Attention, Distraction, and the Speed of Information Transmission

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Abstract

Attention to the most common firm disclosures, measured as the number of IP addresses accessing them on the SEC's servers, accelerates price discovery. Conversely, attention toward other concurrent filings has the opposite effect. By examining the submenu of reports that each IP address decides to read, we find that the explanatory power of attention to other filings—even while controlling for direct attention—is due to investors still needing to allocate their limited cognitive capacity within their chosen submenus. Our results provide novel evidence for this two-step information acquisition process and suggest that attention does not necessarily imply information production.

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1 Introduction

There is wide evidence that individuals possess limited attention capacity that can restrict their ability to perform multiple tasks and process information from different sources (Kahneman, 1973; Pashler, 1999). Indeed, attention constraints have been shown to have significant effects on financial markets and investor behavior. According to theoretical studies, limited investor attention can rationalize the choice between acquiring aggregate information and firm-specific information (Kacperczyk, Van Nieuwerburgh and Veldkamp, 2016; Peng and Xiong, 2006), portfolio under-diversification (Van Nieuwerburgh and Veldkamp, 2010), and the equity home bias (Van Nieuwerburgh and Veldkamp, 2009). Prior empirical work has found that investors focus more on familiar and attention-grabbing stocks (Barber and Odean, 2008; Huberman, 2001), consistent with attention being a scarce resource. Moreover, differences in the attention firms receive have been documented to explain differences in stock prices (Chemmanur and Yan, 2019; Gervais, Kaniel and Mingelgrin, 2001; Lou, 2014), price momentum (Hou, Xiong and Peng, 2009), stock liquidity (Grullon, Kanatas and Weston, 2004), and stock return volatility (Andrei and Hasler, 2015).

In this study, we empirically explore the relationship between attention to news and the speed at which newly publicly available information is incorporated into stock prices through trading. The news events we examine are the publication of companies' 8-K, 10-Q, and 10-K filings on the Securities and Exchange Commission's (SEC) Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. Firms inform the markets about material events relevant to shareholders through an 8-K filing, whereas 10-Q and 10-K filings are the companies' quarterly and annual reports, respectively. These mandatory disclosures are the most downloaded from the EDGAR platform (Drake, Roulstone and Thornock, 2015) and are highly important from the perspective of EDGAR users. Significant price movements have been reported around 8-K, 10-Q, and 10-K submission dates (Lerman and Livnat, 2010; Li and Ramesh, 2009; You and Zhang, 2009), which point to these filings' high information content and the considerable investor interest they attract.

Consistent with investors needing to pay attention to these reports before processing their information content, we show that greater attention to news is associated with prices that reflect new information more quickly. Specifically, we measure attention using data on the log activity on the EDGAR server and find that attention increases the proportion of the long-term price reaction that is immediately observed after the submission of 8-K, 10-Q, and 10-K filings. We proxy attention by the quarterly decile rank of the number of users viewing a report on the day it is published and compute the long-term price response as the 31-day cumulative abnormal return (CAR) from ten days before to 20 days after disclosure. We show that going from the lowest to the highest decile of the attention measure is associated with a 2.6 percentage point (pp) boost in the filing-date abnormal return as a fraction of the 31-day CAR, which translates to a 33% increase in the informativeness of report-date prices.

Similarly, we verify that the subdued immediate market reaction when attention is low is followed by a high percentage of the long-term price response realized after the filing date, which is consistent with attention accelerating the diffusion of information. We obtain that the proportion of the 31-day CAR attributable to the 20 days after submission to the SEC is 4.9 pp higher when a report is in the bottom decile of attention than when it is in the top. Furthermore, we establish that an increase in attention is related to a surge in trading activity on the filing date, which is also in line with greater information production on the day of publication.

We next document that price discovery is affected not only by the attention a firm receives but also by the attention investors allocate to other competing news. We determine that the attention paid to unrelated SEC reports negatively impacts the company's speed of information diffusion. Therefore, the attention attracted by other filings can be considered a proxy for the extent to which the firm's investors are distracted. This attention appears to reduce the time and effort investors dedicate to processing the information they acquire about the company. In particular, we focus on news that is likely to be extraneous to a specific disclosure and measure investor distraction by the quarterly decile rank of the mean number of EDGAR visits to concurrent filings belonging to other industries. While controlling for the attention a report receives, we show that a 9-decile increase in distraction is associated with a 2.4 pp drop in the informativeness of submission-date prices. We similarly obtain that greater attention to competing news is associated with less trading volume on the filing date and more information released after publication.

This novel finding is an indication that attention does not necessarily imply information production. The significant explanatory power of distraction while accounting for attention suggests the existence of a dimension of the information acquisition process that is not fully captured by our attention proxy. As mentioned before, a possible explanation for this result is that investors acquire information in two steps. Investors first choose the ones among all the available firm filings to which they are going to be attentive. After downloading these reports, they allocate within this *submenu* of filings the limited time and effort they have for extracting information from firm disclosures.

By looking at the submenu of firm disclosures each IP address constructs, we provide the first empirical evidence for this two-step procedure. Thus, we uncover a previously unexplored feature of the information production process that is a direct consequence of investors' cognitive constraints. We establish that the positive impact of our attention measure on filing-date price informativeness and trading activity is weaker if a filing shares the same submenu with more SEC reports from other industries. The speed of information transmission is different for two company disclosures in the same number of submenus (i.e., they have the same value of the attention proxy) if one's investors are also attentive to a higher number of extraneous news.

The findings are not driven by systematic variations in investor attention throughout the day (DeHaan, Shevlin and Thornock, 2015; Kraft, Xie and Zhou, 2020; Michaely, Rubin and Vedrashko, 2014; Patell and Wolfson, 1982). They likewise survive after controlling for variables that are correlated with the attention measure, like the percentage of institutional ownership and analyst coverage, and after accounting for the potentially distracting effects of Fridays and the number of simultaneous filings of other firms (DellaVigna and Pollet, 2009; Hirshleifer, Lim and Teoh, 2009). Emphasizing the added value of the *news-level* measure of attention we use, we obtain that its impact is not subsumed by that of two recently proposed proxies for *firm-level* attention: Da, Engelberg and Gao's (2011) measure constructed from a ticker symbol's search frequency on Google and Ben-Rephael, Da and Israelsen's (2017) measure based on news-searching and news-reading activity on Bloomberg terminals. Examining the heterogeneity in the impact of attention confirms that the positive relation between attention and the information content of report-date prices consistently holds across different subsamples formed on various firm and filing characteristics. Moreover, we show that the effect of attention is not concentrated among investors with a high degree of sophistication (e.g., institutional investors like mutual funds). Several authors find that information acquisition by more sophisticated investors already happens before submission to the SEC (Ben-Rephael, Da, Easton and Israelsen, 2020; Weller, 2018), casting doubt on the informational benefit of mandatory disclosures for retail investors. Our results suggest that, far from lacking usefulness, these filings still contain news that less sophisticated investors can and do exploit to inform their trades.

We examine several alternative mechanisms that could explain our results. First, we determine that the relationship between price discovery and the level of attention SEC reports receive cannot be fully attributed to large price changes on the trading date drawing the attention of investors. Second, we lay out several arguments that rule out that our findings are completely owing to managers strategically timing their disclosures to target investor inattention. Finally, as higher visibility would also encourage EDGAR users to view a firm disclosure, we consider the possibility that the news coverage of the filing or the presence of a press release before the report date is driving our results. We focus on days when the EDGAR platform is not too reliable at executing user requests to download a firm disclosure (e.g., because the server is down). By distinguishing between successful and unsuccessful attempts to read a filing (Heilig, Müller and Peter, 2021), we confirm that what matters for price discovery is actual news-reading, as in the definition of our attention measure, and not merely investors' intention to acquire information.

We contribute to the literature on investor attention in three ways. First, we show that the positive impact of attention on the speed of price discovery is present not only in the case of earnings announcements and analyst recommendation revisions but also in the case of the most common mandatory firm disclosures. Ben-Rephael et al. (2017) obtain that a score based on news-reading and news-searching at Bloomberg terminals is positively associated with the immediate price reaction on the day of an earnings announcement or an analyst recommendation revision. Drake et al. (2015) use data on the log activity on the SEC's EDGAR server to establish that a higher number of user requests for the filing that contains an earnings announcement likewise minimizes the post-earnings-announcement drift.[1] In contrast, our study explores the link between attention and information diffusion for a much larger set of company news. Earnings announcements only happen once every quarter, whereas an 8-K, a 10-Q, or a 10-K report is filed on average every month. Furthermore, the disclosures we consider are harder to process and more subject to investors' limited information acquisition capacity. This is because a quantity like the earnings per share (EPS) that encompasses their information content is unavailable, as they also involve qualitative information that is not easy to quantify. The most important departure of our paper is the examination of the effect on information transmission of attention to competing news. The novel result that attention to other filings delays price discovery indicates that direct proxies for attention based on news-reading and news-searching, like those employed in the studies mentioned above, fall short of fully accounting for investors' information acquisition choices.

Our second contribution is related to the strand of the attention literature that explores the effect of investor distraction on market outcomes. While prior work can only infer the level of inattention from the presence of attention-grabbing events, our study, to the best of our knowledge, is the first to employ a *direct* proxy for distraction by considering the observed attention other reporting firms receive. One study that exploits an indirect measure of inattention is that of Kempf, Manconi and Spalt (2017), who claim that institutional investors center their attention on firms in their portfolios from industries experiencing extreme returns. They obtain that the other companies these institutional investors hold tend to take value-destroying decisions, consistent with these firms reacting to the lower level of monitoring. Peress and Schmidt (2020), in turn, contend that noise traders are more distracted on sensational news days. In line with this conjecture, they find that trading activity, liquidity, and volatility are lower during these "distraction" days. DellaVigna

[1] Similarly, Andrei, Friedman and Ozel (2020) document that an increase in the VIX is associated with a stronger price reaction to earnings surprises. They find that this relationship is attributable to higher aggregate uncertainty boosting firm-level attention, which they measure using the daily EDGAR logs to *all* of a company's filings.

and Pollet (2009) document that the price drift is more severe for earnings announced on Fridays than on other days of the week. They reason that this is owing to investors being less attentive on Fridays as weekends can shift the focus of investors away from information production. Similarly, Hirshleifer et al. (2009) argue that when there are more same-day earnings announcements, the attention investors dedicate to each of them is lower. Subsequently, they provide evidence that prices underreact more to earnings news when this is the case. The explanatory power of our distraction measure persists even while accounting for the effects established by DellaVigna and Pollet and Hirshleifer et al., further bolstering the added value of our proposed proxy.

Finally, the result that the number of competing SEC reports in investors' submenus of filings is a determinant of the speed of information transmission suggests that information is not necessarily produced when the filing is viewed on EDGAR. Investors must not only choose a subset of all the information events that occur each day to be attentive to, but they likewise need to allocate their limited time and effort spent on interpreting information among all the news they choose to gather. We contribute to the larger literature on information acquisition by providing new evidence consistent with investors following a two-step process when they are faced with a multitude of news events competing for their attention. We can reach this novel conclusion as the EDGAR log dataset permits identifying the firm disclosures each IP address downloads. This allows for an analysis of individual-level attention, as opposed to Da et al. (2011), and Ben-Rephael et al. (2017) who measure the level of news-gathering of the market as a whole.[2]

2 Data

2.1 Data sources and sample construction

We collect daily indexes of all reports electronically filed through EDGAR since July 1994 from the SEC website. These indexes contain information on the reporting firm's Central Index Key

[2]Examples of studies that also use investor-level data are Gargano and Rossi (2018) and Sicherman, Loewenstein, Seppi and Utkus (2016). However, previous work does not exploit such information in the context of price discovery after news events.

(CIK), and each report's filing type and filing date. We restrict the analysis to the company filings that are accessed the most by EDGAR users (Drake et al., 2015). In particular, we only consider 10-K, 10-K/A, 10-KT, 10-KT/A, 10-Q, 10-Q/A, 10-QT, 10-QT/A, 8-K, and 8-K/A reports.

Determining the first trading day when an SEC filing is made available at EDGAR is crucial for identifying the market response to the firm's disclosure. Filings submitted between 4 PM and 5:30 PM on day t are recorded in the daily indexes as having been filed on day t. As markets close at 4 PM, day t returns do not measure investor reaction to the newly disclosed information. To handle this issue, we obtain the exact date and time at which these filings are accepted by reading the timestamps in the header of each submission file. We change the filing day to $t+1$ if the document is accepted from 3:50 PM to 5:30 PM on day t. The allowance of ten minutes is for the variable period between the acceptance of a submission by the SEC and its eventual publication (Griffin, 2003), and for the time an individual needs to read and process the contents of the report. We only keep the earliest filing if a company has multiple SEC reports on the same date.

To obtain our proxy for news-specific attention, we employ the EDGAR Log File Data Set, publicly available on the SEC website.[3] This database, which covers the period from February 2003 to September 2017, includes information on, among others, the partially anonymized IP address of each user logging on to EDGAR, the date and time of the visit, and the document consulted. We exclude EDGAR logs that yield an error (i.e., the log file status code is below 200 or above 299), and that are not to the documents themselves but to an index of a set of filings. We further remove observations that potentially result from web scraping, as these bulk downloads could have been employed for research unrelated to information acquisition by stock investors.[4] We detect these instances by (i) employing the web traffic database indicator variable for users that self-identify as web crawlers and (ii) determining for each day the activity of IP addresses that view more than 50 unique filings (Lee, Ma and Wang, 2015). As there are days in the dataset with missing or incomplete logs, we check the total number of filings accessed per day and discard those

[3] See https://www.sec.gov/dera/data/edgar-log-file-data-set.html.

[4] For example, these page visits could have been owing to academics who were building a dataset for a study on company filings.

days with unusual drops in activity.[5] Similar to the date adjustment made for company filings, user views that occur after 3:50 PM on day t are assigned a page visit date of $t+1$.

We use standard data sources to construct the other variables. Daily returns, volume, and shares outstanding are from the Center for Research in Security Prices (CRSP) database. Following previous studies, we focus on common shares (i.e., those with CRSP share codes equal to 10 or 11), stocks traded on NYSE, AMEX, or NASDAQ (i.e., those with CRSP exchange codes equal to 1, 2, or 3), and stocks whose price is greater than 1 USD. Information on institutional investor ownership is from the Thomson Reuters Institutional Holdings (13F) database. The Institutional Brokers' Estimate System (I/B/E/S) provides stocks' analyst coverage and the earnings announcement dates of some firms. Data on the book value of common equity and the earnings announcement dates of the remaining firms are from COMPUSTAT. Whenever COMPUSTAT and I/B/E/S disagree on the earnings announcement date, we follow DellaVigna and Pollet (2009) and keep the earlier of the two dates.

2.2 Variable definitions

A summary of all the variables we use in the empirical analysis, together with their respective definitions, is in Panel A of Table I. The dependent variables in our regressions are the abnormal return and the abnormal share turnover on the days around the filing date t, where the event window is from $t-10$ to $t+20$. The abnormal return $AR_{i,tt+s}$ of firm i s days from t is measured as the CAPM alpha:

$$AR_{i,tt+s} = R_{i,t+s} - RF_{t+s} - \beta_{i,t}^{MKT} MKT_{t+s}, \tag{1}$$

where $R_{i,t+s}$ is the raw return of firm i's stock on day $t+s$, RF_{t+s} is the daily risk-free rate, MKT_{t+s} is the market risk premium, and $\beta_{i,t}^{MKT}$ is the CAPM beta estimated using the period from $t-70$ to $t-11$.[6] A stock's share turnover on any day t' is daily traded volume divided by the average of

[5] In particular, we eliminate days on or before February 13, 2003; between March 23, 2005, and April 6, 2005 (inclusive); between August 19, 2005, and August 31, 2005 (inclusive); between September 23, 2005, and May 10, 2006 (inclusive); and between March 16, 2012, and March 21, 2012 (inclusive).

[6] Results are qualitatively similar if we instead risk-adjust the returns using the Fama and French (1993) 3-factor model, the Carhart (1997) 4-factor model, or the Fama and French (2015) 5-factor model.

the number of shares outstanding at the end of t' and $t'-1$. Abnormal share turnover s days from t is defined as the share turnover on day $t+s$ as a percentage of the average share turnover on days $t-20$ to $t-11$, minus 1.

The main independent variable *OwnAtt* is the quarterly decile rank of the company filing based on the number of IP addresses viewing it on the day it is made public. As seen in Figure 1, there is an upward trend in the number of viewers of the SEC reports. On average, 10-Q, 10-K, and 8-K filings are consulted by 6.05 unique IP addresses during the first quarter of 2003, with this number increasing to 27.41 during the second quarter of 2017. Using the decile rank as our attention measure instead of the raw number of IP addresses allows for a better comparison of filings published in different quarters of the sample period.

The values of the control variables in the event-level regressions are taken ten days before the filing date (i.e., on $t-10$). The percentage of institutional ownership (*PctInst*) is the fraction of shares outstanding held by institutions according to their 13-F filing for the most recently concluded quarter. Analyst coverage (*LogAnalysts*) is the logarithm of 1 plus the number of analysts in the previous month who report forecasts of a stock's EPS for the current quarter (i.e., an I/B/E/S forecast period indicator value of 6). As DellaVigna and Pollet (2009), and Hirshleifer et al. (2009) show that investors are more distracted on Fridays and days with numerous concurrent earnings announcements, we control for these documented effects by including the variables $I(Friday)$ and *NumFilersRank*. The former is defined as a dummy for filings made public on Fridays or days before holidays, whereas the latter is the quarterly decile rank of each trading day according to the number of firms submitting an SEC report. Log market capitalization (*LogMktCap*) is the logarithm of the product of the lagged daily closing price and the lagged number of shares outstanding. The market-to-book ratio (*MTB*) is market capitalization divided by the book value of common equity for the most recently concluded quarter. We define momentum (*MOM*) on day $t-10$ as a stock's cumulative daily return from $t-260$ to $t-11$. Stock i's illiquidity is proxied by Amihud's

(2002) illiquidity measure *Illiq*:

$$\text{Illiq}_{i,t-10} = \frac{10^6}{|D_{i,t-10}|} \sum_{t' \in D_{i,t-10}} \frac{|R_{i,t'}|}{dvol_{i,t'}}, \tag{2}$$

where $R_{i,t'}$ is the return on day t', $dvol_{i,t'}$ the dollar volume traded, and $D_{i,t-10}$ the set of days from $t-70$ to $t-11$ with positive $dvol_{i,t'}$. Return volatility (*Vol*) is the standard deviation of the daily returns from $t-70$ to $t-11$. To account for the information content of SEC reports, the list of control variables also includes the indicator variables *I(8K)* and *I(Earnings)* for 8-K filings and filings that coincide with the publication of earnings, respectively. We do not have the announcement time for all earnings announcements, as this information is not available in COMPUSTAT. To address the possibility that earnings news is made public after trading hours, we consider the day after the recorded announcement date as also having an earnings announcement. Following Loughran and McDonald (2014), we account for the readability of the company report by including the variable *LogFileSize*—the logarithm of the size of the submission file in kilobytes. All variables, except for indicator and rank variables, are winsorized at the 1% and 99% levels.

2.3 Summary statistics

The final sample comprises 600,869 filings of 6,459 unique firms across 3,433 trading days from February 14, 2003, to June 30, 2017. Summary statistics for the full sample are presented in Panel B of Table I. On average, 12 users view an SEC filing on the first trading day it becomes public. Some filings do not receive investor attention, while the maximum number of same-day IPs accessing an SEC report is 42,872. The mean CAPM alpha is zero on the filing day, while share turnover is 172% of the 10-day average before filing. The typical SEC report is from a firm with institutional ownership of 66% and eight stock analysts forecasting its EPS. Twenty percent of filings are on a Friday or right before a holiday, and an average of 361 firms file an SEC report each day. As 10-Q and 10-K reports are, without counting amendments, submitted only once quarterly, a large fraction of the filings (79%) are 8-K reports. A quarter of the filings are simultaneous to the first publication of earnings news, and the average size of an SEC filing is 1.525 megabytes.

SEC reports that receive different levels of investor attention are, as expected, also different across other dimensions. The last two columns of Panel B show the average values of the variables for filings that garner the lowest and the greatest attention per quarter. Low-attention reports are those with *OwnAtt* equal to 1 (the mean number of viewers is 0.2), while high-attention reports have *OwnAtt* equal to 10 (the mean number of IPs is 56.23). Filings that receive the greatest investor attention are from firms with more liquid stocks, as liquidity and pre-filing average share turnover are higher when *OwnAtt* is equal to 10. Attention is also negatively correlated with information asymmetry; high-attention filings are from firms with greater institutional ownership, more analyst coverage, and larger market capitalization. Consistent with DellaVigna and Pollet (2009), and Hirshleifer et al. (2009), company reports in the lowest IP decile have a higher probability of being published on a Friday or right before a holiday, and are submitted on days with more filings from other firms. Further, they are less likely to be a quarterly or an annual report, or include an earnings announcement. The file size of low-attention filings also tends to be smaller. In the empirical analyses, we consider these systematic differences to isolate the effect of our investor attention measure on the outcome variables.

3 Empirical results

3.1 Attention and the informativeness of filing-date prices

This study aims primarily to determine whether the positive effect of investor attention on the speed of information diffusion is also present in the case of the most common mandatory firm disclosures, and not just in the previously documented cases of earnings announcements and analyst recommendation revisions. Several studies find an inverse relationship between attention to earnings announcements and the delay in the response of prices to earnings surprises (DellaVigna and Pollet, 2009; Hirshleifer et al., 2009). While a single number (i.e., the firm's EPS) summarizes the information contained in an earnings announcement, no such variable exists for all the SEC filings we examine as they likewise contain qualitative information that is not easily quantifiable. We proxy the information content of company i's filing by the long-term price reaction around its publication date t. In particular, the amount of information revealed through the SEC report is measured by the cumulative CAPM alpha $CAR_{i,t}^{-10,20}$ from $t-10$ to $t+20$:

$$CAR_{i,t}^{-10,20} = \sum_{s=-10}^{20} AR_{i,tt+s}. \tag{3}$$

We include pre-filing abnormal returns to account for information potentially being disclosed even before the report's submission to the SEC (Ben-Rephael et al., 2020; Weller, 2018). As we obtain that the average time between two company reports is one month, we only use the cumulative abnormal returns up to 20 trading days after the publication date to reduce the confounding effects of the firm's succeeding filing.[7]

3.1.1 Event study results

We start by showing how much of the total information is incorporated into prices s days from the filing date t, where s goes from -10 to 20, for low-attention and high-attention SEC reports. Similar to Weller (2018), and DellaVigna and Pollet (2009), price informativeness on day $t+s$ is measured by the CAPM alpha $AR_{i,tt+s}$ as a fraction of the long-term price response to the company filing. We estimate this ratio by considering the following regression model:

$$AR_{i,tt+s} = \beta CAR_{i,t}^{-10,20} + \sum_{s'=-9}^{20} \beta_{s'} I_{s'}(s) \times CAR_{i,t}^{-10,20} + \phi_i + \delta_{t+s} + \varepsilon_{i,tt+s}, \tag{4}$$

where $AR_{i,tt+s}$ is firm i's abnormal return on $t+s$, $I_{s'}(s)$ is an indicator variable that equals 1 if $s = s'$ and 0 otherwise, ϕ_i is the firm fixed effect, δ_{t+s} is the trading day fixed effect, and the uninteracted dummies for days from publication are left out to economize on space. In Equation 4, a one pp increase in $CAR_{i,t}^{-10,20}$ is associated with a β pp rise in the abnormal return ten days

[7] The conclusions in this study remain valid if we compute the cumulative abnormal returns until 5, 10, 40, or 60 days after the report date.

before the filing date. Therefore, the coefficient β can be viewed as the average proportion of filing-specific information contained in prices on day $t-10$.[8] For $s > -10$, the mean percentage of the cumulative abnormal return attributable to the price movement on day $t+s$ is similarly given by $\beta + \beta_s$.

We run the regression model separately for the subset of high-attention ($OwnAtt = 10$) and low-attention ($OwnAtt = 1$) SEC reports. The estimates of the average fraction of total information revealed from $t-10$ to $t+20$ for both subsamples are illustrated in Figure 2. The standard errors used for the 95% confidence intervals are two-way clustered at the firm and trading day levels. As the estimated ratio between $AR_{i,tt+s}$ and $CAR_{i,t}^{-10,20}$ is significantly positive pre-filing, there is evidence for information being impounded into prices before the report date. We indicate by a dashed gray horizontal line the counterfactual value of the ratio if the release of information were uniform throughout the 31 days of the event window. Up to three days before the filing date and for both groups of SEC reports, $AR_{i,tt+s}$ as a percentage of $CAR_{i,t}^{-10,20}$ is not statistically different from its counterfactual value of 3.23%. The plots of the two filing categories' price informativeness start to pick up and diverge at $t-2$, jumping to their highest value on day t. Afterward, the information content of prices for both report types drastically plummets on $t+1$, eventually remaining below the counterfactual level starting a week after submitting the company report. Importantly, the surge of information incorporated into the stock price on the filing date is much more pronounced for reports in the tenth decile than those in the first decile. Consistent with our hypothesis, the abnormal return on day t is on average 9% of the 31-day CAR for high-attention reports, whereas this fraction is only 5% for low-attention filings.

3.1.2 Baseline panel regression results

As discussed in Section 2, our attention measure is correlated with many observable firm and filing characteristics. One may thus ascribe the previous result to these variables. For example, a higher

[8] More formally, let $\tilde{\beta}$ be the ratio between $AR_{i,tt-10}$ and $CAR_{i,t}^{-10,20}$. In other words, $AR_{i,tt-10} = \tilde{\beta} CAR_{i,t}^{-10,20}$. The coefficient β in Equation 4 is equal to $\tilde{\beta}$: $\beta = \text{Cov}[AR_{i,tt-10}, CAR_{i,t}^{-10,20}]/\text{Var}[CAR_{i,t}^{-10,20}] = \tilde{\beta}$.

number of users reading company reports is related to greater institutional ownership and being followed by more analysts. It may be the case that the IP addresses recorded by the EDGAR server log belong to these informed agents. As stock prices are more informative when investors are more informed (Bartov, Radhakrishnan and Krinsky, 2000; Boehmer and Kelley, 2009), our finding for low-attention and high-attention stocks could be the result of differences in investor sophistication of firms whose SEC filings fall under these two categories.

To deal with this concern, we run filing-level regressions of the report-date abnormal return $AR_{i,tt}$ on the interaction of the 31-day CAR around the filing date with our attention measure *OwnAtt* and with a slew of control variables. Specifically, the baseline regression model is the following:

$$AR_{i,tt} = \gamma OwnAtt_{i,t} \times CAR_{i,t}^{-10,20} + \eta' X_{i,t} \times CAR_{i,t}^{-10,20} + \phi_i + \delta_t + \varepsilon_{i,t}, \quad (5)$$

where ϕ_i and δ_t are the firm and the filing date fixed effects, respectively, and the uninteracted terms are omitted for brevity. Aside from the control variables discussed in Section 2.2, the vector $X_{i,t}$ also contains $CAR_{i,t}^{-10,20}$ and its absolute value to account for the extent to which the news contained in the report is good or bad. In all regressions, the independent variables are demeaned, and standard errors are two-way clustered at the firm and filing date levels.

Column 1 of Table II presents the coefficient estimates when the percentage *PctInst* of institutional ownership, the logarithm *Log(Analysts)* of 1 plus the number of analysts, the dummy variable *I(Friday)* for Friday filings, and the quarterly decile rank *NumFilersRank* of the number of filers are first excluded from the regression. On average, approximately 9.3% of the 31-day CAR is revealed when an SEC report is made accessible through the EDGAR server. Market capitalization and document readability—as proxied by the file size—are, respectively, positively and negatively related to this percentage.[9] Similarly, the type of information each filing contains matters. Periodic

[9]Note that the finding for the readability measure does not suggest that longer filings are more informative, which runs counter to that of Loughran and McDonald (2014). It is possible that reports with larger file sizes are related to a smaller magnitude of $CAR_{i,t}^{-10,20}$, but that a higher percentage of this relatively low total information content is released to the market on the filing date.

reports (10-Q and 10-K filings) and reports without earnings announcements are associated with, respectively, 4 pp and 11 pp less information being incorporated into filing date prices. It thus appears that investors place more attention on 8-K filings, filings during earnings announcement days, and filings with larger file sizes. Unsurprisingly, stocks that are more exposed to information frictions (i.e., illiquid and volatile stocks) have less informative prices. In line with our main hypothesis, our attention measure *OwnAtt* is positively linked to the proportion of the long-term price response reflected on the filing date. The estimate of the ratio between $AR_{i,tt}$ and $CAR_{i,t}^{-10,20}$ is 8.1% for SEC reports in the first decile and 10.7% for filings in the tenth decile, which represents a 33% increase in price informativeness as one goes from the lowest to the highest decile of *OwnAtt*.[10]

3.1.3 Time of filing

One pertinent issue is that these findings could be attributed to the time at which each report is filed. Patell and Wolfson (1982), and DeHaan et al. (2015) contend that investor attention is lowest when markets are closed, whereas Michaely et al. (2014), and Kraft et al. (2020) argue the opposite. It could be the case that a filing being published during low-attention hours makes report date prices less informative, and having fewer IP views is merely a symptom of this inattention. Moreover, if we assume that investors log on to EDGAR at a constant rate throughout the day, reports submitted right before markets close offer less time for investors to arrive (i.e., they have a lower value of *OwnAtt*) and read their content (i.e., their firm's stock price is less informative). The opposite can be asserted regarding SEC reports filed right after closing, as there is almost a full day before the end of the first trading day after submission.

We examine how much variation in the ratio between $AR_{i,tt}$ and $CAR_{i,t}^{-10,20}$ there is throughout the day by running a regression similar to Equation 4. This time, we only consider abnormal returns on the filing day (i.e., $s = 0$) and replace the days-from-filing dummies with indicator variables for each 30-minute interval reports can be electronically filed. The estimates for the

[10] Recall that *OwnAtt* is demeaned—$OwnAtt = 0$ for filings in the fifth decile of the quarterly attention distribution.

fraction of information revealed on the first trading day, together with the 95% confidence intervals, are displayed in Figure 3. Standard errors are, again, two-way clustered at the firm and trading day levels. The dashed gray vertical lines divide the whole day into subperiods. After-hour filings received from 4 PM to 5:30 PM are immediately available on EDGAR, whereas those submitted from 5:30 PM to 10 PM are only accessible starting 6 AM the following trading day. Afterward, there is an 8-hour interval from 10 PM to 6 AM when the SEC does not accept any filings. Reports can again be filed starting at 6 AM, even before markets open at 9:30 AM.

The regression estimates confirm our conjecture that there is filing-time-specific variation in the amount of information incorporated into filing-day prices. Although filings submitted from 5:30 PM and 10 PM become public almost simultaneously as those accepted between 6 AM and 6:30 AM, reports filed during the latter time interval are associated with statistically greater price informativeness. Statistically significant differences in the information content of filing-day returns can likewise be observed as one goes through each of the 30-minute intervals from 4 PM to 6 PM, from 6 AM to 7 AM, from 8 AM to 9:30 AM, and from 10:30 AM to 11:30 AM. As anticipated, stock prices of firms reporting toward the end of the trading day are less informative. These companies provide investors less time to process the firm reports.

In light of this evidence, we attempt to rule out the alternative explanation that our baseline finding is driven by the time the report is submitted and saturate the regression model in Equation 5 with filing-time fixed effects. We include as regressors dummy variables for each 30-minute interval company filings are accepted by the SEC. The coefficient estimates are under Column 2 of Table II. One observes that the estimate for the coefficient of the interaction between *OwnAtt* and the 31-day CAR, together with those of the other interactions, is virtually unchanged. This implies that the effect of our attention measure is not subsumed by the impact of the SEC reports' filing time. Unless otherwise specified, all regressions from here on incorporate filing-time fixed effects.

3.1.4 Other measures of attention

We proceed by reintroducing the four variables in $X_{i,t}$ that have previously been omitted from the regressions. The first two, *PctInst* and *Log(Analysts)*, are *firm-level* measures of investor sophistication. The remaining two, *I(Friday)* and *NumFilersRank*, are *day-level* proxies for investor attention to competing news. Companies that have higher institutional ownership and are followed by more analysts are more likely owned by informed investors. Consequently, filing-day prices should be more informative for these firms. DellaVigna and Pollet (2009) hypothesize that weekends distract investors and, as evidence, establish that the post-earnings announcement drift is greater for earnings announcements occurring on Fridays. Hirshleifer et al. (2009) find that the delayed market response to an earnings announcement is likewise stronger when more same-day earnings announcements are competing for investors' attention.

The coefficient estimates when the interaction terms of $CAR_{i,t}^{-10,20}$ and the four alternative measures for investor attention are, one at a time, included in the regression can be found in Columns 3 to 6 of Table II. As postulated, firms with a greater percentage of outstanding shares held by institutional investors and with more analyst coverage have reports that tend to have more information released on the publication date. A one-standard-deviation increase in institutional ownership and an equal change in the number of analysts are associated with, respectively, a 0.75 pp and a 1.98 pp rise in the ratio between the filing-day abnormal return and the long-term price response. Moreover, consistent with DellaVigna and Pollet (2009), SEC filings on Fridays and days before holidays tend to induce an initial stock price reaction that is 0.86 pp less than those submitted on other days. Conversely, the number of concurrent filings does not have a statistically significant effect on price informativeness, suggesting that the finding of Hirshleifer et al. (2009) for earnings announcements is absent for the SEC reports we consider after accounting for attention to firm disclosures.

Ultimately, the coefficient estimate for the interaction between *OwnAtt* and $CAR_{i,t}^{-10,20}$ after separately controlling for these alternative measures of attention remains the same as in the baseline model. From Column 7, the estimate is unaltered even when all these new interaction terms are simultaneously added to the regression. As the fixed effects can only account for unobserved characteristics that impact the *level* of the filing-day abnormal return, we further allow the coefficient of $CAR_{i,t}^{-10,20}$ to be heterogeneous across the three fixed effects dimensions. With this step, we can control for the average filing-day abnormal return ratio for each firm, trading date, and filing time. The resulting coefficient estimates are under Column 8.[11] Institutional ownership loses its significant impact on price informativeness, whereas analyst coverage and the indicator variable for Friday SEC reports do not. The estimate for the main coefficient of interest is again positive and statistically significant at the 1% level, and its magnitude is even greater under this stricter specification.

Two other direct measures of *firm-level* investor attention have recently been proposed in the literature. The first one is Da et al.'s (2011) daily Google Search Volume Index (*DSVI*), constructed using the frequency with which Google users search a company's ticker symbol. Publicly provided by the Google Trends service, a term's *DSVI* is a number between 0 and 100, and is computed as the number of search queries for the particular term scaled by its time-series average. Da et al. establish that an increase in the *DSVI* has a positive effect on subsequent prices, which is afterward reversed in the long term. By examining retail trading data, they further provide evidence that a stock's *DSVI* captures the information demand of retail investors. The second measure, conversely, reflects the attention of more sophisticated institutional investors. Ben-Rephael et al. (2017) employ information on the number of times users read articles or search for news about a particular stock on the Bloomberg terminal. They build a variable called abnormal institutional attention (*AIA*), which is a dummy variable for a surge in information acquisition on a specific day relative to activity in the previous 30 days. They find that the well-documented price drifts after earnings announcements and analyst recommendation revisions are only present for stocks with low *AIA*, implying that institutional investor inattention is the driving force behind these asset pricing anomalies.

[11] Recall that *NumFilersRank* is the same for all filings on the same trading date, which is why it is dropped from the regression. Conversely, *I(Friday)* is observed at the calendar-date level. Its interaction with $CAR_{i,t}^{-10,20}$ is not absorbed by the fixed effects because trading dates encompass at least two calendar dates.

By construction, *OwnAtt* considers a different dimension of investor attention than *DSVI* and *AIA*. Our chosen measure more directly quantifies the acquisition of the information contained in an SEC filing, whereas the Bloomberg and Google measures are indicators for the demand for news about the company itself. In other words, the previously proposed proxies are more likely than *OwnAtt* to pick up information production unrelated to the firm disclosure. Nonetheless, it could still be the case that the *news-level* attention in *OwnAtt* is already captured by the *firm-level* attention in *DSVI* and *AIA*. We determine whether our attention measure still retains power in explaining price informativeness on the filing date after controlling for the two previously proposed measures in the regressions. To facilitate comparison with the results in the papers mentioned above, we focus on stocks in the Russell 3000 index starting from February 16, 2010 (i.e., when the Bloomberg measure becomes available). As in Ben-Rephael et al. (2017), we measure retail attention by the abnormal *DSVI* (*ADSVI*), calculated as the log of $1+DSVI$ minus the log of 1 plus the average *DSVI* in the previous 30 days.[12] The variable *AIA* takes the value of 1 if Bloomberg records that news searching and reading by users during at least one hour of a particular day is above 94% of the past month's values (i.e., if the Bloomberg score is three or four) and zero otherwise.

The coefficient estimates for the interaction terms of *OwnAtt*, *AIA*, and *ADSVI* with $CAR_{i,t}^{-10,20}$ are reported in Table III. The regressions for Columns 1 to 4 are the same specification as in Column 7 of Table II. We first consider the impact of each attention measure individually. Column 1 shows that the findings for the full sample are maintained in the subset of Russell 3000 stocks. We obtain in Column 2 that a rise in *AIA* is associated with more information in filing-day prices. This indicates that Ben-Rephael et al.'s (2017) results for earnings announcements and analyst recommendation changes also hold for the most viewed SEC reports. The estimate suggests that the stock price of a firm that experiences abnormal institutional attention is 9 pp more informative than that of a firm that does not. As seen in Column 3, retail attention likewise significantly affects the fraction of the 31-day CAR revealed on the report date. A one-standard-deviation

[12] To increase the likelihood that the Google Search activity we detect is related to information acquisition of stock investors, we filter the Google Trends results by requiring that searches be under the category "Business News."

jump in abnormal retail attention, equal to an increase of 1.42, is associated with a 0.9 pp rise in the ratio between $AR_{i,tt}$ and $CAR_{i,t}^{-10,20}$. Contrary to Ben-Rephael et al.'s (2017) results for earnings announcements, it appears that retail attention also facilitates the transmission of the information contained in SEC filings into prices. One observes in Column 4 that the positive and significant coefficients of *OwnAtt*, *AIA*, and *ADSVI* persist even when we have the three measures in the same regression model. Therefore, accounting for the impact of the Bloomberg and Google Search attention measures leaves our previous findings regarding *OwnAtt* unaffected. Furthermore, allowing the coefficient of $CAR_{i,t}^{-10,20}$ to vary across firms, filing dates, and filing times once again increases the magnitude of the coefficient of our attention measure (See Column 5).

3.1.5 Heterogeneity across stock and filing characteristics

We determine whether the effect of our attention measure on price informativeness varies with some observable stock and filing characteristics. To this end, we run separate regressions on different subsets of SEC reports formed according to their values of the controls in $X_{i,t}$. We consider the regression specification in Column 8 of Table II. If the sorting variable is continuous, the company filings are divided into three groups based on the terciles of the variable's distribution.

The estimates of γ (i.e., the coefficient of the interaction between *OwnAtt* and the 31-day CAR in Equation 5) are depicted in Figure 4 together with their 95% confidence intervals. The figure shows that the impact of our attention measure on the fraction of information revealed on the filing date is consistently positive and statistically significant, which suggests that our previous findings are not concentrated in merely a few groups of reports. In particular, *OwnAtt* also affects SEC filings that are not accompanied by an earnings announcement. This implies that the association between attention and the post-earnings-announcement information diffusion described by Drake et al. (2015) and Ben-Rephael et al. (2017) also exists for a more general set of company disclosures.

Interestingly, the impact of *OwnAtt* does not seem to depend on the readability of the company report, proxied by the size of the submission file as in the study of Loughran and McDonald

(2014). One further notices an inverse U-shape relationship between γ and the 31-day CAR around the filing date, the latter of which is a measure of the information content of the SEC report. A 9-decile jump in investor attention is associated with a 6.8-pp rise in the fraction of information revealed on the filing date for intermediate values of $CAR_{i,t}^{-10,20}$; this increase is on average only 2.9 pp for bad news and 1.8 pp for good news. A possible explanation is that this is because of the reaction of uninformed investors to price movements. Consider company filings that receive low informed investor attention. If one assumes that the proportion of information incorporated into prices owing to informed trading is the same for each level of *OwnAtt*, reports in the extreme terciles are associated with relatively larger absolute abnormal returns right after publication. These more salient price changes attract uninformed investors' attention and drive them to trade in the direction of the news, partially offsetting the adverse effect of a low *OwnAtt* on the informativeness of the filing day's closing price. Post-report price fluctuations are, conversely, less noticeable for filings in the middle tercile. In the absence of the involvement of uninformed investors, the impact of informed attention becomes more pronounced.

Overall, we find that the impact of *OwnAtt* is more prominent for filings that, as presented in Table II, tend to have more informative report-date prices. The coefficient γ is greater for 8-K filings ($\gamma = 0.48$) than for periodic reports ($\gamma = 0.16$) and lower for SEC filings submitted on Fridays ($\gamma = 0.28$) than for those filed on other days of the week ($\gamma = 0.42$). Similarly, the effect of *OwnAtt* is increasing in institutional ownership, analyst coverage, and market capitalization, while it is decreasing in illiquidity and volatility. As a more immediate price response to firm disclosure is consistent with the presence of more informed traders, these results provide evidence that what the measure *OwnAtt* is capturing is the attention of informed investors.

3.2 Attention and the delay in information transmission

Our findings thus far point to less information being revealed through filing-date prices when an SEC report attracts less attention. We explore whether this subdued immediate market response to firm disclosures is followed by more information being incorporated into prices in the days following the publication date. We verify whether lower investor attention is related to a delay in information transmission, akin to what DellaVigna and Pollet (2009), Drake et al. (2015), Hirshleifer et al. (2009), and Ben-Rephael et al. (2017) establish for earnings announcements. This is a particularly important test as price discovery occurs even before the disclosures, as seen in Figure 2. An alternative explanation for our results is that they are owing to differences in the amount of information released pre-filing among high- and low-attention reports. Specifically, suppose all information is produced before submission to the SEC. In that case, no investor needs to view the filing (i.e., *NumIPs* is zero), and prices on and after the report date are not informative.

To address the question, we run the regression model used in Column 7 of Table II but with the cumulative abnormal return $CAR_{i,t}^{1,20}$ in the 20 days after the filing date as the dependent variable. The estimates are displayed in Column 1 of Table IV's Panel A. On average, approximately 57% of $CAR_{i,t}^{-10,20}$ is attributable to the post-filing period. The estimate for the coefficient of the interaction term between our attention measure and the 31-day CAR is negative and statistically significant at the 1% level. This result survives the interaction of each fixed effect with $CAR_{i,t}^{-10,20}$. The estimate in Column 2 implies that the proportion of information released through prices in the month following the filing date is higher by 4.90 pp as the attention measure goes from the highest decile to the lowest. We also check that this impact of *OwnAtt* is not dependent on the length of the post-report period. In particular, Columns 3 to 6 show that the relationship between attention, and the ratio between $CAR_{i,t}^{1,T}$ and $CAR_{i,t}^{-10,T}$ is consistently negative and statistically significant for $T = 5, 10, 40, 60$, where T is the number of days after the filing date on which we stop summing abnormal returns. Considered together, these results corroborate our claim that firm disclosures with greater investor attention have a faster rate of information diffusion upon submission to the SEC. There is less evidence that the previously documented relationship between attention and report-date price informativeness is completely driven by pre-filing information production.

We reach the same conclusion if we focus on the subset of Russell 3000 stocks from February 2010 onward, and introduce the interaction of *AIA* and *ADSVI* with the long-term price reaction in the regressions. From Columns 1 and 2 of Panel B, we obtain that in line with investor attention accelerating information dissemination, the ratio between the post-filing CAR and $CAR_{i,t}^{-10,20}$ is lower when *AIA* and *ADSVI* are higher. The proportion of the 31-day CAR revealed after the report date is 3.5 pp lower when a firm is subject to abnormal institutional attention. This fraction also decreases by 0.59 pp after a one-standard-deviation increase in abnormal retail attention. More importantly, the coefficient of the interaction between *OwnAtt* and $CAR_{i,t}^{-10,20}$ is still negative and statistically significant at the 1% level. We confirm in Columns 3 to 6 that we attain similar findings if we consider different ending days of the post-filing period. Interestingly, the coefficients of *AIA* and *ADSVI* lose their statistical significance when T is equal to 5, implying that our measure is better at explaining the delay in information transmission for shorter evaluation periods. We view this as additional evidence that the variable *OwnAtt* contains information regarding investor attention not encompassed by the two other measures.

3.3 Attention and abnormal share turnover

Suppose the market reaction to an SEC report is faster when it receives more attention from investors. In this case, one should likewise expect heavier trading activity on the filing date for high-attention filings than for low-attention filings. As in the prior section, we begin testing this hypothesis by performing an event study of the response of trade volume to company reports. Specifically, we run the following regression model separately for filings with $OwnAtt = 1$ and $OwnAtt = 10$:

$$AbShareTO_{i,tt+s} = \sum_{s'=-9}^{20} \lambda_{s'} I_{s'}(s) + \phi_i + \delta_{t+s} + \varepsilon_{i,tt+s}, \tag{6}$$

where $AbShareTO_{i,tt+s}$ is the abnormal share turnover of firm i's stock on day $t+s$, and $I_{s'}(s)$, ϕ_i, and δ_{t+s} are similarly defined as in Equation 4. If the claim is correct, one should find that the coefficient λ_0 is greater for high-attention filings than for low-attention filings. The estimates, together with the 95% confidence intervals, for the average abnormal share turnover from ten days before to 20 days after the SEC report date are illustrated in Figure 5. Standard errors are once again two-way clustered at the firm and trading day levels.

The figure shows that the abnormal share turnover for both categories is already at approximately 10% ten days before the filing date, in line with investors' information acquisition pre-filing. Trading activity monotonically increases as one goes closer to t, with the difference between the value of $AbShareTO_{i,tt+s}$ for low- and high-attention reports only becoming statistically significant on $s=-2$. As in the case of price informativeness, the rise in trade volume on the publication date is visibly stronger for filings in the top decile of *OwnAtt* than for those in the bottom decile. Consistent with our conjecture, the average abnormal share turnover is 50% for low-attention reports, whereas it is twice as much (105%) for high-attention reports. Trading activity then begins to decline after submission to the SEC, with abnormal share turnover settling at 26% when $OwnAtt = 1$ and at 20% when $OwnAtt = 10$ after 20 days. This difference in trading volume is in line with the previous section's findings that there is more post-filing information dissemination when a report attracts less investor attention on the report date.

We verify that these findings continue to hold even after controlling for company and filing characteristics that may be correlated with our attention measure. We run the following event-level panel regression of day-t abnormal share turnover on *OwnAtt* and the same control variables employed in Equation 5:

$$AbShareTO_{i,tt} = \theta OwnAtt_{i,t} + \eta' X_{i,t} + \phi_i + \delta_t + \varepsilon_{i,t}, \tag{7}$$

A positive value for the parameter θ is consistent with the hypothesis that greater investor attention to a firm's filing is related to more trading activity when it publishes the filing on EDGAR.

The coefficient estimates when *PctInst*, *Log(Analysts)*, *I(Friday)*, and *NumFilersRank* are first dropped from the set of control variables are reported under Column 1 in Panel A of Table V. Standard errors that are two-way clustered at the firm and the filing date levels are reported in parentheses below the estimates. We obtain that stocks with larger market capitalization, higher liquidity, and greater volatility tend to have lower abnormal share turnover when the SEC report is made public. In line with the claim in Section 3.1 that 8-K filings, filings on earnings announcements days, and filings with bigger submission files receive greater investor attention, we find that stocks of firms that submit these types of reports experience heavier trading on the filing date. Most importantly, the estimate for the coefficient of our attention measure is positive and statistically significant. The estimate for θ implies that a one-decile increase in the rank of the number of IP addresses visiting a company filing is associated with a 6 pp jump in abnormal share turnover. In other words, moving from the lowest to the highest decile of *OwnAtt* is related to a 51 pp surge in trading activity on the filing date. We further show in Column 2 that including filing time fixed effects even amplifies the magnitude of the statistically significant effect of attention on abnormal share turnover.

We next control for the four variables in $X_{i,t}$ that have previously been used in the literature to proxy for investor attention (or attention to competing news). Columns 3 to 6 display the estimates when *PctInst*, *Log(Analysts)*, *I(Friday)*, and *NumFilersRank* are reintroduced into the regression model individually. The coefficient estimates for institutional ownership—a measure of informed investor attention—and the number of same-day SEC reports of other firms—a measure of attention to competing news—have the sign contrary to one's expectations of them. Filing-day trading activity is found to be less for stocks with higher *PctInst* and for filings with lower *NumFilersRank*. Conversely, the signs of the coefficient estimates for *Log(Analysts)* and *I(Friday)* are as predicted. A one-standard-deviation increase in analyst coverage is related to abnormal share turnover greater by 5 pp. SEC reports filed on Fridays are subject to 10 pp less trading. Focusing on our attention measure, we obtain that the estimate for the coefficient of *OwnAtt* remains significantly positive and is stable in magnitude across all specifications. This result persists even after including all four variables in one regression model, as seen in Columns 7 and 8.

Moreover, this effect of *OwnAtt* is not subsumed by the impact of Da et al.'s (2011) Google Search measure or Ben-Rephael et al.'s (2017) Bloomberg measure. Similar to the case of price informativeness, we prove this claim by analyzing the relationship between abnormal share turnover and the three attention measures for the subset of Russell 3000 stocks from February 2010 onward. The regression specification we employ is the one used in Column 8 of Panel A. The coefficient estimates for *OwnAtt*, *AIA*, and *ADSVI* are reported in Panel B. The first column shows that the coefficient of *OwnAtt* is statistically significant and virtually the same as in Panel A, signifying that the previous findings are also applicable to this subsample of stocks. The estimates in Columns 2 and 3 affirm that the measures of abnormal retail attention and institutional attention are positively related to the trading volume on the filing date. A stock with $AIA = 1$ is associated with trading activity that is 78 pp greater than that of a stock with $AIA = 0$. A one-standard-deviation increase in *ADSVI* is, in turn, linked to a 6.5 pp boost in abnormal share turnover. Finally, Column 4 shows that including all three attention measures in the same regression model does not alter the previous conclusion that *OwnAtt* has a positive and statistically significant impact on the level of trading on the report date.

3.4 Attention and investor sophistication

Does the impact of attention on filing-date price informativeness and trading activity vary with the sophistication of the investors downloading the SEC report? Ben-Rephael et al. (2017) document that greater institutional attention (proxied by the Bloomberg measure *AIA*) weakens the post-earnings-announcement drift, while retail attention (proxied by the Google measure *DSVI*) does not have any effect on the systematic underreaction of prices to earnings surprises. In light of the authors' findings, one could fully attribute the previous sections' results to the information acquisition of more sophisticated agents (e.g., institutional investors like mutual funds). This would imply that the attention of less sophisticated investors does not contribute to price discovery, supporting the claim of Ben-Rephael et al. (2020) that company filings have minimal informational benefit for retail investors.

Similar to Iliev, Kalodimos and Lowry (2021), we infer the sophistication of every IP address by counting the 8-K, 10-Q, and 10-K reports read by the investor in the previous quarter. Our proxy for investor sophistication is the number of document-trading day pairs for each IP address. That is, downloads of the same document on two different days are counted twice, while multiple views of a firm disclosure on the same day are counted once. We consider the downloads of both historical and current SEC filings. An investor has low sophistication if their EDGAR activity comprises at most 20 document-trading day pairs. IP addresses with high sophistication are those with at least 200 pairs. With these threshold values, about 25.9% of the IP addresses are classified as having low sophistication, 15.5% have intermediate sophistication (i.e., those with between 20 and 200 document-trading day pairs), and 3.3% have high sophistication. The remaining 55.3% do not have any download activity in the past quarter. Investors with high sophistication, though representing less than 5% of the IP addresses, contribute 31.1% of the views on the day reports are filed. This percentage is 15.3% and 25.4% for investors with low and intermediate sophistication, respectively. About 28.2% of the same-day downloads are from IP addresses without EDGAR views in the previous quarter.

To determine whether our baseline findings can be fully ascribed to the attention of highly sophisticated investors, we rerun the specifications employed for Column 8 of Table II, Column 2 in Panel A of Table IV, and Column 8 in Panel A of Table V. Instead of *OwnAtt*, the independent variables of interest are the proxies *LowSoph*, *MedSoph*, and *HighSoph* for the attention of three types of investors. These variables are the quarterly decile ranks of the number of filing-day downloaders who have low, intermediate, and high sophistication, respectively. The coefficient estimates are shown in Table VI. We introduce the attention measures individually in Columns 1 to 3, 5 to 7, and 9 to 11. One sees that the coefficient of each attention proxy is statistically significant and of the same sign as that of *OwnAtt* in the baseline regressions. Importantly, the coefficients of *LowSoph*, *MedSoph*, and *HighSoph* are all statistically significant and of comparable magnitudes even if the three variables are included in the same regression model in Columns 4, 8, and 12. That is, the impact of the attention of investors with low sophistication is not statistically different from that of investors with high sophistication. These results provide evidence that, far from lacking usefulness, these mandatory filings contain news that less sophisticated investors can and do exploit.

3.5 Attention to competing news

This section discusses whether the attention unrelated firm disclosures attract affects the informativeness of a company's filing-date prices. If news-gathering necessarily implies information acquisition, then attention to competing news would not be associated with the speed of information transmission after controlling for the attention a specific report garners. Conversely, the attention extraneous news events receive could be detrimental to a stock's price discovery if being attentive to them leads investors to reallocate some of their limited cognitive capacity away from the filing and toward the competing firm disclosures.

A company's SEC report can be a source of signals about the state of the aggregate economy and, especially, of the sector to which the firm belongs (Jorion and Zhang, 2007; Savor and Wilson, 2016; Tookes, 2008). In light of these information spillovers, the potentially distracting news we examine is the same-day filings of companies from other industries. We measure the attention drawn by disclosures of firms outside of a specific sector using the variable *NumIPsOthInd*, defined as the average number of IP addresses viewing the concurrent filings of companies in other industries. In particular, the value of *NumIPsOthInd* for industry j on day t is

$$NumIPsOthInd_{j,t} = \frac{1}{|\mathcal{I}_{j,t}^{C} \cap \mathcal{I}_{R,t}|} \sum_{i \in \mathcal{I}_{j,t}^{C} \cap \mathcal{I}_{R,t}} NumIPs_{i,t}, \tag{8}$$

where $\mathcal{I}_{R,t}$ is the set of firms submitting a report on t, $\mathcal{I}_{j,t}$ is the set of companies in j according to Fama and French's (1997) 48-industry classification scheme, and $NumIPs_{i,t}$ is the number of EDGAR users visiting firm i's filing. As in the previous sections, the variable we employ in the regressions is the quarterly decile rank, denoted by *OthIndAtt*, of the attention paid to SEC reports from industries different from j.

We begin testing our claim by repeating the event study analyses implemented in Sections 3.1 and 3.3 for reports whose investors are the most and the least attentive to competing news. Filings with a high level of attention to extraneous news are those with $OthIndAtt = 10$, whereas disclosures with a low level have $OthIndAtt = 1$. For both subsets of reports, the mean abnormal return as a fraction of the long-term price response and the mean abnormal share turnover around the filing date are displayed in Figure 6. One observes that attention to news about companies from other industries is inversely related to price informativeness and trading activity when the report is submitted to the SEC. In particular, the filing-date abnormal return as a percentage of the 31-day CAR is, on average, 5.9% when $OthIndAtt = 10$ and 7.4% when $OthIndAtt = 1$. In turn, abnormal share turnover is 62% when attention to competing disclosures is considerable, whereas it is 16 pp greater (80%) when this attention is low. As these results are in line with the hypothesis that attention to unrelated filings reduces the time and effort investors dedicate to acquiring information about firms in a specific sector, the variable *OthIndAtt* can hence be considered a proxy for *investor distraction*.

We assess the robustness of the preliminary findings of this section by running panel regressions that consider the possible confounding effects of firm and filing characteristics. To confirm the link between *OthIndAtt* and price informativeness, we rerun the regression model used in Column 8 of Table II with the interaction between our measure for diverted attention and $CAR_{i,t}^{-10,20}$ as an additional explanatory variable. We also append another sector-level variable called *NumFilersRankOthInd* to the set of controls. This variable, calculated as the quarterly decile rank of the number of filers in other industries, is included to ensure that the results are not driven by the industry-level analog of the effect documented by Hirshleifer et al. (2009). The negative and statistically significant estimate for the coefficient of the new interaction term—reported under Column 1 of Table VII's Panel A—is consistent with the result in Figure 6. A 9-decile increase in an SEC report's level of distraction (i.e., from having $OthIndAtt = 1$ to having $OthIndAtt = 10$) is associated with a 2.4 pp drop in the information transmitted through filing-date prices.

One could argue that this result is potentially owing to the attention received by a firm's sector as a whole. To illustrate this point, suppose there are only two industries—A and B—and A has a higher average number of IP addresses visiting its firms' SEC filings than B. By construction, the distraction measure of A is lower than that of B. The relationship we obtain could then be rationalized by industry-level attention reinforcing the impact of firm-level attention. We rule out this alternative explanation by accounting for the average attention of all the filers in a company's industry. We interact *OwnIndAtt*, the within-industry version of *OthIndAtt*, with the long-term price reaction and introduce the interaction term in the regression model. The quarterly decile rank *NumFilersRankOwnInd* of the count of same-sector filers is similarly added as a control. The estimate for the coefficient of $OwnIndAtt \times CAR_{i,t}^{-10,20}$ when this term is incorporated in the original specification is under Column 2. We fail to find sufficient evidence for the competing explanation, as the coefficient of the interaction in question is small in magnitude and is not statistically significant.

We obtain further support for the distraction hypothesis when we simultaneously consider *OthIndAtt* and *OwnIndAtt*. From Column 3, the coefficient of the interaction between the distraction measure and the 31-day CAR is once more negative and statistically significant at the 1% level, whereas that of $OwnIndAtt \times CAR_{i,t}^{-10,20}$ is again not statistically significant. As the number of IP addresses that log on to the EDGAR server is correlated with other filing-level variables, one could still attribute these findings to across-industry differences in the average characteristics of SEC reports. We deal with this concern by taking the mean of each variable in $X_{i,t}$ for (i) firms in company i's industry and (ii) the remaining firms, and including the interactions of these averages with $CAR_{i,t}^{-10,20}$ in the regressions employed in Columns 1 to 3. We list the resulting coefficient estimates under Columns 4 to 6. Notably, the previous finding that more attention directed toward the filings of firms in other industries negatively impacts the amount of information assimilated into report-date prices is left unaltered under these stricter specifications.

To alleviate the concern that this effect is only due to pre-filing information acquisition, we investigate the impact of our distraction measure on the proportion of the long-term price reaction released after submission to the SEC. We reestimate the models used in Panel A but with the CAR from a day after to 20 days after the report date as the dependent variable. The estimates in Column 1 of Panel B indicate that going from the first decile of *OthIndAtt* to the last is related to a 5 pp rise in the information revealed post-filing. This, together with the result on filing-date price informativeness, is consistent with investor distraction slowing down price discovery.

The coefficient of the interaction term between *OthIndAtt* and $CAR_{i,t}^{-10,20}$ maintains its sign and statistical significance even after controlling for *OwnIndAtt* (Column 3), and accounting for the average characteristics of filings in the same industry and other industries (Columns 4 to 6).

Finally, we determine whether the result in Figure 6b holds in a panel regression that includes firm and filing characteristics as independent variables. To this end, we add *OthIndAtt*, *OwnIndAtt*, *NumFilersRankOthInd*, and *NumFilersRankOwnInd* in the specification in Column 8 of Table V's Panel A. The coefficient estimates are shown in Panel C of Table VII. Corroborating our preliminary finding, the coefficient of the distraction measure in Column 1 is negative and statistically significant at the 1% level. One obtains that a filing moving nine deciles up in the ranking of investor distraction is associated with a 48 pp decline in trading activity on the report date. As opposed to the result on the speed of information transmission, *OwnIndAtt* has a statistically significant impact on abnormal share turnover. Column 2 indicates that firms with the greatest industry-level attention experience trading volume 10 pp greater than those with the lowest. A higher value of *OwnIndAtt* could mean that an industry is attracting more attention from informed and uninformed investors alike, which increases trading for all stocks that belong to it. The absence of any effect of industry-level attention on price formation could indicate that most of the volume related to *OwnIndAtt* that is unexplained by filing-level attention comes from uninformed traders. More importantly, Columns 3 to 6 confirm that the negative and statistically significant impact of distraction on trading activity survives even after controlling for *OwnIndAtt*, and the mean values of the control variables in and out of a firm's industry.

3.6 Two-step information acquisition

In all the regressions in the previous section, we have (i) the measure for the attention a particular company attracts and (ii) the proxy for the distraction of a firm's informed investors. This implies that two SEC reports that have the same *OwnAtt* have different levels of filing-date price informativeness and abnormal share turnover if one's *OthIndAtt* is greater than the other. The significant explanatory power of the distraction measure while controlling for direct attention suggests that information is not necessarily produced when a filing is viewed on EDGAR. In other words, direct proxies for attention based on news-reading and news-searching activity cannot fully capture investors' information acquisition choices. As mentioned in the previous section, a possible explanation for these findings is that information is acquired in two steps. Investors first choose the ones among all the available firm filings to which they are going to be attentive. After downloading these reports, they allocate within this *submenu* of filings the limited time and effort they have for extracting information from firm disclosures.

We strengthen our results on investor distraction by exploring whether there is evidence for this two-step information production process. In particular, we examine the impact on a specific filing of sharing the same submenu with more reports from other industries. Suppose investors still need to budget their information acquisition capacity among the filings in this subset. In this case, the positive effect on report-date price informativeness and trading activity of belonging to more submenus (i.e., having a higher *OwnAtt*) should be weaker when there are more competing information events in the second step. The EDGAR log data offer the possibility to test this hypothesis as there is information on all the SEC reports a particular IP address views on each trading day of the sample period. Unlike the studies that use the Bloomberg or the Google attention measure, we can directly observe each investor's chosen submenu. We measure the average number of distracting reports in the submenus that contain a specific filing by *NumFilersSameIPOthInd*, which is defined as

$$NumFilersSameIPOthInd_{i,t} = \frac{1}{|\mathcal{K}_{i,t}|} \sum_{k \in \mathcal{K}_{i,t}} \sum_{i' \in \mathcal{I}_{k,t}} \left[1 - I_{j(i)}(i')\right]. \tag{9}$$

Here, $\mathcal{K}_{i,t}$ is the set of IP addresses that download firm i's submission on date t, $\mathcal{I}_{k,t}$ is the set of firms whose reports EDGAR user k consults, $j(i)$ is i's industry, and $I_{j(i)}(i')$ is an indicator variable that equals one if i' belongs to sector $j(i)$ and zero otherwise. In other words, company i's *NumFilersSameIPOthInd* is the average number of filings from other industries across all IP addresses that include i's report before the second step. As before, the variable we consider in the regressions is the quarterly decile rank *SameIPOthInd* of *NumFilersSameIPOthInd*.

To determine whether the number of competing SEC filings in investors' submenus negatively impacts the link between our attention proxy and the speed of information transmission, we rerun the specifications used for Column 8 of Table II, Column 2 in Panel A of Table IV, and Column 8 in Panel A of Table V. However, this time, we include the interaction of *SameIPOthInd* with *OwnAtt* in the regressions. If the claim is correct, then the effect of being viewed by more EDGAR users on the percentage of the long-term price response revealed on and after the submission date must, respectively, be less positive and less negative when *SameIPOthInd* is higher. Trading activity must likewise rise less as *OwnAtt* is increased if a report is grouped with more filings from other industries in the first step. The estimates can be found in Table VIII. As one can expect *SameIPOthInd* to be high when the quarterly decile rank *NumFilersRankOthInd* of the aggregate count of filers in other industries is also high, the regressions additionally control for the interaction between *NumFilersRankOthInd* and the attention measure. This ensures that the results are indeed driven by the number of distracting news in the submenus and not by their total number on a given trading day.

In line with the conjecture, the coefficient of the triple interaction of *OwnAtt*, *SameIPOthInd*, and the 31-day CAR under Column 1 is negative and statistically significant. When *SameIPOthInd* is in the lowest decile, a 9-decile jump in the attention proxy is associated with a 6.5 pp increase in the informativeness of filing-date prices. The same change in *OwnAtt* is instead related to a 1.4 pp rise in the fraction of the long-term price response observed on the filing date when *SameIPOthInd* is in the tenth decile. As observed in Column 2, we reach a similar conclusion even after accounting for *SameIPOwnInd*, which is the quarterly decile rank of the average number of same-industry SEC reports in the submenus that contain a given filing. Moreover, the coefficients of the main triple interaction under Columns 3 and 4 are significantly greater than zero, implying that having more distracting information events in investors' submenus weakens the negative effect of *OwnAtt* on the delay in price discovery. As one goes from decile 1 to decile 10 of the attention measure, the drop in the information revealed post-filing is 9.4 pp when *SameIPOthInd* is lowest and 2.9 pp when it is highest. Finally, Columns 5 and 6 show that the number of reports from other industries in the same submenu is negatively related to the magnitude of the effect of our attention proxy on filing-date abnormal share turnover. Specifically, a one-decile increase in *SameIPOthInd* lessens the positive effect of attention on abnormal share turnover by approximately 12%.

3.7 Alternative explanations

3.7.1 Attention responding to prices

The correlation between the informativeness of filing-day prices and the level of attention SEC reports receive could arise from investor reaction to large price changes on the report date. If a firm disclosure submitted within trading hours contains unequivocally considerably good or bad news, the first informed investors to read it may trade on this information right away because of its unambiguous nature. In the process, a high percentage of the 31-day CAR is revealed even before markets close. The considerable stock price response likewise draws the attention of other market participants, driving them to log on to the EDGAR server to view the filing.

To alleviate this concern, we follow Ben-Rephael et al. (2017) and focus on reports that are accepted by the SEC during the 17.5 hours from 3:50 PM to 9:30 AM before the opening of stock exchanges. Seventy percent of the filings in our sample belong to this category. Notably, there is also pre-market and after-hours trading that facilitates price discovery (Barclay and Hendershott, 2003; Jiang, Likitapiwat and McInish, 2012), but trading volume is substantially lower during these periods. As Ben-Rephael et al. (2017) explain, it can be reasonably assumed that investors pay more attention to news than to prices outside of regular trading hours, implying that company disclosures submitted when exchanges are closed are less exposed to the endogeneity problem we are discussing.

On this subsample, we rerun the regressions used for Table VIII and the last three columns in the three panels of Table VII. The coefficient estimates are shown in Table IX. The variables *OwnAtt*, *OthIndAtt*, and *SameIPOthInd* are calculated by taking into account only the EDGAR server logs that are registered before exchanges open. We only consider the IP addresses that visit a filing in the subsample before 9:30 AM, and the three measures are quarterly decile ranks based on the viewers in this group. The table shows that our previous results are not fully attributable to investors' reaction to stock price movements. *OwnAtt* and *OthIndAtt* are still, respectively, positively and negatively related to the speed of information diffusion and report-date abnormal share turnover. Moreover, *SameIPOthInd* continues to dampen the effects of the attention proxy on this subset of company filings.

3.7.2 Strategic timing of disclosures

The time and the date SEC reports are filed are choices of the manager. The literature documents that, seemingly to take advantage of investor inattention, bad news are more likely to be made public on Fridays and when markets are closed (DeHaan et al., 2015; Michaely, Rubin and Vedrashko, 2016; Niessner, 2015; Patell and Wolfson, 1982; Segal and Segal, 2016). Conversely, Doyle and Magilke (2009), and Michaely et al. (2014) contend that attention is high after regular trading hours, driving managers to release more complex news during this period to facilitate information dissemination. In light of prior evidence, one can suspect that our findings are mainly the consequence of these strategic motives. For instance, it could be the case that unsatisfactory news is announced through a less understandable filing and when investors are more inattentive to hide the information from the market. Few EDGAR visits (owing to higher investor distraction) and slow information transmission (owing to lower readability) could be the outcome of the manager's decision, implying the absence of any causality that goes from the former to the latter.

We argue that managers' strategic choices are unlikely to drive the relationships we uncover in this study. For one, the positive impact of *OwnAtt* on the fraction of the 31-day CAR revealed on the report date also exists among 8-K filings. While firms have at least 60 days to file a quarterly or an annual report, a manager has less timing flexibility when submitting a Form 8-K as it must be received by the SEC at most four business days after the triggering event. As we further obtain that the effect is more pronounced among 8-K filings, there is even more doubt that the competing story produces the results. Second, we can rule out time-specific targeting of investor distraction because all our specifications have filing-time fixed effects and because our findings hold for Friday and non-Friday reports alike. Finally, suppose strategic concerns are the reason for the association between attention and information transmission. In this case, one should expect the statistically significant link between the two to disappear once readability and information content are controlled for in the regressions. All our empirical models include the long-term price reaction, its absolute value, and the submission file size as independent variables. Moreover, the effect of attention on information diffusion is not significantly different between reports with good and bad news, and between the least and most readable filings, implying that there is insufficient evidence for the alternative explanation.

3.7.3 Intended attention

Our findings could still be explained by investors being more inclined to download a company filing if it is mentioned in the press. For instance, it could be the case that the report-date price is more informative not because more investors are reading the document on EDGAR but because the filing has higher news coverage. Moreover, before the mandatory disclosure of periodic financial statements through a 10-K or 10-Q report, it is not uncommon for firms to issue a press release to publicize their results. This preannouncement is consequently communicated to the SEC via an 8-K filing within four business days. Price discovery could already happen during the time window from the press release date until the report date, leading to a higher and smaller percentage of the 31-day CAR being released on and after the filing date, respectively. This return pattern coinciding with greater *OwnAtt* could be owing to investors wanting to confirm the information they have acquired earlier. The same evolution of abnormal returns could also result from a greater degree of news leakage to informed investors. Price swings arising from pre-report trades could then attract the attention of less informed agents, prompting them to read the mandatory disclosure when it is finally made public. Here, attention is caused by faster information diffusion and not the other way around.

We resolve these issues by exploiting the fact that the EDGAR Log File Data Set includes information on user requests that generate an error (i.e., the log file status code is 300 and above).

We can observe the IP addresses who attempt to view a filing but cannot do so before the trading day ends (e.g., because the EDGAR server is down).[13] We create a new variable called *Attempt*, which is defined as the quarterly decile rank of the company filing based on the number of IP addresses requesting to view it on the day it is made public. This variable is designed to control for *intended* attention, which, as explained previously, could be driven by the amount of news coverage of the filing or the presence of a press release before the report date. In the ensuing analysis, the variable of interest is the interaction of *Attempt* with *PctSuccess*, which is calculated as the number of users who successfully consult the filing at least once before the end of the trading day divided by the number of users who try to download it. Suppose the alternative mechanisms fully explain our results. In this case, *Attempt* will be positively associated with the speed of information transmission, whereas *Attempt* × *PctSuccess* will not have any relationship with it. Finding a positive and statistically significant impact of the interaction term on price discovery, conversely, implies that *actual* news-reading matters for information diffusion.

Using the whole sample period from February 14, 2003, to June 30, 2017, is not feasible as almost all user attempts to view a report are successful; the full-sample average of the percentage of fulfilled downloads is 97%, and its 17$^{\text{th}}$ percentile is equal to 1. Similar to Heilig et al. (2021), we focus on days when the EDGAR server is not as reliable at executing user requests. We take the mean of *PctSuccess* across all filings on a given day and keep the dates that are in the first decile of the average of *PctSuccess*. In this subsample, the mean fraction of successful attempts is 86%, and the median is 90%. We rerun the regression models employed in Column 8 of Table II, Column 2 of Table IV, and Column 8 of Table V while replacing *OwnAtt* with the interaction between *Attempt* and *PctSuccess*. The estimates are in Table X.

Columns 1, 4, and 7 show the results when *Attempt* × *PctSuccess* is first excluded from the specification. Owing to the high correlation (equal to 95%) between *Attempt* and the original attention measure *OwnAtt*, the former has the same impact on information transmission as the

[13]The first study that uses information on unfulfilled requests from the EDGAR Log File Data Set is that of Heilig et al. (2021), who consider an unexpected outage of the EDGAR server on April 24, 2017, to demonstrate that a higher share of failed attempts to download an SEC report leads to lower stock liquidity.

latter. Specifically, a higher value for intended information acquisition increases the fraction of the 31-day CAR observed on the filing date, decreases the fraction revealed after, and boosts report-date abnormal share turnover. Introducing $Attempt \times PctSuccess$ in the regressions, one observes that the coefficient of $Attempt \times CAR^{-10,20}$ loses its statistical significance in Columns 2 and 5, and that of *Attempt* even changes its sign in Column 8. This implies that if all user requests yield an error, then intended attention does not impact the rate at which information is impounded into prices. This finding is unaffected if we likewise account for the interaction between *Attempt* and the other control variables, as seen in Columns 3, 6, and 9. Conversely, the coefficients of the interaction term between *Attempt* and *PctSuccess* are statistically significant and are of the same sign as those of *OwnAtt* in the prior sections. This indicates that what matters for price discovery is actual news-reading, as in the definition of our attention measure, and not merely investors' intention to acquire information.

4 Concluding remarks

In this paper, we show that investor attention accelerates the process by which information contained in 8-K, 10-Q, and 10-K filings is impounded in prices. Measuring the level of attention an SEC report receives by the number of IP addresses viewing it on EDGAR, we document that attention increases the percentage of the filing-related long-term price response revealed on the publication date. Conversely, attention is negatively associated with the amount of information released on the succeeding days. These results are consistent with investors needing to pay attention to firm disclosures before processing their information content.

We further establish that the attention allocated to filings from other industries has the opposite effect. There is a greater delay in price discovery if investors are also attentive to reports of companies outside of a firm's sector. Therefore, the attention attracted by other disclosures can be considered a proxy for the extent to which the firm's investors are distracted. This attention appears to reduce the time and effort investors dedicate to processing the information they acquire about the company. We provide evidence that the significant explanatory power of distraction, even when direct attention is controlled for, can be attributed to investors still needing to allocate their limited information acquisition capacity among the news to which they choose to be attentive (i.e., among the filings in investors' *submenus*). In line with this two-step process, sharing the same submenu with more reports from other industries is associated with a weaker effect of attention on price revelation.

Our findings are robust to the inclusion of a slew of control variables, are valid for different subsamples formed on several firm and filing characteristics, and are not entirely due to managers' strategic timing of disclosures or the informativeness of publication-date prices leading investor attention. We further show that a firm disclosure's visibility is not driving our results, as what matters for price discovery is *actual* news-reading and not merely investors' *intention* to acquire information. The impact of our attention measure also does not depend on the degree of investor sophistication. Moreover, it is not subsumed by the previously documented effect of other information proxies based on search activity on Google and Bloomberg.

The significant negative impact of other industries' attention on the speed of information dissemination suggests the presence of a dimension of the information acquisition process not fully captured by attention proxies based on news-reading and news-searching activity. Future work could verify whether this effect also exists for other attention measures proposed in the literature. Moreover, the filing characteristics that determine the distribution of investors' information acquisition capacity among reports in their submenus could merit further investigation.

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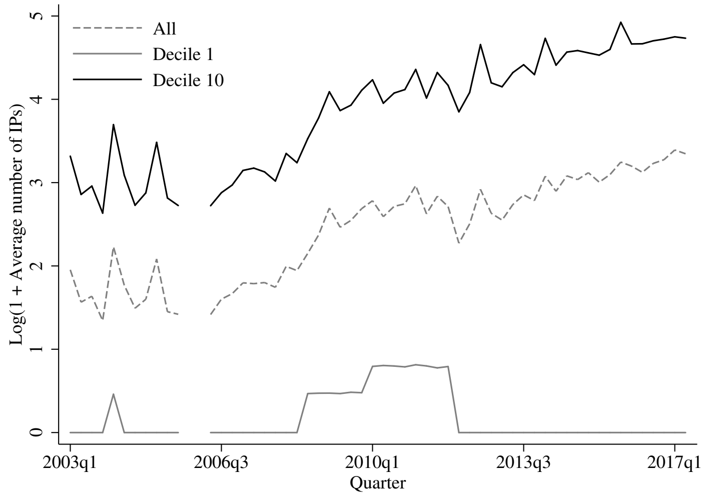


Figure 1

AVERAGE NUMBER OF IP ADDRESSES ON FILING DAY ACROSS QUARTERS

For each quarter from 2003Q1 to 2017Q2, this figure plots the log of one plus the mean number of IP addresses viewing an SEC report on the day it is filed. The dashed gray line takes the average over all filings in a specific quarter, while the solid black and gray lines do so for filings in, respectively, the top and the bottom deciles of the quarterly distribution of the number of EDGAR viewers on the filing date. Results are not reported for 2005Q4 and 2006Q1 since the original database has missing information for these quarters.

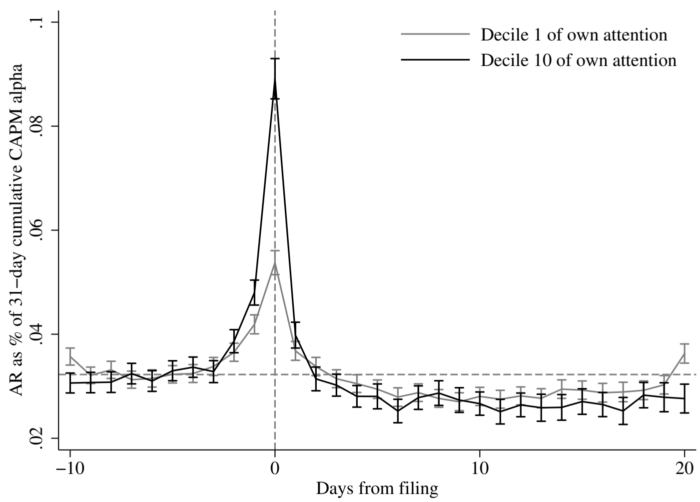


Figure 2

ATTENTION AND FRACTION OF 31-DAY CAR REVEALED AROUND THE FILING DATE

For s from -10 to 20, the figure contains the estimates for the ratio between the CAPM alpha s days from the filing date t and the 31-day cumulative CAPM alpha from $t-10$ to $t+20$. The solid black and gray lines are the estimates for SEC reports in, respectively, the top and the bottom deciles of the quarterly distribution of the number of EDGAR viewers on the filing date. The dashed gray horizontal line indicates the counterfactual value of the ratio if it were constant throughout the event window. The estimates for this ratio are the coefficients $\beta + \beta_s$ from the regression model in (4). Standard errors used for the 95% confidence intervals, shown as vertical bars around the point estimates, are two-way clustered at the firm and trading day levels.

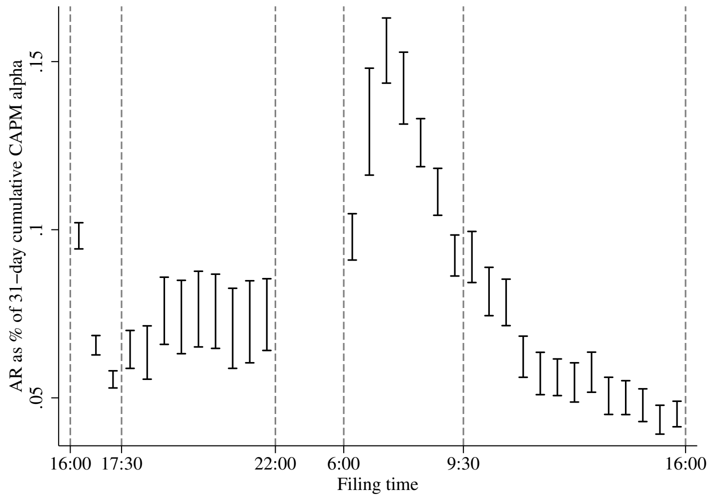


Figure 3

FILING TIME AND FRACTION OF 31-DAY CAR REVEALED ON THE FILING DATE

The figure displays the 95% confidence intervals for the ratio between the CAPM alpha on the filing date t and the 31-day cumulative CAPM alpha from $t-10$ to $t+20$ for each 30-minute time interval the SEC accepts filing submissions. The regression model used to estimate this ratio is similar to (4), but this time only considering abnormal returns on the filing day (i.e., $s=0$) and replacing the days-from-filing dummies with indicator variables for the 30-minute intervals. Standard errors are two-way clustered at the firm and trading day levels.

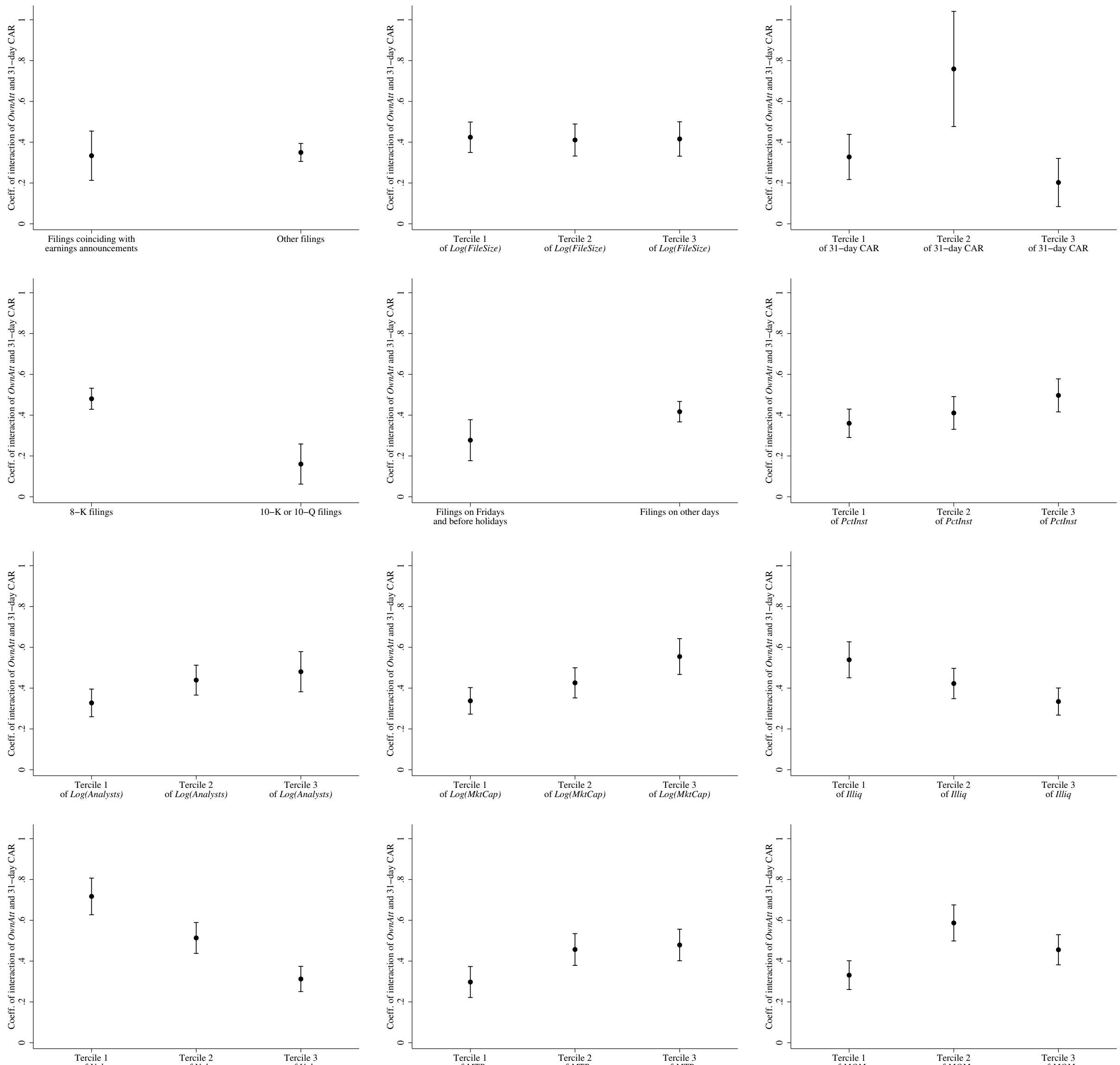


Figure 4

ATTENTION AND PRICE INFORMATIVENESS: ACROSS STOCK AND FILING CHARACTERISTICS

The plots display the estimates for γ, which is the effect of a one-decile increase in investor attention on the ratio between the CAPM alpha on the filing date t, expressed as a percentage, and the 31-day cumulative CAPM alpha from $t-10$ to $t+20$. Attention is the quarterly decile rank of the number of EDGAR viewers on t. The parameter γ is estimated employing the regression model in (5), while additionally incorporating filing time fixed effects, and allowing for the coefficient of the cumulative abnormal return to vary across firms, filing dates, and filing times. Filing time fixed effects are dummies for each 30-minute time interval SEC reports can be electronically filed. The reported estimates are from separate regressions on different subsets of reports formed according to firm and filing characteristics. See Panel A of Table I for the definition of the sorting variables. Standard errors used for the 95% confidence intervals, shown as vertical bars around the point estimates, are two-way clustered at the firm and filing date levels.

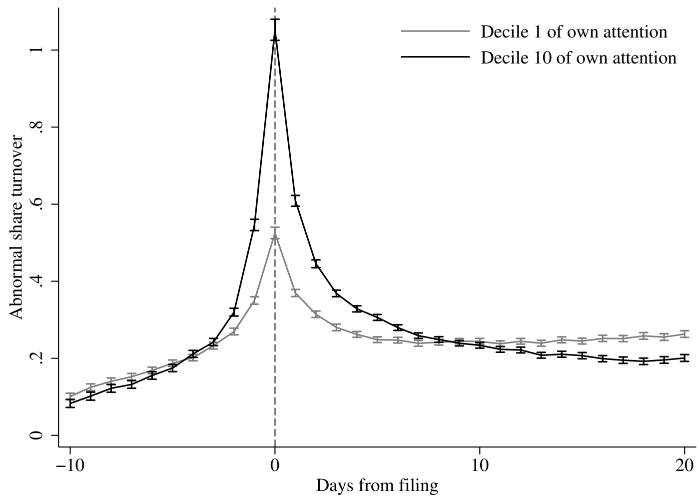
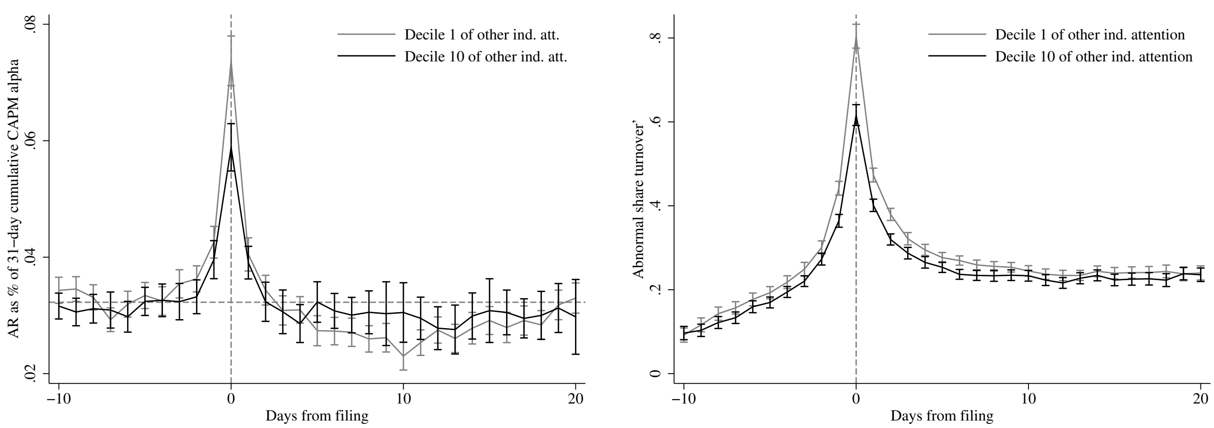


Figure 5

ATTENTION AND ABNORMAL SHARE TURNOVER AROUND THE FILING DATE

The figure contains the estimates for the average abnormal share turnover s days from the filing date t, where s goes from -10 to 20. Abnormal share turnover is share turnover on day $t+s$ as a percentage of the average share turnover on days $t-20$ to $t-11$, minus one. The solid black and gray lines are the estimates for SEC reports in, respectively, the top and the bottom deciles of the quarterly distribution of the number of EDGAR viewers on the filing date. The estimates are the coefficients λ_s from the regression model in (6). Standard errors used for the 95% confidence intervals, shown as vertical bars around the point estimates, are two-way clustered at the firm and trading day levels.



(a) Price informativeness

(b) Trading activity

Figure 6

ATTENTION TO SEC REPORTS FROM OTHER INDUSTRIES

For s from -10 to 20, Figure 6a contains the estimates for the ratio between the CAPM alpha s days from the filing date t and the 31-day cumulative CAPM alpha from $t-10$ to $t+20$. Figure 6b in turn reports the estimates for the average abnormal share turnover for each s. Abnormal share turnover is share turnover on day $t+s$ as a percentage of the average share turnover on days $t-20$ to $t-11$, minus one. The solid black and gray lines are the estimates for SEC reports in, respectively, the top and the bottom deciles of the quarterly distribution of the average number of EDGAR viewers of same-day filings from other industries. For Figure 6a, the estimates are the coefficients $\beta+\beta_s$ from the model in (4), while they are the coefficients λ_s from the model in (6) for Figure 6b. Standard errors used for the 95% confidence intervals, shown as vertical bars around the point estimates, are two-way clustered at the firm and trading day levels.

Table I

VARIABLE DEFINITIONS AND SUMMARY STATISTICS

Panel A lists the variables used in the empirical analysis, together with their definitions. Panel B shows the summary statistics for the 600,869 SEC reports from 6,459 firms that constitute the final sample. The variable means for low-attention (*OwnAtt* = 1) and high-attention (*OwnAtt* = 10) filings are also presented. The sample period is from February 14, 2003 to June 30, 2017.

Panel A: Variable definitions

Variable	Definition
NumIPs	Number of IP addresses viewing an SEC report on the filing date t
OwnAtt	Quarterly decile rank of *NumIPs*
AR	CAPM alpha, where the beta is estimated using the period from $t-70$ to $t-10$
CAR^{T_1,T_2}	Cumulative CAPM alpha from $t+T_1$ to $t+T_2$
AveShareTO	Average share turnover from $t-20$ to $t-11$; share turnover is daily traded volume divided by the average shares outstanding during the day
AbShareTO	Share turnover on t as percentage of *AveShareTO*, minus one
PctInst	Fraction of shares held by institutions based on their most recent 13-F filing, as of $t-10$
Analysts	Number of analysts in the previous month reporting forecasts of a stock's EPS for the current quarter, as of $t-10$
Log(Analysts)	Log of one plus *Analysts*
I(Friday)	Dummy variable for filings made public on Fridays or on days before holidays
NumFilers	Number of firms submitting an SEC report on t
NumFilersRank	Quarterly decile rank of *NumFilers*
MktCap	Previous daily closing price times the previous number of shares outstanding, as of $t-10$
Log(MktCap)	Log of *MktCap*
MTB	*MktCap* divided by the book value of common equity for the most recent quarter as of $t-10$
MOM	Cumulative daily raw return from $t-260$ to $t-11$
I(8K)	Dummy variable for 8-K and 8-K/A filings
I(Earnings)	Dummy variable for t with earnings announcements; value is also 1 for the day after
Illiq	Amihud's (2002) illiquidity measure, as of $t-10$
Vol	Standard deviation of the daily returns from $t-70$ to $t-11$
FileSize	File size of the SEC filing in kilobytes
Log(FileSize)	Log of *FileSize*
DSVI	Google's Daily Search Volume Index
ADSVI	Log of 1 plus *DSVI* minus the log of 1 plus the average *DSVI* in the previous 30 days
AIA	Dummy for when news searching and reading by Bloomberg users at at least one hour on t is above 94% of the past month's values (i.e., if the Bloomberg score is 3 or 4)
LowSoph	Quarterly decile rank of the number of IPs with low sophistication (those who view at most 20 filings in the past quarter)
MedSoph	Quarterly decile rank of the number of IPs with intermediate sophistication (those who view between 20 and 200 filings in the past quarter)
HighSoph	Quarterly decile rank of the number of IPs with high sophistication (those who view at least 200 filings in the past quarter)
NumIPsOthInd	Average *NumIPs* of firms from other industries that also file on t
OthIndAtt	Quarterly decile rank of *NumIPsOthInd*
NumFilersRankOthInd	Quarterly decile rank of the number of firms from other industries that also file on t
NumIPsOwnInd	Average *NumIPs* of firms from the same industry that also file on t
OwnIndAtt	Quarterly decile rank of *NumIPsOwnInd*
NumFilersRankOwnInd	Quarterly decile rank of the number of firms from the same industry that also file on t
NumFilersSameIPOthInd	Average number of SEC reports from other industries that are also read by the IP addresses who view a filing on t
SameIPOthInd	Quarterly decile rank of *NumFilersSameIPOthInd*
NumFilersSameIPOwnInd	Average number of SEC reports from the same industry that are also read by the IP addresses who view a filing on t
SameIPOwnInd	Quarterly decile rank of *NumFilersSameIPOwnInd*
Attempt	Quarterly decile rank of the number of IP addresses trying to view an SEC report on t
PctSuccess	Number of IP addresses who successfully view an SEC report divided by the number of IP addresses who attempt to download it on t

(Continued)

Table I–*Continued*

Panel B: Summary statistics

Variable	Full sample N = 600,869					$OwnAtt = 1$ N = 91,778	$OwnAtt = 10$ N = 61,504
	Mean	Median	SD	Min	Max	Mean	Mean
NumIPs	12.345	6	81.573	0	42,872	0.216	56.234
AR	0.000	0.000	0.035	−0.306	0.232	0.001	0.000
$CAR^{-10,20}$	0.000	0.002	0.130	−1.144	1.282	0.003	0.001
AbShareTO	0.721	0.151	1.747	−0.837	9.813	0.485	1.042
AveShareTO	0.886	0.638	0.815	0.046	4.341	0.702	1.184
PctInst	0.657	0.712	0.285	0.004	1.199	0.599	0.709
Analysts	7.698	6	6.904	0	30	6.049	11.582
I(Friday)	0.195	0	0.397	0	1	0.239	0.221
NumFilers	360.661	301	206.330	16	1,580	394.635	318.551
MktCap (billions)	5.515	0.799	16.249	0.024	121.704	3.814	15.421
MTB	3.222	2.019	4.037	0.370	29.074	2.853	3.615
MOM	0.153	0.089	0.520	−0.747	2.439	0.171	0.126
I(8K)	0.789	1	0.408	0	1	0.757	0.595
I(Earnings)	0.259	0	0.438	0	1	0.186	0.326
$Illiq \times 10^2$	0.079	0.003	0.309	0.000	2.459	0.116	0.037
Vol	0.024	0.022	0.011	0.008	0.059	0.023	0.024
FileSize (megabytes)	1.525	0.149	3.998	0.007	25.034	1.958	3.074

Table II

ATTENTION AND FRACTION OF INFORMATION REVEALED ON FILING DATE

This table reports the estimates from panel regressions of the filing-day abnormal return *AR* on the interaction of the attention measure *OwnAtt* with the 31-day cumulative abnormal return $CAR^{-10,20}$ around the filing date. The baseline specification with only firm and filing date fixed effects is under Column 1. Columns 2 to 8 add filing time fixed effects, which are dummies for each 30-minute time interval SEC reports can be electronically filed. The interactions of $CAR^{-10,20}$ with other measures of investor attention are introduced one by one in Columns 3 to 6, and all at the same time in Columns 7 and 8. In Column 8, the coefficient of $CAR^{-10,20}$ is allowed to vary across firms, filing dates, and filing times. The coefficients of the uninteracted terms are omitted to economize on space. All regressors are demeaned. The sample period is from February 14, 2003 to June 30, 2017. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable: AR (in %)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OwnAtt×CAR$^{-10,20}$	0.294***	0.293***	0.291***	0.287***	0.295***	0.294***	0.287***	0.396***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.022)
CAR$^{-10,20}$	9.260***	9.258***	9.191***	9.218***	9.253***	9.248***	9.184***	
	(0.094)	(0.094)	(0.092)	(0.093)	(0.094)	(0.100)	(0.097)	
PctInst×CAR$^{-10,20}$			2.627***				2.110***	0.433
			(0.199)				(0.203)	(0.320)
Log(Analysts)×CAR$^{-10,20}$				0.956***			0.694***	0.344***
				(0.082)			(0.084)	(0.123)
I(Friday)×CAR$^{-10,20}$					−0.861***		−0.833***	−0.871***
					(0.127)		(0.127)	(0.148)
NumFilersRank×CAR$^{-10,20}$						0.005	−0.008	
						(0.023)	(0.022)	
CAR$^{-10,20}$×CAR$^{-10,20}$	0.117	0.116	0.346	0.187	0.114	0.117	0.349	0.619
	(0.401)	(0.401)	(0.398)	(0.403)	(0.404)	(0.401)	(0.402)	(0.457)
|CAR$^{-10,20}$|×CAR$^{-10,20}$	−6.198***	−6.188***	−6.008***	−6.133***	−6.181***	−6.187***	−5.997***	−3.437***
	(0.408)	(0.408)	(0.410)	(0.409)	(0.410)	(0.408)	(0.412)	(0.448)
Log(MktCap)×CAR$^{-10,20}$	0.114**	0.115**	−0.105**	−0.241***	0.116**	0.115**	−0.319***	0.487***
	(0.045)	(0.045)	(0.046)	(0.054)	(0.045)	(0.045)	(0.054)	(0.108)
MTB×CAR$^{-10,20}$	0.006	0.006	0.019*	0.007	0.005	0.006	0.017	−0.010
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.016)
MOM×CAR$^{-10,20}$	0.047	0.046	0.197**	0.268***	0.047	0.047	0.329***	0.085
	(0.081)	(0.081)	(0.082)	(0.083)	(0.081)	(0.081)	(0.084)	(0.100)
I(8K)×CAR$^{-10,20}$	3.568***	3.566***	3.532***	3.515***	3.490***	3.576***	3.413***	3.480***
	(0.163)	(0.163)	(0.162)	(0.162)	(0.163)	(0.166)	(0.165)	(0.176)
I(Earnings)×CAR$^{-10,20}$	10.954***	10.955***	10.947***	10.979***	10.857***	10.945***	10.886***	10.151***
	(0.195)	(0.195)	(0.194)	(0.194)	(0.195)	(0.194)	(0.193)	(0.188)
Illiq×CAR$^{-10,20}$	−59.475***	−59.439***	−22.697	−34.905**	−58.481***	−59.357***	−11.326	−16.192
	(15.349)	(15.343)	(15.303)	(15.343)	(15.349)	(15.334)	(15.348)	(20.833)
Vol×CAR$^{-10,20}$	−84.347***	−84.345***	−84.281***	−90.730***	−84.168***	−84.350***	−88.732***	−49.699***
	(5.499)	(5.495)	(5.469)	(5.549)	(5.498)	(5.497)	(5.540)	(7.462)

(Continued)

Table II–*Continued*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log(FileSize)×$CAR^{-10,20}$	0.157***	0.157***	0.147***	0.141***	0.152***	0.156***	0.135***	0.122***
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.032)	(0.033)
Uninteracted terms	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm and date FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Filing time FE		Yes	Yes	Yes	Yes	Yes	Yes	
All FE×$CAR^{-10,20}$								Yes
Observations	600,869	600,869	600,869	600,869	600,869	600,869	600,869	600,869
Adjusted R^2	0.135	0.135	0.135	0.135	0.135	0.135	0.136	0.153

Table III

CONTROLLING FOR BLOOMBERG AND GOOGLE SEARCH ATTENTION MEASURES (RUSSELL 3000 STOCKS)

This table reports the estimates from panel regressions of the filing-day abnormal return *AR* of 1,973 stocks in the Russell 3000 Index on the interaction of three investor attention measures with the 31-day cumulative abnormal return $CAR^{-10,20}$ around the filing date. All specifications are with firm, filing date, and filing time fixed effects. Filing time fixed effects are dummies for each 30-minute time interval SEC reports can be electronically filed. Columns 1, 2, and 3 separately consider the interaction of $CAR^{-10,20}$ with, respectively, the EDGAR attention measure *OwnAtt*, the Bloomberg measure *AIA* and the Google measure *ADSVI*. Columns 4 and 5 account for the interactions terms of all three attention proxies. In Column 5, the coefficient of $CAR^{-10,20}$ is allowed to vary across firms, filing dates, and filing times. The coefficients of the uninteracted terms are omitted to economize on space. The control variables are as in Table II. All regressors are demeaned. The sample period is from February 16, 2010 to June 30, 2017. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable: AR (in %)	(1)	(2)	(3)	(4)	(5)
OwnAtt×$CAR^{-10,20}$	0.492^{***}			0.366^{***}	0.476^{***}
	(0.042)			(0.041)	(0.061)
AIA×$CAR^{-10,20}$		9.161^{***}		8.811^{***}	9.289^{***}
		(0.329)		(0.329)	(0.331)
ADSVI×$CAR^{-10,20}$			0.653^{***}	0.494^{***}	0.498^{***}
			(0.081)	(0.078)	(0.084)
$CAR^{-10,20}$	9.551^{***}	10.589^{***}	9.852^{***}	10.224^{***}	
	(0.213)	(0.225)	(0.217)	(0.218)	
Uninteracted terms	Yes	Yes	Yes	Yes	Yes
Filing controls×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes
Firm, date, and filing time FE	Yes	Yes	Yes	Yes	
All FE×$CAR^{-10,20}$					Yes
Observations	136,009	136,009	136,009	136,009	136,009
Adjusted R^2	0.176	0.188	0.174	0.190	0.212

Table IV

ATTENTION AND FRACTION OF INFORMATION REVEALED AFTER FILING

This table reports the estimates from panel regressions of the post-publication cumulative abnormal return $CAR^{1,T}$ on the interaction of the attention measure *OwnAtt* with the $T+11$-day cumulative abnormal return $CAR^{-10,T}$ around the filing date. Panel A considers the full sample, while Panel B examines 1,973 stocks in the Russell 3000 Index. For both panels, the event window ends $T = 20$ days after the filing date in Columns 1 and 2, while T is equal to 5, 10, 40, and 60 in Columns 3, 4, 5, and 6, respectively. All specifications have firm, filing date, and filing time fixed effects. Filing time fixed effects are dummies for each 30-minute time interval SEC reports can be electronically filed. In Columns 2 to 6 of Panels A and B, the coefficient of $CAR^{-10,20}$ is allowed to vary across firms, filing dates, and filing times. The coefficients of the uninteracted terms are omitted to economize on space. The control variables are as in Table II. All regressors are demeaned. The sample period is from February 14, 2003 to June 30, 2017 in Panel A and from February 16, 2010 to June 30, 2017 in Panel B. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full sample

Dependent variable: $CAR^{1,T}$ *(in %)*	$T=20$ (1)	$T=20$ (2)	$T=5$ (3)	$T=10$ (4)	$T=40$ (5)	$T=60$ (6)
OwnAtt×$CAR^{-10,T}$	-0.361^{***}	-0.544^{***}	-0.329^{***}	-0.473^{***}	-0.388^{***}	-0.313^{***}
	(0.036)	(0.043)	(0.040)	(0.043)	(0.037)	(0.033)
$CAR^{-10,T}$	56.667^{***}					
	(0.213)					
OwnAtt	Yes	Yes	Yes	Yes	Yes	Yes
Filing controls×$CAR^{-10,T}$	Yes	Yes	Yes	Yes	Yes	Yes
Firm, date, and filing time FE	Yes					
All FE×$CAR^{-10,T}$		Yes	Yes	Yes	Yes	Yes
Observations	600,869	600,869	600,869	600,869	595,688	590,837
Adjusted R^2	0.616	0.627	0.341	0.473	0.768	0.832

Panel B: Russell 3000 stocks from February 2010

Dependent variable: $CAR^{1,T}$ *(in %)*	$T=20$ (1)	$T=20$ (2)	$T=5$ (3)	$T=10$ (4)	$T=40$ (5)	$T=60$ (6)
OwnAtt×$CAR^{-10,T}$	-0.507^{***}	-0.621^{***}	-0.417^{***}	-0.492^{***}	-0.485^{***}	-0.447^{***}
	(0.084)	(0.120)	(0.104)	(0.120)	(0.106)	(0.094)
AIA×$CAR^{-10,T}$	-2.945^{***}	-3.540^{***}	0.291	-1.854^{***}	-3.162^{***}	-2.947^{***}
	(0.536)	(0.523)	(0.507)	(0.552)	(0.452)	(0.403)
ADSVI×$CAR^{-10,T}$	-0.440^{***}	-0.417^{***}	-0.137	-0.237	-0.369^{***}	-0.411^{***}
	(0.145)	(0.143)	(0.132)	(0.156)	(0.133)	(0.119)
$CAR^{-10,T}$	55.641^{***}					
	(0.469)					
Uninteracted terms	Yes	Yes	Yes	Yes	Yes	Yes
Filing controls×$CAR^{-10,T}$	Yes	Yes	Yes	Yes	Yes	Yes
Firm, date, and filing time FE	Yes					
All FE×$CAR^{-10,T}$		Yes	Yes	Yes	Yes	Yes
Observations	136,009	136,009	136,009	136,009	135,889	135,788
Adjusted R^2	0.580	0.601	0.330	0.449	0.746	0.813

Table V

Attention and abnormal share turnover

This table reports the estimates from panel regressions of the filing-day abnormal share turnover *AbShareTO* on the attention measure *OwnAtt*. Panel A considers the full sample, while Panel B examines 1,973 stocks in the Russell 3000 Index. In Panel A, the baseline specification with only firm and filing date fixed effects is under Column 1. Column 2 to 8 add filing time fixed effects, which are dummies for each 30-minute time interval SEC reports can be electronically filed. Other measures of investor attention are introduced one by one in Columns 3 to 6, and all at the same time in Columns 7 and 8. Columns 6 and 7 exclude filing date fixed effects so that *NumFilersRank* is not dropped from the regression. In Panel B, all specifications are with firm, filing date, and filing time fixed effects. Columns 1, 2, and 3 separately consider the EDGAR attention measure *OwnAtt*, the Bloomberg measure *AIA* and the Google measure *ADSVI*, respectively. Column 4 accounts for all three attention proxies. The control variables are as in Panel A. All regressors in both panels are demeaned. The sample period is from February 14, 2003 to June 30, 2017 in Panel A and from February 16, 2010 to June 30, 2017 in Panel B. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full sample

Dependent variable: AbShareTO	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OwnAtt	0.057***	0.071***	0.071***	0.071***	0.071***	0.063***	0.064***	0.071***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
PctInst			−0.124***				−0.136***	−0.136***
			(0.020)				(0.024)	(0.020)
Log(Analysts)				0.025***			0.028***	0.032***
				(0.008)			(0.009)	(0.008)
I(Friday)					−0.101***		−0.119***	−0.101***
					(0.008)		(0.010)	(0.008)
NumFilersRank						0.004*	0.004*	
						(0.002)	(0.002)	
$CAR^{-10,20}$	0.339***	0.334***	0.333***	0.335***	0.334***	0.348***	0.346***	0.333***
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.029)	(0.029)	(0.027)
$\lvert CAR^{-10,20}\rvert$	2.405***	2.393***	2.392***	2.391***	2.391***	2.394***	2.396***	2.390***
	(0.048)	(0.047)	(0.047)	(0.047)	(0.047)	(0.050)	(0.050)	(0.047)
Log(MktCap)	−0.071***	−0.073***	−0.064***	−0.082***	−0.074***	−0.075***	−0.071***	−0.075***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
MTB	0.004***	0.004***	0.003***	0.004***	0.004***	0.004***	0.004***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
MOM	0.009	0.010	0.007	0.015**	0.010	0.017**	0.015**	0.013**
	(0.006)	(0.006)	(0.006)	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)
I(8K)	0.515***	0.512***	0.512***	0.512***	0.507***	0.470***	0.461***	0.507***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.014)	(0.014)	(0.011)
I(Earnings)	1.146***	1.111***	1.111***	1.111***	1.106***	1.119***	1.106***	1.105***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Illiq	21.965***	22.211***	21.874***	22.470***	22.196***	23.325***	23.291***	22.162***
	(1.942)	(1.941)	(1.944)	(1.944)	(1.941)	(1.951)	(1.954)	(1.946)
Vol	−23.637***	−23.872***	−23.875***	−23.960***	−23.894***	−22.045***	−22.008***	−24.011***
	(0.551)	(0.551)	(0.551)	(0.553)	(0.552)	(0.609)	(0.613)	(0.553)
Log(FileSize)	0.037***	0.031***	0.031***	0.031***	0.030***	0.031***	0.031***	0.030***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	Yes	Yes	Yes	Yes			Yes
Filing time FE		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	600,869	600,869	600,869	600,869	600,869	600,869	600,869	600,869
Adjusted R^2	0.202	0.206	0.206	0.206	0.206	0.183	0.184	0.206

(Continued)

Table V–*Continued*

Panel B: Russell 3000 stocks from February 2010

Dependent variable: AbShareTO	(1)	(2)	(3)	(4)
OwnAtt	0.075***			0.059***
	(0.003)			(0.003)
AIA		0.781***		0.748***
		(0.018)		(0.017)
ADSVI			0.046***	0.038***
			(0.003)	(0.003)
Filing controls	Yes	Yes	Yes	Yes
Firm, date, and filing time FE	Yes	Yes	Yes	Yes
Observations	136,009	136,009	136,009	136,009
Adjusted R^2	0.309	0.338	0.302	0.344

Table VI

ATTENTION AND INVESTOR SOPHISTICATION

The first eight columns report the estimates from panel regressions of either the filing-day abnormal return *AR* (Columns 1 to 4) or the post-publication cumulative abnormal return $CAR^{1,20}$ (Columns 5 to 8) on the interaction terms of three attention measures with the 31-day cumulative abnormal return $CAR^{-10,20}$ around the filing date. The variable *LowSoph* is the proxy for the attention of investors with low sophistication, while *MedSoph* and *HighSoph* are for investors with intermediate and high sophistication, respectively. Investors that download at most 20 filings in the previous quarter are considered to have low sophistication, those that view between 20 and 200 filings have intermediate sophistication, while those that consult at least 200 filings have high sophistication. Columns 9 to 12 present the estimates from panel regressions of the filing-day abnormal share turnover *AbShareTO* on the three attention measures. All specifications have firm, filing date, and filing time fixed effects. Filing time fixed effects are dummies for each 30-minute time interval SEC reports can be electronically filed. Columns 1 to 8 allow $CAR^{-10,20}$ to vary across the three fixed effects dimensions. The control variables are as in Tables II (Columns 1 to 8) and V (Columns 9 to 12). All regressors are demeaned. The sample period is from February 14, 2003 to June 30, 2017. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable:	*AR (in %)*				$CAR^{1,20}$ *(in %)*				*AbShareTO*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LowSoph×$CAR^{-10,20}$	0.230***			0.155***	−0.341***			−0.240***				
	(0.016)			(0.017)	(0.033)			(0.035)				
LowSoph	−0.010***			−0.009***	0.009***			0.011***	0.040***			0.025***
	(0.002)			(0.002)	(0.003)			(0.003)	(0.001)			(0.001)
MedSoph×$CAR^{-10,20}$		0.267***		0.180***		−0.373***		−0.247***				
		(0.019)		(0.019)		(0.037)		(0.040)				
MedSoph		−0.007***		−0.004*		0.002		−0.000		0.048***		0.031***
		(0.002)		(0.002)		(0.004)		(0.004)		(0.001)		(0.001)
HighSoph×$CAR^{-10,20}$			0.215***	0.112***			−0.296***	−0.146***				
			(0.019)	(0.019)			(0.038)	(0.040)				
HighSoph			−0.006***	−0.002			−0.002	−0.005			0.045***	0.027***
			(0.002)	(0.002)			(0.004)	(0.004)			(0.001)	(0.001)
Filing controls×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
All FE×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Filing controls									Yes	Yes	Yes	Yes
Firm, date, and filing time FE									Yes	Yes	Yes	Yes
Observations	590,758	590,758	590,758	590,758	590,758	590,758	590,758	590,758	590,758	590,758	590,758	590,758
Adjusted R^2	0.153	0.153	0.153	0.154	0.627	0.627	0.627	0.627	0.204	0.205	0.204	0.208

Table VII

ATTENTION TO OTHER SEC REPORTS

The first two panels report the estimates from panel regressions of either the filing-day abnormal return *AR* (Panel A) or the post-publication cumulative abnormal return $CAR^{1,20}$ (Panel B) on the interaction of the attention measures *OthIndAtt* and *OwnIndAtt* with the 31-day cumulative abnormal return $CAR^{-10,20}$ around the filing date. Panel C presents the estimates from panel regressions of the filing-day abnormal share turnover *AbShareTO* on *OthIndAtt* and *OwnIndAtt*. All specifications have firm, filing date, and filing time fixed effects. Filing time fixed effects are dummies for each 30-minute time interval SEC reports can be electronically filed. Panels A and B allow $CAR^{-10,20}$ to vary across the three fixed effects dimensions. Across all panels, Columns 1 and 4 consider the effect of *OthIndAtt*, while Columns 2 and 5 account for the impact of *OwnIndAtt*. Both proxies are incorporated in the regression models used for Columns 3 and 6. The last three columns control for the average characteristics of filings from other industries and from the same industry. The coefficients of the uninteracted terms in Panels A and B are omitted to economize on space. The control variables are as in Tables II (Panels A and B) and V (Panel C). All regressors are demeaned. The sample period is from February 14, 2003 to June 30, 2017. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Fraction of information revealed on filing date

Dependent variable: AR (in %)	(1)	(2)	(3)	(4)	(5)	(6)
OwnAtt×$CAR^{-10,20}$	0.389***	0.391***	0.393***	0.386***	0.386***	0.386***
	(0.022)	(0.023)	(0.023)	(0.022)	(0.023)	(0.023)
OthIndAtt×$CAR^{-10,20}$	−0.262***		−0.295***	−0.239**		−0.241**
	(0.095)		(0.107)	(0.097)		(0.108)
OwnIndAtt×$CAR^{-10,20}$		0.016	−0.021		0.034	−0.008
		(0.023)	(0.026)		(0.025)	(0.027)
Uninteracted terms	Yes	Yes	Yes	Yes	Yes	Yes
NumFilersOthInd×$CAR^{-10,20}$	Yes		Yes	Yes		Yes
NumFilersOwnInd×$CAR^{-10,20}$		Yes	Yes		Yes	Yes
Filing controls×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes	Yes
All FE×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes	Yes
Ave. char. of other ind. filings×$CAR^{-10,20}$				Yes		Yes
Ave. char. of own ind. filings×$CAR^{-10,20}$					Yes	Yes
Observations	599,881	599,881	599,881	599,881	599,881	599,881
Adjusted R^2	0.153	0.153	0.153	0.153	0.153	0.153

Panel B: Fraction of information revealed after filing date

Dependent variable: $CAR^{1,20}$ (in %)	(1)	(2)	(3)	(4)	(5)	(6)
OwnAtt×$CAR^{-10,20}$	−0.531***	−0.525***	−0.530***	−0.529***	−0.523***	−0.527***
	(0.043)	(0.044)	(0.044)	(0.043)	(0.044)	(0.044)
OthIndAtt×$CAR^{-10,20}$	0.583***		0.568**	0.716***		0.715***
	(0.204)		(0.233)	(0.202)		(0.231)
OwnIndAtt×$CAR^{-10,20}$		−0.081*	−0.008		−0.072	0.004
		(0.047)	(0.054)		(0.050)	(0.057)
Uninteracted terms	Yes	Yes	Yes	Yes	Yes	Yes
NumFilersOthInd×$CAR^{-10,20}$	Yes		Yes	Yes		Yes
NumFilersOwnInd×$CAR^{-10,20}$		Yes	Yes		Yes	Yes
Filing controls×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes	Yes
All FE×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes	Yes
Ave. char. of other ind. filings×$CAR^{-10,20}$				Yes		Yes
Ave. char. of own ind. filings×$CAR^{-10,20}$					Yes	Yes
Observations	599,881	599,881	599,881	599,881	599,881	599,881
Adjusted R^2	0.627	0.627	0.627	0.627	0.627	0.627

(Continued)

Table VII–*Continued*

Panel C: Abnormal share turnover

Dependent variable: AbShareTO	(1)	(2)	(3)	(4)	(5)	(6)
OwnAtt	0.070***	0.069***	0.069***	0.070***	0.069***	0.069***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
OthIndAtt	−0.053***		−0.042***	−0.042***		−0.028***
	(0.005)		(0.006)	(0.005)		(0.006)
OwnIndAtt		0.011***	0.006***		0.012***	0.006***
		(0.001)	(0.001)		(0.001)	(0.001)
NumFilersOthInd	Yes		Yes	Yes		Yes
NumFilersOwnInd		Yes	Yes		Yes	Yes
Filing controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm, date, and filing time FE	Yes	Yes	Yes	Yes	Yes	Yes
Ave. char. of other ind. filings				Yes		Yes
Ave. char. of own ind. filings					Yes	Yes
Observations	599,881	599,881	599,881	599,881	599,881	599,881
Adjusted R^2	0.206	0.206	0.206	0.207	0.206	0.207

Table VIII

ATTENTION AND THE NUMBER OF SEC REPORTS VIEWED BY THE SAME IP ADDRESS

The first four columns report the estimates from panel regressions of either the filing-day abnormal return *AR* (Columns 1 and 2) or the post-publication cumulative abnormal return $CAR^{1,20}$ (Columns 3 and 4) on the triple interaction of (i) the attention measure *OwnAtt*, (ii) the 31-day cumulative abnormal return $CAR^{-10,20}$ around the filing date, and (iii) the average number *SameIPOthInd* or *SameIPOwnInd* of SEC reports viewed by the same IP address. Columns 5 and 6 present the estimates from panel regressions of the filing-day abnormal share turnover *AbShareTO* on the interaction of *OwnAtt* with *SameIPOthInd* or *SameIPOwnInd*. All specifications have firm, filing date, and filing time fixed effects. Filing time fixed effects are dummies for each 30-minute time interval SEC reports can be electronically filed. Columns 1 to 4 allow $CAR^{-10,20}$ to vary across the three fixed effects dimensions. Columns 1, 3, and 5 consider the effect of *SameIPOthInd*. Both *SameIPOthInd* and *SameIPOwnInd* are incorporated in the regression models used for Columns 2, 4, and 6. The control variables are as in Tables II (Columns 1 to 4) and V (Columns 5 and 6). All regressors are demeaned. The sample period is from February 14, 2003 to June 30, 2017. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable:	*AR (in %)*		$CAR^{1,20}$ *(in %)*		*AbShareTO*	
	(1)	(2)	(3)	(4)	(5)	(6)
OwnAtt×$CAR^{-10,20}$	0.470***	0.455***	−0.719***	−0.689***		
	(0.026)	(0.037)	(0.055)	(0.075)		
OwnAtt	−0.017***	−0.019***	0.010*	0.010	0.093***	0.096***
	(0.003)	(0.004)	(0.006)	(0.007)	(0.002)	(0.002)
OwnAtt×SameIPOthInd×$CAR^{-10,20}$	−0.063***	−0.063***	0.080***	0.077***		
	(0.007)	(0.007)	(0.014)	(0.015)		
OwnAtt×SameIPOthInd	0.002***	0.002***	0.000	−0.000	−0.011***	−0.012***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)
OwnAtt×SameIPOwnInd×$CAR^{-10,20}$		0.000		0.006		
		(0.007)		(0.013)		
OwnAtt×SameIPOwnInd		−0.000		0.001		0.002***
		(0.001)		(0.001)		(0.000)
SameIPOthInd×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
SameIPOwnInd×$CAR^{-10,20}$		Yes		Yes		
OwnAtt×NumFilersRankOthInd×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
OwnAtt×NumFilersRankOwnInd×$CAR^{-10,20}$		Yes		Yes		
Filing controls×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
All FE×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
SameIPOthInd					Yes	Yes
SameIPOwnInd						Yes
OwnAtt×NumFilersRankOthInd					Yes	Yes
OwnAtt×NumFilersRankOwnInd						Yes
Filing controls					Yes	Yes
Firm, date, and filing time FE					Yes	Yes
Observations	522,870	522,870	522,870	522,870	522,870	522,870
Adjusted R^2	0.158	0.158	0.627	0.627	0.219	0.220

Table IX

ATTENTION TO SEC REPORTS FILED OUTSIDE OF TRADING HOURS

In this table, we focus on reports that are accepted by the SEC during the 17.5-hour period from 3:50 PM to 9:30 AM prior to the opening of stock exchanges. Variables that use the EDGAR server data are calculated by taking into account the views that are registered before exchanges open. In Panel A, the first four columns report the estimates from panel regressions of either the filing-day abnormal return *AR* (Columns 1 and 2) or the post-publication cumulative abnormal return $CAR^{1,20}$ (Columns 3 and 4) on the interaction of the attention measures *OthIndAtt* and *OwnIndAtt* with the 31-day cumulative abnormal return $CAR^{-10,20}$ around the filing date. Columns 5 and 6 present the estimates from panel regressions of the filing-day abnormal share turnover *AbShareTO* on *OthIndAtt* and *OwnIndAtt*. On the other hand, the first four columns in Panel B report the estimates from panel regressions of either *AR* (Columns 1 and 2) or $CAR^{1,20}$ (Columns 3 and 4) on the triple interaction of (i) *OwnAtt*, (ii) $CAR^{-10,20}$, and (iii) the average number *SameIPOthInd* or *SameIPOwnInd* of SEC reports viewed by the same IP address. Columns 5 and 6 present the estimates from panel regressions of *AbShareTO* on the interaction of *OwnAtt* with *SameIPOthInd* or *SameIPOwnInd*. All specifications have firm, filing date, and filing time fixed effects. Filing time fixed effects are dummies for each 30-minute time interval SEC reports can be electronically filed. Columns 1 to 4 in both panels allow $CAR^{-10,20}$ to vary across the three fixed effects dimensions. In Panel A, the odd-numbered columns consider the effect of *OthIndAtt*, while the even-numbered columns account for the impact of both *OthIndAtt* and *OwnIndAtt*. The odd-numbered columns in Panel B consider the effect of *SameIPOthInd*, whereas both *SameIPOthInd* and *SameIPOwnInd* are incorporated in the regression models used for the even-numbered columns. Panel A additionally controls for the average characteristics of filings from other industries and from the same industry. The control variables are as in Tables II (Columns 1 to 4 of both panels) and V (Columns 5 and 6 of both panels). All regressors are demeaned. The sample period is from February 14, 2003 to June 30, 2017. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Effect of attention to other SEC reports

Dependent variable:	*AR (in %)*		$CAR^{1,20}$ *(in %)*		*AbShareTO*	
	(1)	(2)	(3)	(4)	(5)	(6)
OwnAtt×$CAR^{-10,20}$	0.146***	0.153***	−0.377***	−0.329***		
	(0.027)	(0.028)	(0.050)	(0.054)		
OwnAtt	−0.015***	−0.015***	0.008	0.005	0.046***	0.044***
	(0.003)	(0.003)	(0.005)	(0.005)	(0.002)	(0.002)
OthIndAtt×$CAR^{-10,20}$	−0.207*	−0.258*	0.274	0.241***		
	(0.116)	(0.132)	(0.222)	(0.069)		
OthIndAtt	−0.001	−0.004	−0.000	−0.034***	−0.039***	−0.028***
	(0.014)	(0.015)	(0.027)	(0.009)	(0.006)	(0.007)
OwnIndAtt×$CAR^{-10,20}$		−0.034		−0.013		
		(0.034)		(0.059)		
OwnIndAtt		−0.001		−0.003		0.006***
		(0.004)		(0.007)		(0.002)
NumFilersRankOthInd×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
NumFilersRankOwnInd×$CAR^{-10,20}$		Yes		Yes		
Filing controls×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
All FE×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
Ave. char. of other ind. filings×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
Ave. char. of own ind. filings×$CAR^{-10,20}$		Yes		Yes		
NumFilersRankOthInd					Yes	Yes
NumFilersRankOwnInd						Yes
Filing controls					Yes	Yes
Firm, date, and filing time FE					Yes	Yes
Ave. char. of other ind. filings					Yes	Yes
Ave. char. of own ind. filings						Yes
Observations	422,691	422,691	422,691	422,691	422,691	422,691
Adjusted R^2	0.167	0.168	0.628	0.610	0.218	0.218

(Continued)

Table IX–*Continued*

Panel B: Effect of the number of SEC reports viewed by the same IP address

Dependent variable:	*AR (in %)*		*$CAR^{1,20}$ (in %)*		*AbShareTO*	
	(1)	(2)	(3)	(4)	(5)	(6)
OwnAtt×$CAR^{-10,20}$	0.239***	0.224***	−0.619***	−0.615***		
	(0.035)	(0.047)	(0.069)	(0.090)		
OwnAtt	−0.017***	−0.018***	0.005	0.009	0.073***	0.076***
	(0.004)	(0.005)	(0.007)	(0.010)	(0.002)	(0.003)
OwnAtt×SameIPOthInd×$CAR^{-10,20}$	−0.039***	−0.040***	0.078***	0.077***		
	(0.008)	(0.009)	(0.018)	(0.019)		
OwnAtt×SameIPOthInd	0.003***	0.003***	0.000	−0.000	−0.009***	−0.010***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.000)	(0.000)
OwnAtt×SameIPOwnInd×$CAR^{-10,20}$		0.004		0.002		
		(0.008)		(0.017)		
OwnAtt×SameIPOwnInd		−0.001		0.001		0.001***
		(0.001)		(0.002)		(0.000)
SameIPOthInd×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
SameIPOwnInd×$CAR^{-10,20}$		Yes		Yes		
OwnAtt×NumFilersRankOthInd×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
OwnAtt×NumFilersRankOwnInd×$CAR^{-10,20}$		Yes		Yes		
Filing controls×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
All FE×$CAR^{-10,20}$	Yes	Yes	Yes	Yes		
SameIPOthInd					Yes	Yes
SameIPOwnInd						Yes
OwnAtt×NumFilersRankOthInd					Yes	Yes
OwnAtt×NumFilersRankOwnInd						Yes
Filing controls					Yes	Yes
Firm, date, and filing time FE					Yes	Yes
Observations	328,268	328,268	328,268	328,268	328,268	328,268
Adjusted R^2	0.165	0.165	0.628	0.628	0.237	0.237

Table X

INTENDED ATTENTION AND THE PERCENTAGE OF SUCCESSFUL VIEWING ATTEMPTS

This table focuses on days from February 14, 2003 to June 30, 2017 when the average percentage of successful viewing attempts (*PctSuccess*) across all filings is in the first decile. The first six columns report the estimates from panel regressions of either the filing-day abnormal return *AR* (Columns 1 to 3) or the post-publication cumulative abnormal return $CAR^{1,20}$ (Columns 4 to 6) on the triple interaction of *PctSuccess*, the number *Attempt* of IP addresses who try to view the filing, and the 31-day cumulative abnormal return $CAR^{-10,20}$ around the filing date. Columns 7 to 9 present the estimates from panel regressions of the filing-day abnormal share turnover *AbShareTO* on the interaction between *PctSuccess* and *Attempt*. All specifications have firm, filing date, and filing time fixed effects. Filing time fixed effects are dummies for each 30-minute time interval SEC reports can be electronically filed. Columns 1 to 6 allow $CAR^{-10,20}$ to vary across the three fixed effects dimensions. Columns 1, 4, and 7 consider the effect of *Attempt* without the interaction with *PctSuccess*. The interaction term is introduced in Columns 2, 5, and 8. Columns 3, 6, and 9 further incorporate the interaction of *Attempt* with the other control variables. The control variables are as in Tables II (Columns 1 to 6) and V (Columns 7 to 9). All regressors, except *PctSuccess*, are demeaned. Standard errors that are two-way clustered at the firm and filing date levels are shown in parentheses below the point estimates. The superscripts *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable:	*AR (in %)*			$CAR^{1,20}$ *(in %)*			*AbShareTO*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Attempt×$CAR^{-10,20}$	0.799***	−0.374	−0.161	−0.556**	1.106	0.908			
	(0.111)	(0.451)	(0.492)	(0.230)	(0.800)	(0.839)			
Attempt	0.004	0.034	0.027	0.016	0.017	−0.012	0.107***	−0.043**	−0.070***
	(0.010)	(0.039)	(0.043)	(0.019)	(0.067)	(0.074)	(0.006)	(0.018)	(0.020)
Attempt×PctSuccess×$CAR^{-10,20}$		1.364***	1.156**		−1.937**	−1.919**			
		(0.515)	(0.537)		(0.934)	(0.967)			
Attempt×PctSuccess		−0.032	−0.001		−0.003	−0.008		0.172***	0.187***
		(0.044)	(0.046)		(0.078)	(0.081)		(0.023)	(0.024)
PctSuccess×$CAR^{-10,20}$		1.345	1.866		−1.945	−2.088			
		(1.524)	(1.524)		(2.684)	(2.698)			
PctSuccess		−0.296*	−0.298*		0.070	0.109		0.416***	0.455***
		(0.151)	(0.154)		(0.246)	(0.252)		(0.067)	(0.070)
Controls×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes	Yes			
Attempt×Controls×$CAR^{-10,20}$			Yes			Yes			
All FE×$CAR^{-10,20}$	Yes	Yes	Yes	Yes	Yes	Yes			
Controls							Yes	Yes	Yes
Attempt×Controls									Yes
Firm, date, and filing time FE							Yes	Yes	Yes
Observations	47,359	47,359	47,359	47,359	47,359	47,359	47,359	47,359	47,359
Adjusted R^2	0.196	0.196	0.197	0.651	0.651	0.651	0.263	0.265	0.268