.012	-0.024***	-0.018*
	(0.62)	(1.02)	(-2.59)	(-1.67)
PriorYearReturn	0.111	-0.523***	-0.233***	-0.299***
	(0.98)	(-5.64)	(-3.01)	(-3.33)
AnnouncementLag	-0.039***	-0.026***	-0.017***	-0.011**
	(-4.90)	(-5.71)	(-4.77)	(-2.42)
EarningsVolatility	-1.331	-0.979	-5.844***	-5.217***
	(-0.87)	(-0.81)	(-6.97)	(-4.85)
YearReturnVolatility	-2.102	2.501	-1.047	-8.239*
	(-0.29)	(0.39)	(-0.27)	(-1.65)
EarningSurprise	8.577***	11.059***	11.570***	11.968***
	(10.56)	(14.87)	(16.66)	(11.94)
NotifyDayNews	0.322	-0.034	0.166	-0.093
	(0.87)	(-0.15)	(0.83)	(-0.41)
NumAnalysts	-0.089***	0.007	0.019**	0.018*
	(-4.18)	(0.40)	(2.18)	(1.72)
NumSecFilings	0.045***	0.022**	0.001	-0.000
	(3.06)	(2.39)	(0.12)	(-0.04)
InstOwnership	-0.680	0.509*	0.778***	0.728***
	(-1.34)	(1.75)	(6.30)	(5.18)
FirmAge	-0.068	0.075	0.004***	0.002**
	(-0.07)	(0.17)	(3.86)	(2.01)
Forecasts	0.212	0.239**	0.132	0.167
	(1.39)	(2.10)	(1.41)	(1.57)
N	45,667	87,496	87,496	52,359
Adj. R^2	0.119	0.155	0.027	0.024
Fixed effects:	Firm, Year X Qtr	Firm, Year X Qtr	Industry, Year X Qtr	Industry, Year X Qtr
SE Clustered by:	Firm, EA Date	Firm, EA Date	Firm, EA Date	Firm, EA Date

This table analyzes changes in earnings announcement (EA) returns when firms begin providing earnings notifications, as described in Equations (3) and (4). The dependent variable, *CAR[0,1]*, is the value-weighted market-adjusted return over the trading days [0,1], relative to the EA date, times 100. The sample consists of firms providing their first earnings notification during the initiation window (which is defined as the fourth quarter of 1999 to the third quarter of 2002, inclusive). Column (1) reports the results from the within-firm test, in which the sample consists of the eight quarters before and after the first quarter containing an earnings notification. Columns

(2) through (4) report the results of the difference-in-difference analysis, in which the sample consists of the eight quarters before and after the initiation window for both notifier (*Notifier*=1) and nonnotifier (*Notifier*=0) firms. *Post* is set equal to one (zero) for observations after (before) the first notification. Other variables are defined in Appendix 2. Fixed effects are taken by firm and the intersection of year and quarter in Columns (1) and (2) or by industry and the intersection of year and quarter in Columns (3) and (4). *Post* is excluded in Columns (2), (3), and (4) because it is collinear with the time fixed effects. *Notifier* is excluded in Column (2) because it is collinear with the firm fixed effect. Continuous variables other than returns are winsorized at the 1% and 99% levels. Standard errors are clustered by firm and EA date. *, **, *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 5: The association between returns and EDGAR searches around earnings announcements and notification lead time and pre-EA press releases

	Dependent Variables:			
	CAR[0,1]		*PropNewSearches [0,1]*	
	(1)	*(2)*	*(3)*	*(4)*
NotifyLeadtime	0.016***		0.033**	
	(3.21)		(2.13)	
PressRelease		-0.100*		-0.554***
		(-1.72)		(-3.55)
Liquidity	0.039***	0.004	-0.017	0.009
	(2.69)	(0.89)	(-0.74)	(0.83)
Beta	0.703***	0.423***	-0.048	0.096
	(6.09)	(5.49)	(-0.32)	(0.93)
LnReturnVolatility	0.180***	0.346***	0.516***	0.426***
	(4.50)	(11.21)	(10.00)	(10.65)
LnMveq	-1.569***	-1.170***	-0.182	-0.392**
	(-16.99)	(-17.69)	(-0.78)	(-2.42)
MarketToBook	0.020**	0.008	-0.003	-0.014
	(2.23)	(1.18)	(-0.14)	(-0.80)
PriorYearReturn	-0.175**	-0.127**	0.471***	0.466***
	(-2.43)	(-2.36)	(2.75)	(3.55)
AnnouncementLag	-0.033***	-0.018***	-0.017	-0.025***
	(-7.64)	(-6.54)	(-1.56)	(-3.46)
EarningsVolatility	-1.835*	-0.556	1.633	-1.740
	(-1.90)	(-0.87)	(0.68)	(-1.03)
YearReturnVolatility	-14.201***	-5.720*	-2.527	-6.700
	(-3.09)	(-1.89)	(-0.29)	(-1.10)
EarningSurprise	9.259***	9.467***	0.320	0.457
	(16.83)	(25.84)	(0.45)	(0.97)
NotifyDayNews	0.153*	0.115	-0.300	-0.500**
	(1.85)	(1.51)	(-1.35)	(-2.39)
NumAnalysts	-0.026**	-0.027***	0.061*	0.035
	(-2.52)	(-3.48)	(1.73)	(1.23)
NumSecFilings	0.000	0.004	-0.150***	-0.164***
	(0.04)	(0.94)	(-9.87)	(-13.80)
InstOwnership	0.207	0.304*	-0.333	0.809
	(0.94)	(1.93)	(-0.49)	(1.56)
FirmAge	-0.030	-0.020	-0.031	-0.111
	(-0.97)	(-0.91)	(-0.33)	(-1.42)
Forecasts	-0.004	0.014	0.908***	1.028***
	(-0.05)	(0.20)	(3.44)	(4.69)
N	134,892	280,163	81,919	149,708
Adj. R^2	0.045	0.044	0.151	0.148
Fixed effects	Firm, Year X Qtr	Firm, Year X Qtr	Firm, Year X Qtr	Firm, Year X Qtr
Clustered SE: Firm, EA Date	Yes	Yes	Yes	Yes

This table models attention and returns around the earnings announcement (EA) as a function of notification lead time and the presence of a non-earnings press release in the 30 days before the EA. *CAR [0,1]* is the value-weighted market-adjusted return over the trading days [0,1], relative to the EA date. *PropNewSearches [0,1]* is the proportion of total EDGAR searches over days [0,1], relative to the EA date from IP addresses that had not searched any of the firm's filings over the previous year, times 100. *NotifyLeadtime* is the number of trading days between the earnings notification and the earnings announcement. *PressRelease* is

an indicator variable equal to one if the firm provided at least one non-earnings or dividend-related press release in the 30 days before the earnings announcement, as recorded in RavenPack. Other variables are defined in Appendix 2. The sample in Column (1) consists of all firm-quarters in which a notification was provided. The sample in Column (2) consists of all firm-quarters for which RavenPack data is available. The sample in Column (3) consists of all firm-quarters in which a notification was provided and for which EDGAR search data is available. The sample in Column (4) consists of all firm-quarters for which RavenPack and EDGAR search data are available. Fixed effects are taken by firm and the intersection of year and quarter. Continuous variables other than returns are winsorized at the 1% and 99% levels. Standard errors are clustered by firm and EA date. *, **, *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 6: Comparisons of daily event time returns around the earnings announcement for 321,263 notifying and nonnotifying firm-quarters

Panel A: The earnings announcement premium (EAP)

	Dependent Variable: Abnormal Return										
Day relative to EA	*t-5*	*t-4*	*t-3*	*t-2*	*t-1*	*t=0*	*t+1*	*t+2*	*t+3*	*t+4*	*t+5*
Constant	0.084***	0.096***	0.123***	0.146***	0.221***	0.054***	-0.167***	-0.075***	-0.023*	0.029**	0.029**
	(5.62)	(6.77)	(8.66)	(10.40)	(14.45)	(2.61)	(-9.84)	(-5.38)	(-1.77)	(2.31)	(2.27)

Panel B: The EAP after controlling for an earnings notification

	Dependent Variable: Abnormal Return										
Day relative to EA	*t-5*	*t-4*	*t-3*	*t-2*	*t-1*	*t=0*	*t+1*	*t+2*	*t+3*	*t+4*	*t+5*
NotifyDay	0.115***	0.083**	0.131**	0.169**	0.341***						
	(3.38)	(1.96)	(2.28)	(2.54)	(3.63)						
PreEANotification						-0.097***	0.006	-0.006	-0.026	-0.025	-0.020
						(-2.86)	(0.24)	(-0.30)	(-1.35)	(-1.31)	(-1.09)
Constant	0.079***	0.093***	0.120***	0.143***	0.217***	0.094***	-0.170***	-0.072***	-0.012	0.039**	0.037**
	(5.22)	(6.51)	(8.47)	(10.18)	(14.20)	(3.91)	(-7.87)	(-4.01)	(-0.73)	(2.37)	(2.23)
Mean of NotifyDay	4.4%	3.1%	2.2%	1.8%	1.1%						

Panel C: The EAP after controlling for earnings notifications and information and risk factors

	Dependent Variable: Daily Abnormal Returns										
Day relative to EA	*t-5*	*t-4*	*t-3*	*t-2*	*t-1*	*t=0*	*t+1*	*t+2*	*t+3*	*t+4*	*t+5*
NotifyDay	0.124***	0.083**	0.118**	0.136**	0.285***						
	(3.68)	(1.99)	(2.06)	(2.07)	(3.10)						
PreEANotification						-0.186***	-0.135***	-0.038**	-0.042**	-0.019	-0.032*
						(-5.40)	(-5.16)	(-1.96)	(-2.27)	(-1.06)	(-1.85)
Liquidity	-0.001	-0.004	-0.001	-0.012**	-0.017***	0.013*	-0.013*	-0.003	-0.008	0.004	-0.016***
	(-0.25)	(-0.87)	(-0.26)	(-2.14)	(-2.93)	(1.67)	(-1.68)	(-0.39)	(-1.55)	(0.53)	(-2.64)
Beta	0.074***	0.046***	0.034**	0.050***	0.043***	0.107***	0.077***	0.027**	0.040***	0.028**	0.041***
	(4.82)	(3.16)	(2.23)	(3.32)	(3.17)	(4.46)	(3.21)	(1.97)	(2.95)	(2.00)	(2.82)
LnReturnVolatility	-0.046***	-0.043***	-0.040***	-0.047***	0.165***	0.199***	0.102***	0.028***	0.001	0.009*	0.006
	(-7.63)	(-7.35)	(-6.51)	(-6.81)	(16.09)	(9.32)	(7.43)	(4.37)	(0.18)	(1.67)	(1.17)
LnMveq	-0.016**	-0.012*	-0.024***	-0.018**	-0.033***	-0.103***	-0.032***	-0.018**	-0.014**	-0.015**	-0.010*
	(-2.36)	(-1.77)	(-3.64)	(-2.45)	(-4.40)	(-9.67)	(-3.68)	(-2.55)	(-2.21)	(-2.24)	(-1.68)
MarketToBook	-0.005**	-0.003	-0.003	-0.004	-0.003	-0.027***	-0.014***	-0.009***	-0.007***	-0.003	-0.009***
	(-2.01)	(-1.12)	(-1.13)	(-1.38)	(-1.00)	(-7.54)	(-4.82)	(-3.77)	(-3.08)	(-1.48)	(-4.14)
PriorYearReturn	-0.034	-0.044*	-0.042*	-0.013	-0.005	-0.011	-0.011	-0.088***	-0.061***	0.001	-0.059***
	(-1.30)	(-1.71)	(-1.80)	(-0.58)	(-0.18)	(-0.35)	(-0.40)	(-4.14)	(-3.14)	(0.07)	(-3.03)
AnnouncementLag	-0.002**	-0.003***	-0.003***	-0.002**	-0.002**	-0.007***	-0.005***	-0.002***	-0.002***	-0.000	-0.001
	(-2.56)	(-2.91)	(-3.93)	(-2.42)	(-2.50)	(-5.61)	(-4.46)	(-2.76)	(-2.65)	(-0.03)	(-0.72)
YearReturnVolatility	5.660***	7.616***	6.924***	9.555***	12.588***	-4.496***	-11.844***	-3.601***	-0.778	0.946	1.359
	(5.31)	(6.98)	(6.39)	(9.10)	(11.39)	(-3.30)	(-10.01)	(-3.93)	(-0.86)	(1.13)	(1.52)
EarningSurprise	0.180	0.434**	0.486***	0.140	0.878***	6.091***	3.235***	0.477***	0.005	-0.281*	0.283*
	(1.05)	(2.53)	(3.06)	(0.78)	(5.55)	(23.13)	(14.65)	(2.74)	(0.03)	(-1.67)	(1.76)
Constant	-0.105	-0.137*	0.008	-0.142*	0.536***	1.726***	0.958***	0.349***	0.198***	0.107	0.114
	(-1.35)	(-1.66)	(0.12)	(-1.65)	(6.80)	(15.02)	(10.40)	(4.62)	(2.64)	(1.49)	(1.62)
Mean of NotifyDay	4.4%	3.1%	2.2%	1.8%	1.1%						

This table models daily abnormal returns in event-time as a function of an earnings notification (*NotifyDay* and *PreEANotification*) over the 11-day window centered on the earnings announcement (EA) date (t-5 to t+5). The dependent variable is the daily market adjusted return. *NotifyDay* is an indicator variable set to one on notification days (and only populated on days before the EA). *PreEANotification* is an indicator variable set to one for firm-quarters in which there is an earnings notification (and only populated for days on or after the EA). The sample in each column consists of 321,263 firm-quarters for which daily observations are available in the 11-day window centered on the EA date. In Panel A, daily event-time returns are regressed on a constant term. Panel B includes *NotifyDay* and *PreEANotification*. Panel C includes *NotifyDay* and *PreEANotification* as well as variables representing the information-based explanations of the EAP, which are defined in Appendix 2. The footer of Panels B and C reports the mean of *NotifyDay*, which indicates the frequency of notifications per day. Standard errors are clustered by firm and EA date. *, **, *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 7: Associations between EDGAR searches by new searchers and returns around EAs across 149,708 firm-quarters

Panel A: Univariate portfolio analysis

	Quintiles of PropNewSearches [-15,-6]					
	Q1	*Q2*	*Q3*	*Q4*	*Q5*	*Q5-Q1*
CAR [-5,5]	0.080	0.180	0.136	0.325***	0.442***	0.362**
	(0.61)	(1.42)	(1.21)	(2.96)	(3.93)	(2.44)
CAR [-5,-1]	0.435***	0.424***	0.427***	0.400***	0.442***	0.007
	(5.22)	(5.17)	(5.93)	(5.84)	(6.90)	(0.09)
CAR [0,5]	-0.317***	-0.183*	-0.231***	-0.039	0.062	0.379***
	(-3.34)	(-1.90)	(-2.59)	(-0.45)	(0.69)	(3.36)
Num. of Observations	29,942	29,942	29,941	29,942	29,941	

This panel displays cumulative abnormal returns over two event-time windows around the earnings announcement (EA) by quintile of *PropNewSearches[-15,-6]*. This analysis uses the 149,708 observations included in Panel B. *PropNewSearches [-15,-6]* is the proportion of total EDGAR searches over days [-15,-6], relative to the EA date from IP addresses that had not searched any of the firm's filings over the previous year, times 100. *CAR [X,Y]* is the value-weighted market-adjusted return over the trading days [X,Y], relative to the EA date. The column labeled *Q5-Q1* reports the results of testing the difference between the largest and smallest quintiles. *, **, *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are calculated based on double-clustered standard errors (by firm and EA date) and are presented beneath the coefficient estimates in parentheses.

Panel B: Regression analysis

	Dependent Variables: Abnormal Returns		
	CAR [-5,5]	*CAR [-5,-1]*	*CAR [0,5]*
	(1)	*(2)*	*(3)*
PropNewSearches [-15,-6]	0.794***	0.215	0.603**
	(2.65)	(1.25)	(2.51)
Liquidity	-0.012	-0.031***	0.028***
	(-1.04)	(-4.15)	(3.17)
Beta	0.462***	0.240***	0.225**
	(3.31)	(2.76)	(2.01)
LnReturnVolatility	0.328***	0.014	0.322***
	(5.67)	(0.53)	(7.04)
LnMveq	-0.126***	-0.016	-0.109***
	(-3.40)	(-0.73)	(-3.73)
MarketToBook	-0.079***	-0.025***	-0.053***
	(-6.49)	(-3.14)	(-5.47)
PriorYearReturn	-0.831***	-0.365***	-0.453***
	(-5.86)	(-4.02)	(-4.46)
AnnouncementLag	-0.013**	0.000	-0.014***
	(-2.46)	(0.07)	(-3.72)
YearReturnVolatility	24.154***	40.630***	-14.587***
	(2.95)	(7.80)	(-3.02)
EarningSurprise	12.627***	1.374***	10.885***
	(14.20)	(2.91)	(15.23)
Constant	0.233***	0.426***	-0.142**
	(2.72)	(8.02)	(-2.24)
N	149,708	149,708	149,708
Adj. R^2	0.013	0.010	0.012
Clustered SE: Firm, EA Date	Yes	Yes	Yes

This panel models returns around the earnings announcement (EA) as a function of attention by new investors and the information-based explanations of positive returns around earnings announcements. The dependent variables are cumulative abnormal returns around three event-time windows. *PropNewSearches [-15,-6]* is the proportion of total EDGAR searches over the 10 days [-15,-6], relative to the EA date from IP addresses that had not searched any of the firm's filings over the previous year, times 100. Other variables are defined in Appendix 2. Fixed effects are omitted, and variables are mean-centered. Standard errors are clustered by firm and EA date. *, **, *** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.

Table 8: Changes in pre- and post-EA price drift for firms initiating earnings notifications between Q4 of 1999 and Q3 of 2002

	Positive Unexpected Earnings		*Negative Unexpected Earnings*	
	CAR [2,11]	*CAR [-11,-2]*	*CAR [2,11]*	*CAR [-11,-2]*
	(1)	*(2)*	*(3)*	*(4)*
*Post * Notifier*	-0.004	-0.007**	-0.002	-0.002
	(-1.27)	(-2.17)	(-0.48)	(-0.63)
Liquidity	-0.000	-0.002***	-0.000	-0.001***
	(-1.36)	(-9.23)	(-1.44)	(-6.21)
Beta	0.002	0.012***	0.005**	0.011***
	(0.95)	(4.26)	(2.28)	(4.52)
LnReturnVolatility	0.001*	-0.005***	0.002***	-0.003***
	(1.71)	(-10.30)	(3.57)	(-5.05)
LnMveq	-0.026***	-0.028***	-0.026***	-0.032***
	(-10.07)	(-10.05)	(-8.90)	(-10.54)
MarketToBook	-0.000	-0.000	-0.000	0.000
	(-0.23)	(-0.88)	(-0.53)	(0.39)
PriorYearReturn	-0.006***	-0.005***	-0.006***	-0.007***
	(-3.10)	(-3.02)	(-3.03)	(-3.23)
AnnouncementLag	-0.000	-0.000***	0.000	-0.000*
	(-0.55)	(-3.20)	(0.51)	(-1.85)
EarningsVolatility	-0.025	0.044	-0.093***	0.061*
	(-0.81)	(1,52)	(-2.86)	(1.70)
YearReturnVolatility	-0.159	0.093	0.040	0.001
	(-1.37)	(0.67)	(0.28)	(0.01)
EarningSurprise	0.020	0.037*	-0.051***	0.027*
	(1.07)	(1.95)	(-2.77)	(1.75)
NotifyDayNews	0.005*	0.002	-0.004	0.006
	(1.65)	(0.65)	(-0.99)	(1.30)
NumAnalysts	0.001**	0.001**	0.002***	0.001***
	(2.56)	(2.09)	(4.33)	(3.23)
NumSecFilings	-0.000	0.000	0.000	0.000
	(-0.39)	(0.06)	(1.21)	(0.06)
InstOwnership	0.013**	0.003	0.011	-0.023***
	(2.51)	(0.49)	(1.58)	(-3.15)
FirmAge	-0.006	-0.003	-36.053	33.260
	(-0.94)	(-0.30)	(-0.00)	(0.00)
Forecasts	-0.002	-0.002	-0.002	0.002
	(-1.39)	(-0.96)	(-0.77)	(0.81)
N	47,411	47,411	39,620	39,620
Adj. R^2	0.243	0.252	0.269	0.279
Fixed effects: Firm,Year X Qtr	Yes	Yes	Yes	Yes
Clustered SE: Firm, EA Date	Yes	Yes	Yes	Yes

This table analyzes the effect of earnings notifications on pre- and post-announcement price drift. This table uses the difference-in-difference sample, which consists of the eight quarters before and after the earnings-notifications-initiation window (which is defined as the fourth quarter of 1999 to the third quarter of 2002, inclusive). *Notifier* is set equal to one for firms initiating earnings notifications during the window. *Post* is set equal to one (zero) for observations after (before) the window. The dependent variables are cumulative abnormal returns in the 10-day window before (*CAR [-11,-2]*) and after the earnings announcement (EA) period (*CAR [2,11]*). Other variables are defined in Appendix 2. The sample is partitioned by positive unexpected earnings (Columns 1 and 2) and negative unexpected earnings (Columns 3 and 4). Fixed effects are taken by firm and the intersection of year and quarter. *Post* and *Notifier* are excluded because they are collinear with the fixed effects. Continuous variables other than returns are winsorized at the 1% and 99% levels. Standard errors are clustered by firm and EA date. *, **,

*** represent significance at 10%, 5%, and 1%, respectively (two-tailed). T-values are presented beneath the coefficient estimates in parentheses.