Aggregate Market Attention around Earnings Announcements

Abdullah Kumas

University of Richmond

William M. Cready *

University of Texas at Dallas

March, 2018

Keywords: Earnings Announcement, Attention Theory, Information Conveyance, Trading Volume, and Investor Attention

Corresponding Author: Cready is from the Naveen Jindal School of Management, University of Texas at Dallas, 800 West Campbell Rd. Richardson/TX 75080; Email Cready: cready@utdallas.edu; Kumas is from the Robins School of Business, University of Richmond, 28 Westhampton Way, Richmond, VA 23173; Email: akumas@richmond.edu.

Acknowledgments: We gratefully acknowledge valuable comments from Linda Bamber, Ashiq Ali, Suresh Radhakrishnan, Musa Subasi, Umit Gurun and seminar participants at the University of Texas at Dallas, University of Richmond, 2015 European Accounting Association Annual Congress, 2015 Journal of Law, Finance, and Accounting (JLFA) International Conference Hong Kong Polytechnic University, 2014 Virginia Accounting Conference, 2014 AAA Concurrent Sessions, 2014 Economics, Finance and Business Workshop at the Carnegie Mellon University and 2014 AAA SW Concurrent Sessions.

Aggregate Market Attention around Earnings Announcements

ABSTRACT: This analysis is the first to explore the overall roles of the offsetting attraction and distraction influences of earnings news in shaping the level of attention given to the equity market by market participants. In terms of overall attention we find that amount of earnings news arriving at the market is positively associated with higher levels of market attention. Interestingly, however, after splitting the overall market as announcers and non-announcers, we document that news announcements in related industries bring attention to the larger set of non-announcers while news in dissimilar industries distracts attention away from the non-announcers. We also find that the associated earnings surprise brings attention to non-announcing firms (consistent with earnings news is relevant to overall market price movements). Moreover, we document that the distractive aspects of earnings are, from an overall market perspective, less influential than the attention attracting aspects of earnings. Finally, we find that distraction effects are attenuated in the financial crisis period.

Aggregate Market Attention around Earnings Announcements

1. INTRODUCTION

In this paper, we explore the connection between earnings information load (i.e., number and magnitude of earnings announcements) faced by investors and market attention as reflected in the general levels of market trading activity. Specifically, we seek to better understand the overall market trading footprint of accounting earnings disclosures. We do so by focusing on how trading activity levels within the set of non-announcing firms varies with respect to collective measures of contemporaneous earnings announcement visibility.[1] One perspective of such visibility is that it distracts investor attention. That is, announcing firms bring attention to themselves that, in general, distracts attention from the broader market. Such a perspective is, in particular, consistent with recent evidence in Hirshleifer, Lim, and Teoh (2009) that among announcing firms trading and price responses decline with the number of contemporaneously announcing firms. That is, announcing firms distract investor attention from other announcing firms. Our analysis particularly examines whether this sort of distractive influence generalizes to the broader market, the non-announcing firms. We achieve this by investigating the relation between the number of earnings news and investor attention to the non-announcing firms.

Another perspective, however, is that firm-specific information actively conveys pertinent information to the broader market. In fact, an extensive "information transfer" literature documents how earnings announcements convey information pertinent to other firms in similar or connected industries (e.g., Bowen, Castanias, and Daley 1983; Foster 1981; Gleason, Jenkins, and Johnson 2008; Lang and Stulz 1992). More generally, recent studies by Kothari, Lewellen,

[1] Other studies employing trading volume as a measure of investor attention include DellaVigna and Pollet (2009), Hirshleifer, Lim, and Teoh (2009), and Kaniel, Ozoguz, and Starks (2012).

and Warner 2006, Cready and Gurun, 2010, and Sadka and Sadka (2012) suggest that aggregated announcer earnings information has immediate relevance for the aggregate market. In general, we take this perspective as implying an attention increasing role for earnings announcements. In particular, we expect to observe an information transfer role of related industry earnings announcements for the set of non-announcing firms while earnings disclosures from dissimilar industries may still play the distraction role in non-announcers as indicated by Hirshleifer et al. (2009).

Our analysis first evaluates the unconditional relation between earnings activity, measured as number of earnings announcements arriving at the market, and investor attention as measured by trading volume per firm across all firms. We find that amount of earnings news arriving at the market is positively associated with higher levels of overall market attention. This positive relation is considerably stronger during the financial crisis period (i.e., 2007-09) than in other periods. The latter finding particularly suggests that the market is seeking out more earnings information during high macro-economic uncertainty time periods. This finding is also consistent with the abnormally high investor attention observed during the 2008 crisis period. For example, NYSE experienced shares turnover exceeding 130 percent in 2008.[2]

Our main analysis next examines the specific impact of earnings activity on trading in the subset of non-announcing firms.[3] We focus on non-announcers in order to gain insights into how earnings announcements distract or bring attention to the broader market apart from the direct impact of announcements on announcing firm trading levels. We find that on an unconditional basis earnings distract attention from other firms in the market in that the daily trading levels of non-announcing firms decline with the number of firms announcing earnings that day. That is,

[2] See: http://www.nyxdata.com/nysedata/asp/factbook/viewer_edition.asp?mode=table&key=3084&category=3
[3] We define a firm as non-announcer on a given day if it does not announce its quarterly earnings.

the distraction effect of earnings announcements specific to other announcing firms as identified in Hirshleifer et al. (2009) holds for the broader market as well.

However, we also document three important exceptions to this general relation that are consistent with earnings announcements bringing attention to the broader set of firms in the market. First, trading in non-announcing firms increases with the number of same-industry firms announcing earnings, consistent with a positive intra-industry information transfer effect dominating the distraction effect when the information disclosed is directly relevant to a firm. This effect suggests that the distraction effect of earnings documented for the set of non-announcing firms is mainly driven by the earnings announcements from firms in unrelated industries. Second, the relation between number of announcers and non-announcer volume is positive rather than negative in the 2007-2009 financial crisis period. In this period investors were much more focused on the outlook for the broader economy, leading them to unconditionally seek out market-wide earnings information as a basis for making trading decisions. Third, at the margin non-announcer trading increases with the overall surprise (i.e., the average earnings surprise) content of the announced earnings. Collectively these exceptions to the general distractive impact of announcing firms is consistent with earnings disclosures playing an information-transfer role at both the industry and market level. That is, while announcing firms generally distract attention from non-announcer firms, in certain settings they also convey relevant information about non-announcing firms to market participants.

Interestingly, however, these information transfer effects do not seem to hold within the set of announcing firms. Specifically, announcement period trading levels of announcing firms declines with the number of announcers irrespective of whether or not these firms are in the same industry given that the negative impact of related industry announcements is significantly greater

than the unrelated industry announcements. There is also no evidence that the negative relation stemming from the firms in dissimilar industries differs in the financial crisis period while the negative relation due to the firms in related industries at least doubles in the crisis period. We also find some reliable evidence that announcer trading levels are impacted by the average surprise of their fellow announcers.

Our findings should be of interest to investors, analysts, security market regulators, and researchers. Our study contributes to the literature in several important ways. First, instead of assessing the impact of number of earnings announcements on the subset of announcing firms, which is a micro-level perspective, we identify the impact of news arrivals on all firms in the market including the vastly larger set of non-announcing firms. That is our analysis extends the literature by examining the investor attention from a macro-level perspective. Second, by decomposing the number of announcements into industry-related and -unrelated news we show that different types of news arrivals spark investor attention differently, suggesting the importance of categorizing the news into related and unrelated industries. Third, we find evidence that attention effects differ depending on overall market conditions. Specifically, in periods of extreme macro-level uncertainty (i.e., the 2007-09 financial crisis period), the distractive influences of earnings news are severely attenuated, even entirely reversed in some cases, consistent with increased investor attention to the aggregate earnings implications of firm-level earnings reports in such periods. This result is consistent with the broad literature suggesting investors employing more information during the time of high uncertainty (Glaser and Weber (2005), Hoffmann et al. (2013), and Hasan et al. (2018)).

The paper is organized as follows: Section 2 provides the literature review on trade volume and related behavioral hypotheses, and Section 3 develops the testable hypotheses.

Details concerning the data, sample selection and research design are described in Section 4. The results are discussed in Section 5, and Section 6 concludes and provides directions for future research.

2. LITERATURE REVIEW AND MOTIVATION

2.1 Attention Theory

The phenomenon of *human attention* has amassed a large body of psychological research for over a century. This research has found that the human brain's central cognitive-processing capacity has its limits (Pashler and Johnston 1998), making *attention* a scarce cognitive source (Kahneman 1973). Human subjects must therefore selectively choose where to direct their attention. For example, Cherry (1953) conducted an experiment on the separation of two simultaneously spoken messages to the left and right ears (*dichotic listening)* to explore how people recognize what one person is saying while others are speaking at the same time (*the cocktail party problem*). The experimental subjects were instructed to repeat one of the messages while concurrently listening to the other messages. The striking finding was that when subjects are subsequently asked to repeat anything heard in the other ear, they can say very little in specific except that they hear some sounds.

A recent and growing body of literature in behavioral finance and accounting brings the attention hypothesis developed in the social sciences to financial markets research. Because investors have limited resources such as attention, they must try to optimally utilize their resources to lower their search costs and process all available information toward reaching a utility-maximizing decision. Investors' attention is therefore more likely to be driven by attention-grabbing events such as earnings announcements, media coverage, IPOs, restatements,

M&A announcements, and analyst forecasts. In general, these attention-grabbing corporate events are likely to narrow down the choice set and lead investors to trade on attention-grabbing stocks (*attention hypothesis*).

The literature also shows that the attention-grabbing events attract more decision-makers such as investors, analysts, and regulators to the underlying stocks. For example, Lee 1992 concludes, "*Small investor buy decisions are associated with news events which bring the security to small investors' attention*". Graham and Kumar (2006) state that certain types of investors tend to trade securities following specific attention-grabbing events such as dividend initiations. For example, Seasholes and Wu (2007) find that the attention of individual investors, particularly first-time buyers, is attracted by the attention-grabbing event of hitting a price limit at the Shanghai Stock Exchange. DellaVigna and Pollet (2009) also document that Friday earnings announcements have a 15% lower immediate stock price response and a 70% higher delayed response in addition to an 8% lower abnormal volume response than non-Friday ones. The study attributes the documented post-earnings announcement drift to the likelihood of investors' inattention on Fridays.

Finally, by distinguishing firms between announcers and non-announcers, Chakrabarty and Moulton (2012) show that when a group of firms maintained by a specific market maker announces earnings, the liquidity for the non-announcers maintained by the same market maker is negatively affected. These effects are strongest when the announcers release their largest earnings news. The attention constraint binding on the market marker is offered as the main explanation for their finding. In a similar way, Hirshleifer et al. (2009) document that limited investor attention leads to market underreaction. In particular, they show that both price and

volume reactions to earnings news are weaker and post-earnings announcement drift is stronger when a greater number of same-day earnings announcements are made by other firms.

For this study, consistent with the literature, we utilize earnings announcements as they are one of the most influential, and extensively publicized corporate announcements. Moreover, all publicly U.S. traded firms must announce earnings and the announcement events occur frequently (four announcements per year, per firm), providing us an excellent avenue for research. Third, earnings release days are shown to generate substantial volume (Beaver 1968), and hence it is fair to assume that they draw a significant amount of investor attention.[4] Finally, earnings announcements are scheduled corporate events at known periods (Chen and Mohan 1994), and the amount of information released to the market amasses during the earnings announcements (Beaver 1968; Brown, Hillegeist, and Lo 2009) and hence, a significant market response to earnings announcements takes place (see Kothari 2001 for an excellent review).

2.2 Information Conveyance

Earnings numbers may also convey relevant information about macroeconomic conditions which impact all firms in the market or to subsets of non-announcing firms such as industry competitors or suppliers (i.e., *information transfer*). In terms of earning's role as a source of marketwide information Kothari et al. (2006) document strong negative relations between earnings changes announced in a quarter and market returns, a finding that Cready and Gurun (2010) show holds at the daily level. This negative relation, in particular, implies that aggregate earnings announcements convey information about expected future market returns (i.e., discount rate news) to market participants.

[4] However, the reverse may not necessarily be true in practice. That is, investors may pay a lot of attention to a corporate event, and yet may abstain from trading due to several reasons.

The main idea behind the information transfer hypothesis is that public disclosures provide information not only regarding the announcing firms, but also concerning the non-announcing firms.[5] Beginning with Foster (1981), earlier research documents that stock market reactions to the non-announcing peer firms show an intra-industry information transfer occurring during these announcements and more industry-wide commonalities between the announcers and non-announcers strengthen this information transfer. For example, Freeman and Tse (1992) document a positive information transfer between early and late announcing firms within the same industry. Their evidence implies that late announcers' earnings news can be predicted by utilizing the information released by early announcers.[6] Gleason, Jenkins, and Johnson (2008) focus on accounting restatements and find that the share prices of non-restating firms within the same industry significantly decrease when a firm in the industry reports a restatement. They attribute this effect to restatements leading investors to reassess the credibility of the financial information concerning non-restating firms operating within the same industry. Finally, Thomas and Zhang (2008) show that systematic mispricing occurs during the earlier earnings announcements of peer firms. In particular, they document a strong negative correlation between stock price changes of late announcers at earnings announcements by early announcers and stock price movements of late announcers during their own earnings announcements.[7]

2.3 Volume as an Attention Measure

[5] The concept of "*information transfer*" is mainly used in the accounting and finance literature to refer to either a positive or negative correlation in the stock returns of the announcers and non-announcers. However, this study uses stock market volume to examine market-wide information transfer initiated by the earnings announcements.

[6] Pyo and Lustgarten (1990) investigated the information transfer hypothesis for management earnings forecasts and found that under certain cases, forecast firms' abnormal returns are associated with non-forecast firms' abnormal returns.

[7] Information transfer effects have also been shown in other contexts such as bankruptcy filings (Lang and Stulz, 1992), dividend initiations (Firth 1996), internet hacker attacks (Ettredge and Richardson 2003), and analysts research (Ramnath 2002).

We employ daily trade volume in order to capture the attention of overall investors. Numerous papers have examined the firm-level trade volume response to earnings news since its introduction to the literature in Beaver (1968) (see Morse 1981; Ataise and Bamber 1994; Bamber 1986 and 1987; Utama and Cready 1997; DellaVigna and Pollet (2009); Hirshleifer et al. (2009); Bamber et al. 2011).[8] They mainly document that the investor attention measured as the trading volume increases with the surprise during the days surrounding earnings announcements. Given the long sample period (1990-2015) employed in this study, trading volume seems to be the most reliable and available measure of aggregate market attention.[9]

Investor attention as measured by the trading activity need not be accompanied by significant price changes at the firm level. For example, Bamber and Cheon (1995) and Kandel and Pearson (1995) document that significant trade volume occurs during corporate announcements even in the absence of price changes. Therefore, one of the advantages of employing trade volume rather than return as a proxy for market attention is that volume is likely to capture the amount of investor attention even in the absence of a significant price change at the firm level. For example, assume half of the investors on average intend to sell while the other half aims to buy a particular stock on a given day. Consequently, there is a high likelihood that the aggregate daily return could be close to zero or slightly skewed to the either side (i.e., either positive or negative return) and may not necessarily capture investor attention at the aggregate

[8] Financial press, consistent with this academic research, also reports numbers not only regarding daily price indexes, but also for aggregate market attention measured by trading volume, presumably to portray a more complete picture of the overall stock market. For example, *Wall Street Journal* on *June 17, 2012* typifies news citing investor attention as one of the most important elements in assessing the market performance and it says *"And worries centered on Greece and Spain are reverberating around the world, sapping trading volumes. Last week saw the lowest average weekly NYSE composite volume in more than a year…. For the second quarter, average daily shares traded on the NYSE and Nasdaq Stock Market are down 1% and 10%, respectively, compared with the same period a year earlier, says Credit Suisse research".*

[9] There are other attention measures such as number of press coverage, number of analysts following, and Google search index, which potentially aim to capture attention of the media, financial analysts and individual investors, respectively. However, we employ overall trading volume to capture both institutional and individual investor attention since volume is one of the best proxies to capture overall market attention. .

level. Empirical evidence in Cready and Hurtt 2002 also suggests that trading volume reactions to financial disclosures are more readily detected than price reactions. DellaVigna and Pollet (2009) employed trading volume to show limited investor reaction, *attention*, to Friday announcements. More recently, Bamber et al. 2011 suggest that trading volume responses to financial disclosures arguably provide the most direct evidence that the disclosures have attracted investors' attention. Therefore, trading volume, among other things, can be employed as a proxy for overall investor attention.

3. HYPOTHESIS DEVELOPMENT

We examine the attention effects of earnings information in the overall market by focusing on how the level of market wide announcement activity or news impacts per firm trading levels. Based on the existing literature there is likely to be a considerable degree of heterogeneity in how individual firm trading levels respond to the amount of earnings information arriving in the market. For instance, Beaver (1968) and numerous subsequent analyses demonstrate that earnings announcements increase trading in announcing firms. However, such announcements also distract attention from other announcing firms which decreases trading levels within the set of announcing firms per Hirshleifer et al. (2009). And, within the broader set of non-announcing firms the impact of earnings on trading is quite unclear. They may either benefit from the attention or information brought to the market from higher levels of announcement activity or they may suffer from having attention drawn away from them by the announcing firms. Accordingly, in this analysis we first examine the unconditional relation between earnings activity and trading levels per firm across all firms. Next, we

specifically focus on the main sample of this study, the set of non-announcing firms, examining how the trading levels of this group of firms responds to announcing firm activity and news.

3.1 Number of Announcers and Overall Trading Volume

We first examine the unconditional relation between earnings activity, measured as number of announcing firms, and trading volume by testing the following hypothesis:

H1: Per firm trading volume on a day is unrelated with the number of earnings announcements occurring that day.

Based on the opposing views (*distraction* versus *information transfer*) presented above it is not entirely clear what we should expect to observe in our tests of this hypothesis. Conventionally, more announcements mean more information is being delivered to the market and at the firm level firm-specific information arrival, as an empirical matter, generally sparks trading activity. However, the evidence documented in Hirschleifer et al. (2009) that firm-specific arrival distracts attention from other firms puts into play the possibility that announcement activity depresses trading within the larger set of non-announcing firms. As average per firm trading, measured unconditionally, will reflect both of these possible factors as a weighted average it is conceivable that a comparatively small distraction driven reduction in trading activity among non-announcing firms completely offsets the strong trading increases known to take place among announcing firms.

Irrespective of the direction of the overall relation that emerges from our tests of *H1* it follows that its magnitude is likely to depend on how actively the market is seeking out information on the broader market. In the time period covered in our data the 2007-2009 financial crisis period represents a period when, a priori, it seems quite likely that demand for information about how firms are performing economy-wide would be quite high relative to what

it would in other time periods where macro-economic conditions were far less uncertain. For example, Hoffmann et al. (2013) argue that investors are exposed to abnormally greater amount of information during the crisis years and therefore they may change their perceptions quite often, which normally lead to higher trading volume. Investigating trading activity around *September 11* Glaser and Weber (2005) document a higher trading activity due to changes in and divergence of perceptions.[10] Hence, we would expect that the distraction component of firm-specific earnings would be severely attenuated in this time period. That is, in the crisis period investors would be more likely to employ information about individual firm performance in investment decisions with respect to other firms than they would in more normal circumstances. Hence, we examine the following hypothesis:

H2. The relation between per firm trading volume and number of earnings announcements is no different in the financial crisis period (2007-2009) than in other time periods.

We expect to reject this hypothesis in favor of the hypothesis that the relation will be higher in the financial crisis period relative to the other time periods examined in our analysis.

3.2 Number of Announcers and Non-Announcer Trading

As the main focus of this study the relation between announcement numbers and non-announcer trading is of particular interest of our study since it provides broad insights into how earnings news distracts or brings attention to the overall market that are not confounded by direct own firm earnings announcement effects. However, as the information transfer literature suggests that earnings announced by a firm conveys relevant information to firms in the same or closely related industries we first decompose the number of earnings news as news in related and unrelated industries. Then, we separately estimate firm level effects for numbers of

[10] Hasan, Kumas, and van der Laan Smith (2017) also show that during the time of high market uncertainty investors significantly demand for more information.

announcements by firms in industries related to a non-announcing firm and for numbers of announcements by firms in dissimilar industries to the non-announcing firm. Hence, we evaluate the following two hypotheses:

H3.1: Among non-announcing firms, per firm trading volume is unrelated with the number of earnings announcements from firms in dissimilar industries occurring that day.

H3.2 Among non-announcing firms, per firm trading volume is unrelated with the number of related industry earnings announcements occurring that day.

For *H3.1*, if earnings announcements largely distract attention from unrelated non-announcing firms then we should see a negative relation. Alternatively, if earnings mostly attract attention to or convey macroeconony-relevant information to the market then we could observe a positive relation. And, in the case of *H3.2* we could also see a positive relation attributable to information transfer effects between announcing firms and related non-announcing firms.

Information transfer also implies that irrespective of the individual outcomes for *H3.1* and *H3.2*, we should expect the relation number between number of related industry announcements and per volume to be greater than the relation between number of dissimilar earnings announcements and trading volume. Hence, we also test the following hypothesis:

H3.3 There is no difference in the relation between per firm non-announcer volume and number of earnings announcements in dissimilar industries and the relation between per firm non-announcer volume and number of related industry earnings announcements.

We expect to reject this hypothesis in favor of the alternative that the relation is greater for number of related industry earnings announcements.

As per *H2* the distractive properties of earnings may differ substantially in the crisis period we evaluate the above three hypotheses by both including and excluding the financial crisis period. We also reexamine the basic question of what impact the financial crisis had on the

relation between earnings information and investor trading in the broader market by testing the following two hypotheses:

H3.4: Among non-announcing firms, the relation between per firm trading volume and number of earnings announcements from firms in dissimilar industries is no different in the financial crisis period (2007-2009) than in other time periods.

H3.5 Among non-announcing firms, the relation between per firm trading volume and number of related industry earnings announcements is no different in the financial crisis period (2007-2009) than in other time periods.

3.3 Aggregate Earnings Surprise Effects

Cready and Gurun (2010) document an immediate aggregate market return response to the average surprise content of the set earnings announced by firms on a given day. This evidence suggests that earnings, in part, convey information to market participants that pertains to the market as a whole. That is, they possess a macroeconomic information transfer component. If investors act upon this macroeconomic information transfer component in making trading decisions across their entire portfolio then we should expect per volume to increase with the average surprise content of the announced earnings. Hence, we test the following two hypotheses:

H4.1 Among non-announcing firms, per firm trading volume is unrelated to the average surprise of the announced earnings.

H4.2 Among non-announcing firms, the relation between per firm trading volume and average earnings surprise is no different in the financial crisis period (2007-2009) than in other time periods.

We expect to reject *H4.1* in favor of the alternative that there is a significant relation between per firm trading volume and average surprise content of the earnings announcements.

4. DATA and RESEARCH DESIGN

The sample consists of all daily trade volume data from January 2, 1990 through December 31, 2015, subject to the following screens: (a) trade volume, shares outstanding, earnings, and earnings announcement dates are available on CRSP and COMPUSTAT; (b) stock price is between $1 and $10,000 USD, inclusive; and (c) the firm-level earning surprise measures are winsorized at the top and bottom one percentiles to control for extreme outlier effects. The daily trade volume, return, price, and shares outstanding data are from the CRSP. Quarterly earnings, shares outstanding and price data are obtained from the CRSP-COMPUSTAT merged database. Finally, due to double-counting concerns for NASDAQ stocks, our analysis includes only NYSE and AMEX stocks (see Chordia, Roll, and Subrahmanyam (2011); Dichev, Huang, and Zhou 2012).[11]

4.1 Number of Announcers Analyses

The main analysis relies on firm-level daily trading activity as its primary attention measures. We construct the daily attention measures for the (*i*) announcing firms and (*ii*) non-announcing firms and, (*iii*) all firms in two steps. For example, for the set of announcing firms (*i*), we first compute firm-level daily shares turnover as the percentage of the firm *i*'s shares traded on day *t*. That is, $\frac{VOL_{i,t}}{SHO_{i,t}}$ is percentage of firm *i*'s shares traded on day *t* where $VOL_{i,t}$ represents the number of shares traded for firm *i* on day *t*, and $SHO_{i,t}$ is the total number of shares outstanding for firm *i* on day *t* (Bamber 1986 and 1987). Then, we employ a short-window event study methodology around earnings announcements days that removes the normal level of trading activity during non-earnings announcements periods (days from *t-65* to *t-6*) (see

[11] For NASDAQ, the dealers are only supposed to count the other side of each transaction, as opposed to acting as an intermediary. This practice has therefore caused the trade volume to be double-counted during some periods. Even if the definition of volume has recently changed and includes only customer-to-customer transactions in NASDAQ (Anderson and Dyl 2005), we still dropped NASDAQ to prevent any problems with having comparable results over the long time period employed in this study.

Cready, Kumas and Subasi (2014)). Accordingly, we compute the abnormal trade volume for a firm *i* on trading day *t*, $ABVOL_{it}$, as:

$$ABVOL_{i,t} = \frac{VOL_{i,t}}{SHO_{i,t}} - (\sum_{\tau=t-6}^{t-65} \frac{VOL_{i,\tau}}{SHO_{i,\tau}})/60$$

In other words, the daily abnormal trading volume for any firm *i* on day *t* is calculated as its daily shares' turnover *(VOL/SHO*) on day *t* minus its average turnover for 60 days pre-announcement period (from *t-65* through *t-6*). In this research design, the trading activities during the 60 days pre-announcement period proxy for the normal level of investor attention. We repeat the same steps to compute daily abnormal trading volume for non-announcing firms (*ii*) and all firms (*iii*).

Morse (1981) and Bamber (1987), among others, show that trade volume reaction to earnings surprises begins before the announcement day. We therefore use the number of announcements over the trading days *t-2* through *t*. In particular, following Anilowski, Feng, and Skinner (2007) and Cready and Gurun (2010), the 3-days average number of firms announcing earnings, $N\_ANN\_ALL_t$, is computed over the trading days *t-2* through *t*.[12] Then, we estimate the following regression model for all firms;

$$ABVOL_{i,t}=\beta_0+ \beta_1 N\_ANN\_ALL_t+ CONTROLS_{i,t}+ \beta_d D_t+ \beta_s Y_s+\varepsilon_t \qquad (1)$$

where:

$ABVOL_{i,t}$ is the abnormal volume for firm *i* on day *t*,

$N\_ANN\_ALL_t$ is average number of firms announcing earnings over the trading days *t-2* through *t*,

[12] The three days average number of announcement variables also incorporates more earnings disclosures and thus improves announcements' stability in the analysis.

D_t is a vector of day of week indicator variables[13],

Y_s is a vector of year indicator variables.

Hirshleifer et al. (2009) analysis indicates that size may be an important factor in determining market attention and therefore we include firm *i*'s daily market value of equity, $MVE_{i,t}$ as a regressor. We also control for the general attention effects taking place due to the daily performance of the stock by using firm-level daily magnitude of the return, $RET_{i,t}$.

Next, we investigate differential attention effects of number of earnings announcements from firms in dissimilar industries, $N\_ANN\_NONSIC_{i,t,}$ and from firms in related industries, $N\_ANN\_SIC_{i,t}$. We do this by classifying an announcement as industry-related versus -unrelated for any firm *i* traded on day *t* based on the announcing firm's 1-digit Standard Industrial Classification (SIC). In particular, if an announcer's 1-digit SIC is same as the firm *i'*s 1-digit SIC then number of related industry announcements for firm *i* on day *t*, $N\_ANN\_SIC_{i,t}$, increases by one; otherwise, number of unrelated announcements, $N\_ANN\_NONSIC_{i,t}$, increases by one. After computing the number of related and unrelated news, the following regression model is estimated;

$$ABVOL_{i,t}=\beta_0+\beta_1 N\_ANN\_SIC_{i,t}+\beta_2 N\_ANN\_NONSIC_{i,t}+CONTROLS_{i,t}+\beta_d D_t+\beta_s Y_s+\varepsilon_t \qquad (2)$$

where:

$N\_ANN\_SIC_{i,t}$ ($N\_ANN\_NONSIC_{i,t}$) represents the daily average number of earnings announcements over the trading days *t-2* through *t* from firms in related industries (firms in dissimilar industries) for firm *i* traded on day *t*.

[13] Because earnings releases cluster by the day of the week (see Cready and Gurun 2010; Hirshleifer et al. (2009)), we include a vector of four indicator variables for each day of the trading week.

4.2 Announcer Earnings News Analyses

We explore how the earnings news provided by announcing firms impacts attention to non-announcers and contemporaneous announcers by calculating measures of the collective surprise in the announced earnings for the set of earnings announcements occurring within rolling three day windows (from *t-2* through *t*). In doing so, individual earnings surprises are uniformly measured as

$$(EPS_{i,q} - EPS_{i,q-4})/PRICE_{i\ q-4}$$

where $EPS_{i,q}$ is the firm *i*'s quarterly earnings per share before extraordinary items in quarter *q* and $PRICE_{i,q-4}$ is the firm *i*'s absolute value of the share price in quarter *q-4*. Our main aggregate surprise measure, AES_t, is based on the 3-days average value of these individual earnings change measures. Average earnings surprise is used by Cready and Gurun (2010) as a summary measure of aggregate earnings news arriving in the market on a daily basis. Hence, this average change measure directly captures the attention drawn to or away from the general market due to such news. We estimate the following regression model;

$$ABVOL_{i,t}=\beta_0+\beta_1 AES_t+\beta_2 N\_ANN\_SIC_{i,t}+\beta_3 N\_ANN\_NONSIC_{i,t}+CONTROLS_{i,t}+\beta_d D_t+\beta_s Y_s+\varepsilon_t \quad (3)$$

where:

AES_t is the average value of absolute earnings surprises over trading days t-2 through t.[14]

[14] The idea here is that it is the aggregated individual surprises taking place within the set of announcers that impacts attention. So, for instance, ten firms that are all announcing large surprises may matter much more in terms of attention effects than ten firms that are all announcing comparatively small surprises.

5. RESULTS

5.1 Summary Statistics

[Insert Table 1 here]

Panel A of Table 1 reports descriptive information on the aggregate 3-day number of announcers indices and earnings surprise indices.[15] First, during our sample period of 1990-2015, the number of days where data are available for the indices is 5,670.[16] Second, the 3-day mean (median) number of firms disclosing their quarterly earnings (*N_ANN_ALL*) is approximately 33.4 (16.7), while the maximum number of firms announcing is around 207. Moreover, the 25th percentile number of announcers is six times greater than the 75th percentile number of announcers (i.e., 50 earnings announcements), clearly demonstrating the presence of a significant variation in the number of announcements over trading days. Among the average 33.4 announcers, 5.2 of them are classified as firms operating in related industries while 28.2 on average are classified as firms operating in dissimilar industries for the set of non-announcers. Out of 33.4 (28.2) firms (in unrelated industries), on average 3.3 (2.5) of them are classified as large firms (in dissimilar industries).[17] Moreover, the mean (median) of equal-weighted absolute earnings surprises, *AES*, is 0.014 (0.01).

Panel B of Table 1 reports descriptive statistics for our main sample, the non-announcing firms, as well as the announcers at the individual firm-level. As expected, there is significantly positive abnormal attention, *ABVOL*, directed to the individual announcing firms (0.005 with $p<0.01$). However, for the set of non-announcing firms we find the opposite, a significantly

[15] Appendix A provides details for each variable used in this study.
[16] Given the sensitivity of trading to big shocks we screen out extreme high trading days. In particular, as a balanced approach, we screen out the 10 smallest trading volume and the 10 largest trading volume days in each calendar year.
[17] A firm is classified as large if it is annually ranked at the top decile of the announcing firms.

negative mean (median) for *ABVOL*, -0.0003 (-0.005), suggesting that firms on average attract significantly less investor attention on non-announcement days ($p<0.01$). Consistently, the average absolute return on the announcement days, 2.7%, nearly doubles the return on the non-announcement days, 1.6%, while raw return has a mean of 0.05%, untabulated. The announcers on average exhibit positive earnings surprise, *ES_Firm*, with a mean of 0.004. Finally, our main sample consists of firms with an average market value of $4.9 billion.

5.2 Correlations

Table 2 reports the Pearson correlations among selected variables of interest for the main sample of this study, the non-announcers.

[Insert Table 2 here]

For example, the significant negative correlation (-0.00057, p =.065) between number of announcers, *N_ANN_ALL*, and market attention measured as the abnormal volume (*ABVOL*) suggests that *distraction effects* of number of announcements dominate among the non-announcers. However, after we decompose the number of announcements, *N_ANN_ALL*, the significant positive correlation (0.0037, $p < 0.001$) between number of announcers in related industries, *N_ANN_SIC*, and market attention suggests that *information conveyance effects* dominate within related industries. But, when we investigate the correlation between *ABVOL* and number of announcers in dissimilar industries, *N_ANN_NONSIC*, we find the opposite: a strong negative correlation (-0.0016, p<0.001), suggesting unrelated news distracts attention away from non-announcers. This provides the first set of evidence of our main finding that news announcements in related industries bring attention to the larger set of non-announcers while news in dissimilar industries distracts attention away from the non-announcers.

Moreover, the correlation between aggregate surprise (*AES*) and market attention to non-announcers is negative, albeit insignificant (-0.0001 with $p = 0.96$). There is a strong positive correlation between size of announcing firm (*MVE*) and market attention to non-announcers with $p < 0.001$. Finally, our attention measure is strongly correlated with firm-level absolute return (*RET*), which suggests that higher returns trigger investor attention to the non-announcing part of the market.

5.3 Market Attention and Number of Announcements

[Insert Table 3 here]

Panel A of table 3 presents our initial multivariate analysis of the attention impacts of number of announcements on all firms, *H1,* before moving to this study's main focus sample, non-announcing firms. Employing equation (1) we show that per firm trading volume on any given day unconditionally increases with the number of earnings announcements occurring that day, *N_ANN_ALL*. Our finding suggests that more announcements mean more information is being disclosed to the market and therefore firm level firm-specific information arrival generally sparks trading activity for all firm-years (see column (1) of panel A of table 3). Second, we document that demand for information about how firms are performing economy-wide during the financial crisis period (0.0749 in column (2)) is greater than that in other periods (0.0092 in column (3)), *H2*, at the 0.01 level (column (4)). This finding suggests that investors seek for more information when macro-economic conditions are uncertain, clearly supporting our second hypothesis, *H2*. The latter result is consistent with Glaser and Weber (2005), Hoffmann et al. (2013), and Hasan et al. (2017), indicating investors search for more information when uncertainty levels are high.

Much of the conceptual literature on trading volume responses to information controls price and size of the firm (Kim and Verrecchia (1991); Hirshleifer et al. (2009)). As in Hirshleifer et al. (2009) documenting firm size as an important factor in determining market attention, we find that size (*MVE*) clearly increases investor attention. We also control for the general attention effects taking place due to the daily performance of the stock by using the daily return, $RET_{i,t}$ and document a general positive relation between investor attention and return. A final noteworthy point from table 3 is that *Mondays* are characterized by substantially lower volume levels relative to other days of the week. The *Monday* coefficient is negative and significant at the .01 level (columns (1) and (3) of panel A of table 3). Hence, consistent with Foster and Viswanathan (1993) showing that trading volume is lower on *Mondays*, we document that *Monday* seems to be an inherently low attention day for market participants

Next, we investigate how earnings announcement activity, *N_ANN_ALL*, impacts the attention paid to the set of non-announcing firms. We do so by excluding the announcing firms from our full sample (*all firms*) to only keep non-announcing segment of the market. Employing model (1) for all-years on the non-announcers panel B of table 3 suggests that earnings announcement activity has little impact on non-announcer trading as the *N_ANN_ALL* coefficient, while negative, lacks statistical significance at conventional levels. However, when the crisis period is examined separately an intuitive pattern consistent with our expectations appears. That is, in the 2007-09 crisis period the *N_ANN_ALL* coefficient is positive and significant (.05 level) indicating that the announcement activity sparked additional trading among non-announcing firms in this time period. This finding for non-announcers is in line with the evidence documented for all firms (panel A) and with prior literature. In contrast, in other years the *N_ANN_ALL* coefficient is reliably negative (significant at the .05 level), which is

consistent with earnings announcements, in general, distracting attention from non-announcing firms. Finally, consistent with our expectations regarding *H2,* the difference in these two *N_ANN_ALL* coefficients is positive and significant (.01 level), indicating that distractive aspects of earnings announcements on non-announcing firms are attenuated in high aggregate information demand periods. In other words, investors pay more attention to even non-announcers when macroeconomic uncertainty is extreme.

Moreover, we examine the differential effects of industry-related and –unrelated earnings announcements on the non-announcers. In table 4, we specifically evaluate whether attention effects on non-announcing firms differ depending on whether announcements are by firms from related or unrelated industries. We conduct this analysis using equation (2), which by decomposes *N_ANN_ALL* on firm-day specific basis into the number of earnings announcements made by firms in industries similar to the given non-announcing firm around that day ($N\_ANN\_SIC_i$) and by firms from dissimilar industries that day ($N\_ANN\_NONSIC_i$).

[Insert Table 4 here]

Table 4 reports estimates for the model that includes all the control variables. In the overall and non-crisis year analyses the effect of *N_ANN_NONSIC* is negative (significant at the .01 level) while the *N_ANN_SIC* effect is positive (significant at the .01 level). Hence, earnings announcement activity by firms in dissimilar industries distracts attention from non-announcing firms while such activity by firms in similar industries increases attention. This second relation is also consistent with our expectation that the coefficient on *N_ANN_SIC* exceeds the coefficient on *N_ANN_NONSIC* due to the information transfer aspects of similar industry earnings numbers (in an untabulated test the difference in coefficients is significant at the .01 level).

The significantly larger effects of information transfer from similar-industry news compared to the distraction effects from dissimilar-industry news among the set of non-announcing firms is a novel finding. First, it shows that investors pay more attention to even a non-announcing firm when more industry-peer news is being released. Hence, this finding is an aggregate level confirmation of the firm to firm level information transfer effects documented in the prior literature (e.g., Bowen, Castanias, and Daley 1983; Foster 1981; Gleason, Jenkins, and Johnson 2008; Lang and Stulz 1992).

Interestingly, however, column (4) of table 4 indicates that in the crisis period the coefficient on *N_ANN_NONSIC* rises significantly compared to the non-crisis period (at the .05). The *N_ANN_NONSIC* coefficient, in fact, is positive (but insignificant) in the crisis period suggesting that unrelated industry earnings news lost its distracting influence in this time period. Even though the coefficient on *N_ANN_SIC* also increases considerably (around 50%) during the crisis period, its difference from non-crisis years lacks statistical significance. Lastly, the main control variables (*RET* and *MVE*) behave in the expected directions among non-announcers, consistent with the prior literature.

5.4 Non-Announcer and Announcer Earnings Surprises

In this section we explore the role of the earnings signals generated by the announcers on the degree of attention paid to non-announcing firms based on estimations of equation (3).

[Insert Table 5 here]

Table 5 presents result for *AES*, which measures absolute per announcer aggregate surpirse. *AES* is positive and significancant in the overall sample period as well as during the non-crisis period (columns (1) and (3)). This finding supoorts our hypothesis, *H4.1*, that earnings, in part, convey information to market participants that pertains to the market as a

whole. In other words, earnings news possess a macroeconomic information transfer component and investors on average seem to act upon this macroeconomic information transfer component in making trading decisions. However, we also document that even though the relation between magnitude of the surprise and per firm trading volume of the non-announces is negative it is insignificant during the crisis years (column (2)). Finally, we find that among non-announcing firms, the relation between per firm trading volume and average earnings surprise is no different in the financial crisis period than in other time periods, *H4.2* (column (4)). After including aggregate surprise content of news announcements, we still document that higher levels of dissimilar industry earnings activity distracts by drawing down levels of trading activity while higher levels of similar industry earnings activity increases the level of trading experienced by non-announcers.

5.5 Additional Analysis

We conduct several additional analyses broadining our understanding on the relation between number of news arrivals and investor attention. First, we examine whether the large announcers from dissimilar industries contribute the distraction effects documented earlier. We compute *N_ANN_LARGE_NONSIC* representing the number of news announcements released by large firms operating in unrelated industries.[18]

[Insert Table 6 here]

In particular, table 6 presents the relation between number of earnings news announced by the large firms in dissimilar industries, *N_ANN_LARGE_NONSIC*, and attention to the non-announcers. We document that for all firm-years the magnitude of the reduction in attention due

[18] A firm is classified as large if it is annually ranked at the top decile of the announcing firms.

to announcements by the large firms in dissimilar industries, -0.122, is greater than the distraction effects from the remaining non-large announcing firms, -0.013, and the difference is significant at .10 level (column (1))[19]. Moreover, consistent with the previous findings on the non-distraction effects during crisis years we show that large announcers from dissimilar industries do not distract attention from the non-announcers during the crisis years and therefore the impact of large firms in crisis years significantly differs from the non-crisis period at the .05 level (columns (2) through (4) of table 6). Finally, the information transfer effects due to announcements from similar industry firms (*N_ANN_SIC*) remain quite strong.

In the remaining part of the additional analysis, we explore the distraction and information conveyence effects documented in tables 4 through 6 for the set announcing firms by employing regression model (3).

[Insert Table 7 here]

Panel A of table 7 presents examinaitons of *AES*, *N_ANN_NONSIC*, and *N_ANN_SIC* effects. Consistent with the main findings from Hirshleifer et al. (2009), the number of other concurrent announcements, either in related or unrelated industries, *N_ANN_SIC* and *N_ANN_NONSIC*, respectively, on average distracts attention from the announcing firms at the .01 level (column (1)). However, for the set of announcers, the magnitude of distraction due to other announcers in related industries is significantly greater, at least double, than the distraction due to other announcers in dissimilar industries (*p<0.01*). In other words, related announcements still distract attention from fellow announcers, rather than bringing attention to them as documented for non-announcers. This finding fundamentally differs from the information

[19] When we examine firms during non-crisis period, we find that distraction effects from large unrelated announcers (-0.164) is significantly (p<0.01) greater than the effects from the remaining non-large unrelated announcers (-0.0151).

transfer effects of the related announcements for non-announcers (table 4 through table 6). Interestingly, the distraction effects due to unrelated industry announcements are not different between the crisis and non-crisis periods (column (4)). Finally, the distraction effect from similar industry announcements is significantly larger during the crisis period compared to the non-crisis period (.01 level)

The average surprise of other announcing firms, *AES*, reduces the volume responses to fellow announcers over the full sample period (significant at the .05 level). While this reduction effect significantly increses during the crisis years (at the .01 level), it is not significant during the non-crisis years. Moreover, the individual firm-level absolute earnings surprise, *AES_Firm*, exhibits significantly positive relation with investor attention as well as market value of the announcer, *MVE*, (i.e., self-attention). Overall, we document that daily number of news arrivals to the market strongly distracts attention from the general body of announcing firms regerdless of the type of the other news announcements, *related* vs *unrelated*.

Moreover, we examine whether the number of large announcers from dissimilar industries, *N_ANN_LARGE_NONSIC*, also distracts investor attention from the set of announcing firms as *N_ANN_NONSIC*, and *N_ANN_SIC* reduce attention to the anouncers in panel A of table 7. We interestingly, however, find that for all-years analysis when large firms operating in unrelated industries announce earnings news they bring attention to the fellow announcers, not distract attention away from them (column (1) of panel B of table 7). This finding suggests that even industry unrelated large firms' earnings announcements convey valuable information about other announcing firms and hence increase investor attention as measured by abnormal volume (*ABVOL*) to fellow announcers. When we separately examine this large firm information transfer effect during the crisis and non-crisis periods we find that the

effect strongly holds for both periods (columns (2) and (3)) and does not significantly differ between both periods (column (4)). The distraction effects documented for *N_ANN_NONSIC* and *N_ANN_SIC* in panel A also remain intact after we control for the number of large announcers from dissimilar industries, *N_ANN_LARGE_NONSIC.*

Lastly, we incorporate contemporaneous price movement into the estimations by allowing both the *N_ANN_NONSIC* and *N_ANN_SIC* effects to vary with the contemporaneous price movement (*RET*) experienced by a firm. In particular, we interact *RET* with number of news variables (*N_ANN_SICxRET* and *N_ANN_NONSICxRET*). After controlling for price related trading, the tenure of our main results (table 3 through table 5) remains very strong (untabulated). To isolate the price-relevant trading component of the trading response to the number of large announcements, we similarly employ the interaction (*N_ANN_LARGE_NONSICxRET)* term and our findings for the large announcers remain intact.

6. CONCLUDING REMARKS

While prior research identifies specific settings where earnings news either attracts attention to specific firms (e.g., earnings announcements attract attention to announcing firms) or distracts investor attention from firms (e.g., announcements distract attention from other contemporaneous announcers), such research falls short of providing a comprehensive picture of how attraction and distraction impact attention from a market-wide perspective. Accordingly, this study explores the overall roles of the offsetting attraction and distraction effects of earnings announcements in shaping the level of attention given to the equity market by market participants. And, in fact, we find that the amount of earnings news arriving daily at the market is positively associated with higher levels of market-wide attention. Hence, the distractive aspects

of earnings documented are, from an overall market perspective, less influential than the attention attracting aspects of earnings.

This overall relation, however, is comprised of a number of distinct attraction and distraction components as shown in Figure 1. Specifically, while the amount of earnings news arriving at the market distracts attention from other announcing firms as documented in Hirshleifer et al. (2009), it also distracts attention from non-announcing firms in unrelated industries. Hence, distraction is a broadly present attribute of earnings information. And, while the amount of earnings information arriving at the market distracts attention from fellow-announcers it also brings attention to similar industry non-announcers. We also find that the overall earnings surprise conveyed by the disclosed earnings attracts attention to non-announcing firms, which is consistent with the notion that earnings news is relevant to overall market price movements (e.g., Kothari et al., 2006; Cready and Gurun, 2010). However, overall surprise distracts attention from announcing firms. And, this distractive influence is incremental to that explained by the number of firms announcing earnings.

In addition to identifying how earnings distract and attract attention across the market we also find evidence of intertemporal variation in these attention effects. Specifically, in the financial crisis period earnings announcements tended to attract more attention (or, be less distracting) to non-announcers. This shift in attention effect is consistent with market participants overcoming distraction when the incentives to do so are high. In this case higher levels of market uncertainty seems to have triggered greater investor interest in using earnings information as a basis for trading decisions across the broader market. This evidence is the first, to our knowledge, of how attention effects intersect with broader market conditions.

A potential future area of research identified by our analysis is to investigate what type of investors' attention is distracted or attracted during the earnings announcements. For example, differentiating the distraction effects for the institutional and individual investors will answer a call by Bamber et al. (2011) regarding a lack of research on the trading behavior of specific investor types around announcements of important corporate events. It will also provide answer to a basic, but an important question: whose attention is being distracted more on high news announcement days?

REFERENCES

Anderson, A., & Dyl, E.A. (2005). Market structure and trading volume, *Journal of Financial Research* 28: 115-131

Anilowski, C, Feng, M., & Skinner, D.J. (2007). Does Earnings Guidance Affect Market Returns? The Nature and Information Content of Aggregate Earnings Guidance. *Journal of Accounting and Economics 44*(1-2): 36-63.

Atiase, R.K., & Bamber, L.S. (1994). Trading volume reactions to annual accounting earnings announcements. *Journal of Accounting and Economics* 17: 309-331.

Bamber, L. (1986). The information content of annual earnings releases: A trading volume approach. *Journal of Accounting Research* 24: 40-56.

Bamber, L. (1987). Unexpected earnings, firm size, and trading volume around quarterly earnings announcements. *The Accounting Review* 62: 510-32.

Bamber, L., & Cheon, Y. (1998). Discretionary management earnings forecast disclosures: Antecedents and outcomes associated with forecast venue and forecast specificity choices. *Journal of Accounting Research* 36 (2): 167-190.

Bamber, L.S., O.E. Barron, and D.E. Stevens. 2011. Trading volume around earnings announcements and other financial reports: Theory, research design, empirical evidence, and directions for future research. *Contemporary Accounting Research* 28 (2): 431-471.

Beaver, W. (1968). The information content of annual earnings announcements. *Journal of Accounting Research* 6: 67-92.

Bowen, R., Castanias, R. & Daley, L. 1(983). Intra-industry effects of the accident at Three Mile Island. *Journal of Financial and Quantitative Analysis* 18: 87-112

Brown, S., Hillegeist, S. & Lo. K. (2009). The effect of earnings surprises on information asymmetry. *Journal of Accounting and Economics* 47: 208–225

Chakrabarty, B, & Moulton. P. (2012). Earnings Announcements and Attention Constraints: The Role of Market Design. *Journal of Accounting and Economics* 53(3): 612-634.

Chen, C., & Mohan. N. (1994). Timing the Disclosure of Information: Management's View of Earnings Announcements. *Financial Management* 23: 63–69.

Cherry, E. C. (1953). Some experiments on the recognition of speech, with one and two ears. *Journal of the Acoustical Society of America* 25: 975–979.

Chordia, T., Roll, R. & Subrahmanyam. A. (2011). Recent trends in trading activity and market quality. *Journal of Financial Economics* 101: 243-263.

Cready W. & Gurun. U. (2010). Aggregate Market Reaction to Earnings Announcements. *Journal of Accounting Research 4:* 289–334

Cready, W. M., & Hurtt, D. N. (2002). Assessing investor response to information events using return and volume metrics. *The Accounting Review*, *77*, 891–909.

Cready, W.M., Kumas, A., and Subasi, M. (2014). Are trade size based inferences about traders reliable? Evidence from institutional earnings related trading. *Journal of Accounting Research* 52(4), 877–909.

Dellavigna, S. & Pollet. J. M. (2009). Investor inattention and Friday earnings announcements. *Journal of Finance* 64: 709–749

Dichev, I, Huang, D, K. & Zhou. D. (2012).The Dark Side of Trading. Working Paper. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1754215

Ettredge, M., & Richardson. V. (2003). Information transfer among internet firms: The case of hacker attacks. *Journal of Information Systems* 17(2): 71-82.

Firth, M. (1996). Dividend changes, abnormal returns, and intra-industry firm valuations.*Journal of Financial and Quantitative Analysis* 31: 189–211.

Foster, G. (1981). Intra-industry information transfers associated with earnings releases. *Journal of Accounting and Economics* 3: 201–232.

Foster, F. D., & Viswanathan. S. (1993). Variations in trading volume, return volatility, and trading cost: Evidence from recent price formation models. *Journal of Finance* 48: 187–211.

Freeman, R., & Tse. S. (1992). An earnings prediction approach to examining intercompany information transfers. *Journal of Accounting and Economics* 15: 509–523

Glaser, M, & Weber, M. (2007). Why inexperienced investors do not learn: they do not know their past portfolio performance *Finance Research Letters*, 4 (4) pp. 203–216

Gleason, C. A., Jenkins, N.T. & Johnson. W.B. (2008). The Contagion effects of accounting restatements. *The Accounting Review* 83: 83-110.

Graham, J. & Kumar. A. (2006). Do Dividend Clienteles Exist? Evidence on Dividend Preferences of Retail Investors. *Journal of Finance* 61: 1305–1336.

Hasan, R., Kumas, A. & van der Laan Smith, J. (2018). Market Ambiguity and Individual Investor Information Demand. Forthcoming at *Journal of Contemporary Accounting and Economics*

Hirshleifer, D, Lim, S. & Teoh. S. H. (2009). Driven to distraction: extraneous events and underreaction to earnings news. *Journal of Finance* 64: 2289-2325.

Hoffmann, A., Post, T. & Pennings J. (2013). Individual investor perceptions and behavior during the financial crisis *Journal. of Banking Finance*, 37: pp. 60–74

Kahneman, D. (1973). Attention and Effort. Prentice-Hall, Englewood Cliffs, NJ.

Kandel, E. & Pearson. N.D. (1995). Differential Interpretation of Public Signals and Trade in Speculative Markets. *Journal of Political Economy* 103(4): 831-72.

Kaniel R., Ozoguz A., Starks L. T.. The high volume return premium: Cross-country evidence, Journal of Financial Economics , 2012, vol. 103: 255-79.

Kim, O., & Verrecchia. R. (1991). Market reactions to anticipated announcements. *Journal of Financial Economics* 30: 273-309.

Kim, O.,& Verrecchia, R.E. (1997). Pre-announcement and event-period private information. *Journal of Accounting and Economics* 24, 395–419.

Kothari, S. P. (2001). Capital Markets Research in Accounting. *Journal of Accounting and Economics* 31: 105–231.

Kothari, S.P., Lewellen, J. & Warner, J. (2006). Stock returns, aggregate earnings surprises, and behavioral finance. *Journal of Financial Economics* 79: 537–568.

Lang, L. H. P. & Stulz. R. M. (1992). Contagion and competitive intra-industry effects of bankruptcy announcements: An empirical analysis. *Journal of Financial Economics* 32: 45-60.

Lee, C. M. C. (1992). Earnings inflows and small traders. *Journal of Accounting and Economics* 15: 265–302.

Morse, D. (1981). Price and trading volume reaction surrounding earnings announcements: A closer examination. *Journal of Accounting Research* 19: 374-383.

Pashler, H. & Johnston, J. (1998). "Attentional limitations in dual-task performance". In: Pashler, H. (Ed.), Attention. Psychology Press, Hove, UK.

Pyo, Y., & Lustgarten, S. (1990). "Differential intra-industry information transfer associated with management earnings forecasts." *Journal of Accounting and Economics* 13: 365–379

Ramnath, S. (2002). Investor and analyst reactions to earnings announcements of related firms: An empirical analysis. *Journal of Accounting Research* 40: 1351–1376.

Sadka, G. & Sadka, R. (2009). Predictability and the earnings-return relation. *Journal of Financial Economics* 94: 87-106.

Seasholes, M. & Wu. G. (2007). Predictable behavior, profits, and attention. *Journal of Empirical Finance* 14: 590–610.

Thomas, J. & Zhang. F. (2008). Overreaction to Intra-Industry Information Transfer. *Journal of Accounting Research* 46: 909-940.

Utama, S. & Cready. W. (1997). Institutional ownership, differential predisclosure precision and trading volume at announcement dates. *Journal of Accounting and Economics* 24: 1

TABLE 1
Descriptive Statistics

Panel A: Daily Aggregate Level Descriptive Statistics

Variable	Mean	Median	Std	P25	P75	Min	Max	N
N_ANN_ALL	33.4	16.7	34.2	8.3	50	0.7	206.7	5,670
N_ANN_SIC	5.2	2	7.3	1	6	0	62	5,670
N_ANN_NONSIC	28.2	29.5	7	14	42	0	206.7	5,670
N_ANN_LARGE	3.3	1.3	4.2	0.7	4	0	26.7	5,670
N_ANN_LARGE_NONSIC	2.5	1	3.4	0.3	3	0	26.7	5,670
AES	0.014	0.010	0.016	0.007	0.016	0.001	0.419	5,670

Panel A reports descriptive statistics on the daily aggregate level variables for the announcing firms. *N_ANN_ALL* is the daily average number of firms announcing earnings over the trading days t-2 through t, *N_ANN_SIC* is the daily average number of 1-digit SIC firms announcing earnings over the trading days t-2 through t, *N_ANN_NONSIC* is the daily average number of non-1-digit SIC firms announcing earnings over the trading days t-2 through t, *N_ANN_LARGE* is the daily average number of large firms announcing earnings over the trading days t-2 through t, *AES* is the equal-weighted average of absolute value of earnings surprises *(ES_Firm*) over trading days t-2 through t.

Panel B: Daily Firm Level Descriptive Statistics

Variable	Mean	Median	Std	P25	P75	Min	Max	N
ABVOL (%)-announcers	0.005	0.017	-0.001	0.001	0.004	-0.198	0.865	168,803
ABVOL (%)-non-announcers	-0.0003	-0.0005	0.0106	-0.0018	0.0005	-0.9710	0.9938	10473834
RET-announcers	0.027	0.037	0.006	0.016	0.035	0	1.190	168,803
RET-non-announcers	0.016	0.011	0.021	0.004	0.021	0	4	10473834
ES_Firm	0.004	0.072	-0.005	0.001	0.007	-0.553	2.959	168,803
AES_Firm	0.022	0.069	0.002	0.006	0.017	0	2.959	168,803
MVE ($Billions)	4.964	0.860	17.540	0.220	2.990	0.000	593.909	168,803

Panel B reports daily firm level descriptive statistics for the announcing and non-announcing firms. *ABVOL(%)* is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. *VOL/SHO*) on day t minus the average turnover of 60 days during the pre-period (from day t-65 to t-6), *MVE* is daily market value of equity, and *RET* is daily absolute stock return, *ES_Firm* is the earnings surprise computed as the seasonally differenced quarterly earnings per share before extraordinary items scaled by the price from four quarters before the earnings announcement, *AES_Firm* is absolute value of *ES_Firm*, *MVE* is daily market value of equity, and *RET* is daily absolute stock return.

TABLE 2 :

Pearson Correlations (N=10,473,834)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
[1]	*ABVOL (%)*	*1*	*0.00355*	*-0.00057*	*0.00377*	*-0.00159*	*-0.00001*	*0.18648*
			<.0001	*0.065*	*<.0001*	*<.0001*	*0.963*	*<.0001*
[2]	*MVE*			*0.00574*	*0.00633*	*0.00509*	*0.00498*	*-0.04756*
				<.0001	*<.0001*	*<.0001*	*<.0001*	*<.0001*
[3]	*N_ANN_ALL*				*0.70595*	*0.98461*	*-0.07932*	*-0.0028*
					<.0001	*<.0001*	*<.0001*	*<.0001*
[4]	*N_ANN_SIC*					*0.5713*	*-0.07953*	*-0.01366*
						<.0001	*<.0001*	*<.0001*
[5]	*N_ANN_NONSIC*						*-0.0723*	*0.00012*
							<.0001	*0.6974*
[6]	*AES*							*0.01176*
								<.0001
[7]	*RET*							*1*

Table 2 reports Pearson correlations between the indicated variables for the non-announcing firms between January 2, 1990 and December 31, 2015. *ABVOL* is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. *VOL/SHO*) on day t minus the average turnover of 60 days pre-period (from day t-65 to t-6), *MVE* is daily market value of equity, and *RET* is daily absolute stock return, *N_ANN_ALL* is the daily average number of firms announcing earnings over the trading days t-2 through t, *N_ANN_SIC* is the daily average number of 1-digit SIC firms announcing earnings over the trading days t-2 through t, *N_ANN_NONSIC* is the daily average number of non-1-digit SIC firms announcing earnings over the trading days t-2 through t, *AES* is the equal-weighted average of absolute value of earnings surprises (*ES_Firm*) over trading days t-2 through t.

TABLE 3:
Market Attention to Number of Earnings Announcements (*All Firms*)

Panel A:	*All Years* 1990-2015	*(a)* (2007-09)	*(b)* Exclude (2007-09)	*(a)-(b)* t-test
N_ANN_ALL	0.0166***	0.0749***	0.00928***	0.0656***
	(4.68)	(3.90)	(2.98)	(3.37)
RET	1057.3***	1018.7***	1069.4***	-50.72
	(66.12)	(21.68)	(71.79)	(-1.03)
MVE	1.431***	2.063***	1.354***	0.709***
	(56.47)	(18.21)	(55.97)	(6.12)
MONDAY	-2.751***	-5.377**	-2.396***	-2.981
	(-6.32)	(-2.30)	(-6.35)	(-1.26)
TUESDAY	1.865***	1.465	1.928***	-0.463
	(4.46)	(0.64)	(5.25)	(-0.20)
WEDNESDAY	2.089***	2.371	2.076***	0.296
	(4.94)	(1.01)	(5.65)	(0.12)
THURSDAY	1.792***	1.799	1.803***	-0.00389
	(4.35)	(0.79)	(5.04)	(-0.00)
Year Dummies		*INCLUDED*		
No. of Obs.	10,655,636	1,205,836	9,444,800	
Adj-R^2	0.044	0.056	0.042	

Panel A of table 3 presents coefficients estimates for all firms from the regression model (1):

$$ABVOL_{i,t}=\beta 0+ \beta 1 N\_ANN\_ALL_t+ CONTROLS_{i,t}+ \beta d D_t+ \beta s Y_s+\varepsilon t \quad (1)$$

where ABVOL is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. VOL/SHO) on day t minus the average turnover of 60 days pre-period (from day t-65 to t-6), N_ANN_ALL is the daily average number of firms announcing earnings over the trading days t-2 through t, MVE is daily market value of equity, RET is daily absolute stock return. Numbers in parentheses are t-statistics calculated using standard errors per White (1980) clustered around trading days. * * *, * *, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

TABLE 3
Market Attention to Number of Earnings Announcements (*Non-Announcing Firms Only*)

Panel B:	All Years 1990-2015	(a) (2007-09)	(b) Exclude (2007-09)	(a)-(b) t-test
N_ANN_ALL	-0.000535	0.0463**	-0.00641**	0.0527***
	(-0.15)	(2.49)	(-2.09)	(2.79)
RET	981.8***	937.0***	995.8***	-58.79
	(64.06)	(21.46)	(68.47)	(-1.28)
MVE	1.317***	1.863***	1.251***	0.612***
	(53.96)	(16.67)	(54.00)	(5.36)
MONDAY	-2.746***	-5.041**	-2.431***	-2.610
	(-6.38)	(-2.19)	(-6.49)	(-1.12)
TUESDAY	1.371***	0.706	1.470***	-0.764
	(3.29)	(0.31)	(4.00)	(-0.33)
WEDNESDAY	1.708***	1.818	1.716***	0.102
	(4.07)	(0.79)	(4.68)	(0.04)
THURSDAY	1.281***	0.997	1.332***	-0.335
	(3.12)	(0.44)	(3.73)	(-0.15)
Year Dummies		*INCLUDED*		
No. of Obs.	10,473,834	1,184,717	9,284,267	
Adj-R^2	0.037	0.048	0.036	

Panel B of table 3 presents coefficients estimates for the non-announcers from the regression model (1):

$$ABVOL_{i,t}=\beta_0+\beta_1 N\_ANN\_ALL_t+ CONTROLS_{i,t}+\beta_d D_t+\beta_s Y_s+\varepsilon_t \quad (1)$$

where ABVOL is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. VOL/SHO) on day t minus the average turnover of 60 days pre-period (from day t-65 to t-6), N_ANN_ALL is the daily average number of firms announcing earnings over the trading days t-2 through t, MVE is daily market value of equity, RET is daily absolute stock return. Numbers in parentheses are t-statistics calculated using standard errors per White (1980) clustered around trading days. * * *, * *, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

TABLE 4:

Market Attention to Number of Earnings Announcements (*Non-Announcing Firms Only*)

	All Years 1990-2015	*(a)* (2007-09)	*(b)* Exclude (2007-09)	*(a)-(b)* t-test
N_ANN_NONSIC	-0.0236***	0.0220	-0.0297***	0.0517**
	(-5.47)	(0.97)	(-7.70)	(2.24)
N_ANN_SIC	0.127***	0.185***	0.121***	0.0643
	(10.69)	(2.83)	(11.17)	(0.97)
RET	982.5***	936.9***	996.7***	-59.74
	(64.03)	(21.44)	(68.48)	(-1.30)
MVE	1.321***	1.865***	1.255***	0.609***
	(54.09)	(16.68)	(54.17)	(5.34)
Day of Week Dummies		*INCLUDED*		
Year Dummies		*INCLUDED*		
No. of Obs.	10,473,834	1,184,717	9,284,267	
Adj-R^2	0.0007	0.0006	0.0017	

Table 4 presents coefficients estimates for the mon-announcers from the regression model (2):

$$ABVOL_{i,t}=\beta 0+ \beta 1 N\_ANN\_SIC_{i,t}+ \beta 2 N\_ANN\_NONSIC_{i,t} +CONTROLS_{i,t}+ \beta d D_t+ \beta s Y_s+\varepsilon t \quad (2)$$

where ABVOL is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. VOL/SHO) on day t minus the average turnover of 60 days pre-period (from day t-65 to t-6), N_ANN_SIC is the daily average number of 1-digit SIC firms announcing earnings over the trading days t-2 through t, N_ANN_NONSIC is the daily average number of non-1-digit SIC firms announcing earnings over the trading days t-2 through t, MVE is daily market value of equity, RET is daily absolute stock return. Numbers in parentheses are t-statistics calculated using standard errors per White (1980) clustered around trading days. * * *, * *, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

TABLE 5:
Market Attention to Content of Earnings Surprise (*Non-Announcing Firms Only*)

	All Years 1990-2015	*(a)* (2007-09)	*(b)* Exclude (2007-09)	*(a)-(b)* t-test
AES	39.00***	-3.288	42.48***	-45.76
	(4.77)	(-0.07)	(5.20)	(-1.02)
N_ANN_NONSIC	-0.0230***	0.0221	-0.0288***	0.0509**
	(-5.34)	(0.97)	(-7.49)	(2.21)
N_ANN_SIC	0.130***	0.185***	0.125***	0.0599
	(11.02)	(2.81)	(11.58)	(0.90)
RET	982.6***	937.0***	996.9***	-59.95
	(64.02)	(21.45)	(68.49)	(-1.30)
MVE	1.320***	1.865***	1.255***	0.610***
	(54.05)	(16.66)	(54.14)	(5.34)
Day of Week Dummies		*INCLUDED*		
Year Dummies		*INCLUDED*		
No. of Obs.	10,473,834	1,184,717	9,284,267	
Adj-R^2	0.038	0.0007	0.0016	

Table 5 presents coefficients estimates for the non-announcers from the regression model (3):

$$ABVOL_{i,t}=\beta 0+ \beta 1AES_t+ \beta 2N\_ANN\_SIC_{i,t}+ \beta 3N\_ANN\_NONSIC_{i,t} +CONTROLS_{i,t}+ \beta dD_t+ \beta sY_s+\varepsilon t \quad (3)$$

where ABVOL is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. VOL/SHO) on day t minus the average turnover of 60 days pre-period (from day t-65 to t-6), AES is the equal-weighted average of absolute value of earnings surprises (ES_Firm) over trading days t-2 through t. Numbers in parentheses are t-statistics calculated using standard errors per White (1980) clustered around trading days. * * *, * *, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

TABLE 6:
Market Attention to Size of the Set of Announcing Firms (*Non-Announcing Firms Only*)

	All Years (1990-2015	*(a)* (2007-09)	*(b)* Exclude (2007-09)	*(a)-(b)* t-test
N_ANN_LARGE_NONSIC	-0.122**	0.346	-0.164***	0.510**
	(-2.31)	(1.36)	(-3.31)	(1.97)
N_ANN_NONSIC	-0.0130*	-0.00265	-0.0151**	0.0125
	(-1.85)	(-0.09)	(-2.35)	(0.40)
N_ANN_SIC	0.132***	0.170***	0.128***	0.0421
	(11.15)	(2.63)	(11.72)	(0.64)
RET	982.6***	936.8***	996.9***	-60.10
	(64.05)	(21.44)	(68.50)	(-1.30)
MVE	1.317***	1.873***	1.251***	0.622***
	(53.97)	(16.69)	(54.18)	(5.43)
Day of Week Dummies		*INCLUDED*		
Year Dummies		*INCLUDED*		
No. of Obs.	10,473,834	1,184,717	9,284,267	
Adj-R^2	0.038	0.05	0.037	

Table 6 presents coefficients estimates from the following regression model:

$$ABVOL_{i,t}=\beta 0+\beta 1 N\_ANN\_LARGE_t+\beta 2 N\_ANN\_NONSIC_t+\beta 3 N\_ANN\_SIC_t++CONTROLS_{i,t}+ \beta d D_t+ \beta s Y_s+\varepsilon t$$

where ABVOL(%) is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. VOL/SHO) on day t minus the average turnover of 60 days pre-period (from day t-65 to t-6), N_ANN_LARGE is the daily average number of large firms announcing earnings over the trading days t-2 through t, MVE is daily market value of equity, N_ANN_SIC is the daily average number of 1-digit SIC firms announcing earnings over the trading days t-2 through t, N_ANN_NONSIC is the daily average number of non-1-digit SIC firms announcing earnings over the trading days t-2 through t. Appendix defines the rest of the variables in the regression model. Numbers in parentheses are t-statistics calculated using standard errors per White (1980) clustered around trading days. * * *, * *, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

TABLE 7:

Market Attention to Content of Earnings Surprise (*Announcing Firms Only*)

Panel A:	All Years 1990-2015	(a) (2007-09)	(b) Exclude (2007-09)	(a)-(b) t-test
N_ANN_NONSIC	-0.180***	-0.173***	-0.173***	0.0000192
	(-11.89)	(-2.74)	(-11.49)	(0.00)
N_ANN_SIC	-0.462***	-1.168***	-0.377***	-0.791***
	(-11.20)	(-6.86)	(-9.27)	(-4.52)
AES	-112.1**	-866.3***	-21.97	-844.4***
	(-2.13)	(-3.37)	(-0.43)	(-3.22)
AES_Firm	23.15**	65.88	18.83**	47.05
	(2.45)	(1.06)	(2.01)	(0.75)
RET	2173.3***	2171.3***	2175.7***	-4.395
	(42.01)	(17.85)	(38.62)	(-0.03)
MVE	5.022***	8.112***	4.570***	3.542***
	(35.95)	(16.76)	(31.97)	(7.02)
Day of Week Dummies		*INCLUDED*		
Year Dummies		*INCLUDED*		
No. of Obs.	168803	19,900	148,903	
Adj-R^2	0.252	0.26	0.25	

Panel A of table 7 presents coefficients estimates from the following regression model:

$$ABVOL_{i,t}=\beta_0+\beta_1 AES_t+\beta_2 AES\_Firm_{i,t}+\beta_3 N\_ANN\_NONSIC_t+\beta_4 N\_ANN\_SIC_t+CONTROLS_{i,t}+\beta_d D_t+\beta_s Y_s+\varepsilon_t$$

where ABVOL(%) is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. VOL/SHO) on day t minus the average turnover of 60 days pre-period (from day t-65 to t-6), AES is the equal-weighted average of absolute value of earnings surprises (ES_Firm) over trading days t-2 through t, MVE is daily market value of equity, N_ANN_SIC is the daily average number of 1-digit SIC firms announcing earnings over the trading days t-2 through t, N_ANN_NONSIC is the daily average number of non-1-digit SIC firms announcing earnings over the trading days t-2 through t. Appendix defines the rest of the variables in the regression model, ES_Firm is the earnings surprise computed as the seasonally differenced quarterly earnings per share before extraordinary items scaled by the price from four quarters before the earnings announcement. Numbers in parentheses are t-statistics calculated using standard errors per White (1980) clustered around trading days. * * *, * *, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

TABLE 7:

Market Attention to Size of the Set of Announcing Firms (*Announcing Firms Only*)

Panel B:	All Years 1990-2015	(a) (2007-09)	(b) Exclude (2007-09)	(a)-(b) t-test
N_ANN_LARGE_NONSIC	1.422***	2.006***	1.305***	0.701
	(9.75)	(2.84)	(9.54)	(0.97)
N_ANN_NONSIC	-0.300***	-0.304***	-0.289***	-0.0143
	(-13.92)	(-3.81)	(-13.72)	(-0.17)
N_ANN_SIC	-0.515***	-1.189***	-0.433***	-0.756***
	(-12.44)	(-6.91)	(-10.67)	(-4.27)
RET	2174.7***	2173.5***	2177.0***	-3.500
	(42.12)	(17.64)	(38.80)	(-0.03)
MVE	4.735***	7.970***	4.299***	3.671***
	(35.27)	(16.64)	(31.26)	(7.37)
Day of Week Dummies		*INCLUDED*		
Year Dummies		*INCLUDED*		
No. of Obs.	168803	19,900	148,903	
Adj-R^2	0.255	0.25	0.26	

Panel B of Table 7 presents coefficients estimates from the following regression model:

$$ABVOL_{i,t}=\beta 0+\beta 1N\_ANN\_LARGE_t+\beta 2N\_ANN\_NONSIC_t+\beta 3N\_ANN\_SIC_t+CONTROLS_{i,t}+\beta dD_t+\beta sY_s+\varepsilon t$$

where ABVOL(%) is the firm level daily abnormal trading volume computed as the difference between the turnover (i.e. VOL/SHO) on day t minus the average turnover of 60 days pre-period (from day t-65 to t-6), N_ANN_LARGE is the daily average number of large firms announcing earnings over the trading days t-2 through t, MVE is daily market value of equity, N_ANN_SIC is the daily average number of 1-digit SIC firms announcing earnings over the trading days t-2 through t, N_ANN_NONSIC is the daily average number of non-1-digit SIC firms announcing earnings over the trading days t-2 through t. Appendix defines the rest of the variables in the regression model. Numbers in parentheses are t-statistics calculated using standard errors per White (1980) clustered around trading days. * * *, * *, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

FIGURE 1
Summary of How Earnings News Impacts Market Attention

	Earnings News Source		
Subset of Firms	Earnings News From Industry-Related Firms	Earnings News From Non-Industry-Related Firms	Overall Absolute Earnings Surprise
Non-Announcing Firms	+	-	+
Announcing Firms	-	-	-
All Firms (not tabulated)	+	-	+

+ indicates that the form of earnings news increases attention (trading) to the market sector;
- indicates the form of earnings news distracts attention (trading) from the market sector.

Figure 1 summarizes how earnings news impacts market attention by using all firms, non-announcing firms, and announcing firms. Earnings news is decomposed into two groups: (i) news from industry-related earnings announcements and (ii) news from non-industry-related earnings announcements. The last column summaries the impact of overall absolute earnings news on market attention.

APPENDIX A:
Variable Names and Definitions

Variable Name	Variable Definition
ABVOL	Firm level daily abnormal trading volume computed as the difference between the turnover (i.e. VOL/SHO) on day *t* minus the average turnover of 60 days pre-period (from day t-65 to t-6).
N_ANN_ALL	Daily average number of firms announcing earnings over the trading days t-2 through t,
N_ANN_SIC	Daily average number of 1-digit SIC firms announcing earnings over the trading days t-2 through t,
N_ANN_NONSIC	Daily average number of non-1-digit SIC firms announcing earnings over the trading days t-2 through t,
N_ANN_LARGE	Daily average number of large firms announcing earnings over the trading days t-2 through t,
N_ANN_LARGE_NONSIC	Daily average number of large non-1-digit SIC firms announcing earnings over the trading days t-2 through t,
ES_Firm	Seasonally differenced quarterly earnings per share (EPS) before extraordinary items scaled by the price from four quarters before the earnings announcement. i.e. $(EPS_{i,q} - EPS_{i,q-4})/ PRICE_{i,q-4}$
AES_Firm	Absolute value of ES_Firm at the firm level,
AES	Equal-weighted average of absolute value of earnings surprises (ES_Firm) over trading days t-2 through t,
MVE ($Billions)	Decile rank of daily market value of equity
RET	Firm level daily absolute stock return