Cater to Thy Client: Analyst Responsiveness to Institutional Investor Attention

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Abstract

We study how institutional investor attention to a firm affects the timeliness of analysts' forecasts for that firm. We measure abnormal institutional attention (AIA) using Bloomberg news search activity for the firm on earnings announcement days. We find that analysts issue more timely forecasts when AIA is high on the earnings announcement day. Analyst responsiveness to AIA is stronger when analysts have more resources and experience and weaker when the AIA of other covered firms is high. Analysts who respond more to AIA are more likely to be named all-star analysts and less likely to be demoted to a smaller brokerage. We address endogeneity concerns using a measure of expected AIA that is unaffected by concurrent information. Our findings suggest that responsiveness to institutional attention influences the production of analyst research and analysts' career outcomes.

1. Introduction

Financial analysts play a prominent role in capital markets by analyzing information about firms and providing their analyses to investors.[1] The literature has examined the properties of analyst outputs, but little is known about what analysts do and how they add value for investors (Bradshaw 2011; Lo 2012). One aspect of an analyst's job that both analysts and their institutional clients consider essential is timely responsiveness to institutional investors' information needs, but research has not investigated this (Bradshaw 2011; Brown, Call, Clement, and Sharp 2015). We study this *timeliness* dimension of institutional investors' demand for analyst services, investigating whether institutional investor search for information affects analyst production of timely research. We also investigate whether timeliness and responsiveness affect analysts' professional welfare.

Time is an essential and limited resource for analysts. Analysts work extremely long hours, and their workload is highest during earnings announcement seasons (Bradshaw, Ertimur, and O'Brien 2017). In addition to producing research documents, they spend significant time on other tasks, including calls and meetings with clients, maintaining relationships with the firms they cover, and meeting with the sales and trading departments within their brokerages. In this environment, analysts are likely to produce timely research when their clients need it most.

Institutional investors are the main clients of analysts and their employers (i.e., brokerages). Analyst surveys indicate that hedge funds, mutual funds, and pension funds are analysts' three most important clients, while retail investors are the least important (Brown et

[1] For recent reviews of the literature on the role of analysts as information intermediaries, see Beyer, Cohen, Lys, and Walther (2010); Bradshaw (2011); and Kothari, So, and Verdi (2016).

al. 2015). Analysts also say that client votes and analyst rankings, which are determined by institutional investors' assessment of the value added by analysts, are key determinants of analyst compensation and career advancement. Given these financial incentives, analysts are likely to cater to the information needs of institutional investors.

Providing research to institutional investors when they need the information for trading decisions is an essential way for analysts to add value for their clients. The importance of analyst accuracy has been studied extensively in archival research (e.g., Mikhail, Walther, and Willis 1999; Hong and Kubik 2003). However, surveys of analysts and institutional investors suggest that the timeliness of analysts' responses to clients' requests for information is even more critical than accuracy. The evidence of Foucault, Hombert, and Rosu (2016) shows that high-speed news drives a significant portion of institutional trades, and the New York Attorney General Schneiderman has remarked that high-speed news is more important than news accuracy.[2] Respondents to the annual *Institutional Investor* survey, which determines the all-star analyst rankings, consistently rate responsiveness as one of the most valuable analyst traits (Bradshaw 2011). Similarly, the majority of surveyed analysts state that responsiveness is "very important" to their compensation (Brown et al. 2015).[3] Regarding the need to quickly respond to clients, one analyst made the following comment (Spence et al. 2019).

You can be a top-ranked analyst even if you are wrong 50% of the time. […]

[2] "High-frequency traders do not care if information is accurate or inaccurate. They just want to know what is coming out on the market that might sway public sentiment. This is all just about what might move the market, because they are in and out in milliseconds." Speech by New York Attorney General Schneiderman, "High-Frequency Trading and Insider Trading 2.0," March 18, 2014, available at: https://ag.ny.gov/pdfs/HFT_and_market_structure.pdf.

[3] Other analyst traits that institutional investors and analysts consider important include industry knowledge, professional integrity, access to management, and written reports.

> identifying stories, marketing the stories very well and then finally being very, very service-oriented in the sense of, you know, when there comes a request you respond very quickly and willingly, etc., etc. That is the person who is scoring well internally and externally in polls […]

Professional platforms, such as Bloomberg terminals, are a prominent channel through which institutional investors search for company information.[4] Many institutions rely on these platforms to search for financial information, analyze securities, and execute trades. Thus search activity on these platforms reveals their efforts to obtain information. Following Ben-Rephael, Da, and Israelsen (2017), we refer to institutions' search for information as *institutional investor attention* (Ben-Rephael, Da, and Israelsen 2017).[5]

We collect data on institutional attention at the firm-day level from Bloomberg terminals. The institutional attention measure reflects the number of times Bloomberg terminal users searched for or accessed news articles about a specific stock on a particular day, relative to the search activity for the same stock in the previous 30 days. We use abnormal search activity around earnings announcements to increase the likelihood that investors are seeking financial information.

Consistent with our predictions, we find that analysts are more likely to produce timely forecasts (i.e., forecasts issued on the earnings announcement day or the next day) when institutional attention to the firm is high. Not every analyst responds promptly to institutional attention. Insufficient resources or limited experience can hinder responsiveness under extreme

[4] In 2013, the Bloomberg terminal accounted for 57% of the business information platform market. The second most used platform, Thomson Reuters Eikon, accounted for 34% of the market, and FactSet, S&P Capital IQ, and Morning Direct accounted for the majority of the remaining market share (Nath 2013).

[5] The literature defines *investor attention* as an act of obtaining and analyzing information that is selective and requires effort (e.g., Hirshleifer and Teoh 2003). Given that "search for information" and "attention" are closely related, we use these terms interchangeably.

time constraints. We provide evidence consistent with this prediction. To capture the tight time constraint, we use forecasts issued on the earnings announcement day when the announcement is made after trading hours. When this occurs, the time available to issue a forecast before midnight is severely constrained. We find that analysts are more likely to respond to institutional attention under this stringent constraint when they are employed by large brokerages (a proxy for analyst resources) and when they have more experience.

Often, multiple earnings announcements are issued on the same day. When this happens, an analyst covering these firms must decide which announcement matters most to her institutional clients. We expect that analysts prioritize firms with higher institutional attention and issue forecasts for these firms first. Our results are consistent with this prediction. We find a positive association between institutional attention and the order in which an analyst produces research for multiple firms that announce earnings on the same day.

We also find a *distraction* effect of institutional attention to *other* firms. An analyst is less likely to issue a timely forecast for a firm when the institutional attention to *other* firms followed by that analyst is high. This finding is consistent with the notion that analysts prioritize their workload by focusing on tasks that matter most to institutional investors at that time. This result extends the finding of Driskill, Kirk, and Tucker (2020) that analysts are distracted by concurrent earnings announcements.

Our next set of tests focuses on analyst incentives. The literature examines the information content of timely forecasts (e.g., Zhang 2008; Chen, Cheng, and Lo 2010; Livnat and Zhang 2012; Driskill et al. 2020). Very little is known, however, about whether timeliness matters to analysts. If analysts' clients value timeliness, then analysts should be rewarded

accordingly. Moreover, if institutional investors value analysts' responsiveness to their information needs, then responsive analysts should experience better career outcomes. We find evidence consistent with these predictions. Analysts who issue timely forecasts are more likely to be named all-star analysts by *Institutional Investor* magazine in the following year, and they are less likely to be demoted to a smaller brokerage. Consistent with responsiveness to institutional attention mattering to analysts' careers, the effects of timeliness are stronger when timely research is produced for firms with high institutional attention.

We also investigate whether institutional attention affects the quality and content of analyst research by examining forecast accuracy and the breadth of forecasts across different horizons. Research shows that analysts trade off accuracy and timeliness (e.g., Clement and Tse 2003; Guttman 2010; Shroff, Venkataraman, and Xin 2012). This trade-off impedes analysts' ability to simultaneously achieve both higher accuracy and timeliness. Thus the effect on accuracy (and possibly breadth) is unclear. Our results provide weak evidence that, when institutional attention is high, analysts produce more accurate forecasts and cover a broader spectrum of forecast horizons.

Institutional attention is an inherently endogenous choice. While it is impossible to control for this endogeneity completely, we use several approaches to mitigate specific concerns. First, we include several controls for firm news, including the number of news articles, earnings news characteristics, and stock returns. Second, following Ben-Rephael, Carlin, Da, and Israelsen (2019), we use a measure of expected institutional attention to mitigate the endogeneity concerns that contemporaneous information affects institutional attention. Third, we use institutional attention to other firms, which does not depend directly

on the factors related to the firm being analyzed. Fourth, we find a relation between analyst responsiveness to institutional attention and analyst career outcomes, such as all-star rankings, which are determined by institutional investor votes. The evidence of this link strengthens the plausibility of our interpretation that analysts cater to institutional investors, who then reward them with favorable votes. Last, our findings are robust when we use firm-analyst fixed effects to isolate within-firm-analyst variation and when we control for potential omitted variables.

Our study contributes to the literature in several ways. First, we contribute to the broad literature on the demand and supply of analyst services.[6] We add to this literature by examining a new factor that affects analyst information production: responsiveness to time-varying institutional attention. Promptly responding to the needs of institutional investors is an essential yet little-understood aspect of an analyst's job. Our study enhances understanding of this part of analysts' activities by investigating how institutional attention affects analyst production of timely research and allocation of time across firms.

Second, we provide evidence on whether timeliness and responsiveness to institutional attention matter to analysts' careers. The literature often uses timely forecasts to investigate analysts' information processing role,[7] but there is little evidence that timeliness matters to

[6] See for example, Bhushan (1989), Barth, Kasznik, and McNichols (2002), Lehavy, Li, and Merkley (2011), Green, Jame, Markov, and Subasi (2014), Lawrence, Ryans, and Sun (2017), Givoly, Li, Lourie, and Nekrasov (2019).

[7] Chen, Cheng, and Lo (2010), Livnat and Zhang (2012) and Huang, Lehavy, Zang, and Zheng (2018) use timely forecasts to examine the separate roles of information interpretation versus information discovery by analysts. Yezegel (2015) finds that analysts revise their recommendations after earnings announcements when firms supply more information and when investor demand for analyst advice is high. deHaan, Madsen, and Piotroski (2017) find that analysts experiencing unpleasant weather issue less timely forecasts. Driskill, Kirk, and Tucker (2020) find that analysts issue less timely forecasts on high distraction days when other firms they cover are also announcing earnings.

analysts. Our study provides evidence that it does: timely analysts are more likely to be named all-stars and less likely to be demoted. Furthermore, we provide evidence that responsiveness to institutional investors affects analysts' careers.

Finally, our study contributes to the emerging literature on investor search for information online (e.g., Da, Engelberg, and Gao 2011; Drake, Roulstone, and Thornock 2012; Ben-Rephael et al. 2017; Ben-Rephael et al. 2019). These studies assume that investor search for information does not affect information supply. Our study relaxes this assumption and provides a more complete picture of the market in which institutional investors' search for information creates incentives for intermediaries to supply that information.

2. Data and Variable Measurement

2.1 Data

We identify institutional investor attention by obtaining data on such institutional investor activities as news searches and news reading on Bloomberg terminals. These data are available beginning on February 2, 2010, with some gaps.[8] We obtain analyst data from I/B/E/S, stock returns and prices from CRSP, and company financial data from Compustat.

Table 1 presents the details of the sample selection. We begin by collecting data on institutional attention around earnings announcements for the sample of Russell 3000 stocks from February 2, 2010, to August 31, 2017 (the day we collected the attention data). The initial sample includes 3,606 firms. We then remove observations that lack the requisite analyst data,

[8] The data are missing from December 6, 2010, to November 7, 2011, and from August 17, 2011, to November 2, 2011.

stock returns, or other financial data used as control variables. Our final sample consists of 437,009 analyst-firm-quarter observations, 36,063 firm-quarters, and 2,906 distinct firms.

2.2 Variable Measurement

2.2.1 Abnormal Institutional Attention

Following Ben-Rephael et al. (2017), we obtain the institutional attention measure from user activity on the Bloomberg terminal. Bloomberg counts the number of times terminal users actively search for news about a specific firm and the number of times users read news articles about the firm. While users may read some articles with no intent to obtain news on a specific firm, searching for a firm's news requires users to type the firm's ticker followed by the function "CN" (Company News). Bloomberg places greater weight on active demand for information by assigning a score of 10 to active news searches and a score of 1 to news reading. Each hour, these scores are aggregated over the previous eight hours and then compared to all aggregate scores over the previous 30 days for the same firm.

These scores are used to calculate the *abnormal attention score*. If the score is in the bottom 80%, the abnormal attention score is 0. If the score is in the top 20% (10%, 6%, or 4%), the abnormal attention score is 1 (2, 3, or 4, respectively). The daily abnormal attention scores provided by Bloomberg are the maximum scores during the calendar day.[9] The daily abnormal attention scores therefore capture spikes in attention during the day.

We use these abnormal attention scores to measure institutional investor attention around firms' earnings announcements, since Bloomberg terminals are largely housed in institutions. Specifically, our main measure of abnormal institutional attention, AIA_{jt}, is the

[9] Bloomberg does not provide raw hourly scores.

mean of Bloomberg's abnormal attention scores for firm *j* over trading days −1 and 0, relative to the earnings announcement date for quarter *t*. We do not include the day after the earnings announcement (day +1), because analysts who issue timely research on the earnings announcement day cannot simultaneously observe institutional attention for the following day.[10]

An important caveat is that we cannot observe that AIA represents only Bloomberg users who are institutional investors, so we cannot preclude the possibility that AIA also reflects searches by sell-side analysts themselves. Nevertheless, our back of the envelope calculation suggests that sell-side equity analysts covering the firm likely comprise a small fraction of the terminal users relative to institutional investors.[11]

We also calculate institutional attention to *other* firms' earnings announcements covered by the same analyst. Two firms with high *AIA* would distract analyst attention more than one firm with high *AIA*, so we measure distraction using the sum of *AIA* for other firms.[12] Specifically, for analyst *i* and firm *j* in quarter *t*, $AIA.OTHER_{ijt}$ is the sum of abnormal institutional attention (AIA_{kt}) for all firms *k* (excluding firm *j*) that have earnings

[10] The (untabulated) results are similar when *AIA* includes the day after the earnings announcement. The results are also similar when we use a measure of expected AIA (see Section 4.2).

[11] Bloomberg has approximately 325,000 users (https://www.bloomberg.com/professional/solution/bloomberg-terminal). The mean number of analysts following a firm is 18.904 (the descriptive statistics in Section 3). A senior analyst's team may include three or four associates and research analysts (Bradshaw, Ertimur, and O'Brian 2016, p 130). This yields estimates of 76 to 95 team members following the firm (19+19*3 and 19+19*4, respectively), which comprise 0.023% to 0.029% of the terminal users. The distribution of the number of team associates may be skewed towards larger brokerages, but even if the number of analysts who use Bloomberg terminals to search for information about the firm is 10 times larger than our rough calculation, the likely fraction of sell side analysts in AIA is still small relative to the fraction who are institutional investors.

[12] The results are similar when we use the average of *AIA* for other firms (untabulated).

announcements on the same day and are covered by analyst *i*.[13] If the analyst does not have other same-day earnings announcements, *AIA.OTHER* equals 0. When testing for *AIA.OTHER*, we control for the number of other same-day earnings announcements made by firms covered by the same analyst, *EA.OTHER*.[14]

2.2.2 Timely Analyst Research

We use an indicator variable for timely forecasts, $TIMELY_{ijt}$, that equals 1 if analyst *i* issues an earnings forecast for firm *j* on day 0 or day +1, relative to the earnings announcement date for quarter *t*. We also measure forecast issuance on day 0, *TIMELY.DAY0*, and (if the analyst did not issue a forecast on day 0) forecast issuance on day +1, *TIMELY.DAY1*.

For multiple same-day earnings announcements, we use the chronological order in which an analyst produces research for the firm, *TIME.ORDER*, relative to when the analyst produces research for other firms in her portfolio that announce earnings on that day. Specifically, $TIME.ORDER_{ijt}$ for analyst *i*, firm *j*, and the earnings announcement for quarter *t* is calculated as:

$$TIME.ORDER_{ijt} = 1 - (rank_{ijt} - 1)/(n_{it} - 1), \quad (1)$$

where $rank_{ijt}$ is the ordinal rank of the time of analyst *i*'s forecast for firm *j*, relative to other

[13] Ideally, our measure of institutional attention would be relative to other firms in a given analyst's portfolio that are announcing on the same day. However, as footnote 8 indicated, Bloomberg does not provide raw attention scores, so we cannot directly compare institutional attention on a given day across firms in the analyst's portfolio. As an alternative, we include *AIA.OTHER* as a separate variable that measures attention to other competing same-day announcers in the analyst portfolio as well as a distraction variable to the firm in question in our regression.

[14] *AIA.OTHER* reflects the number and magnitude of institutional attention spikes to other firms. Theory does not specify whether analysts are distracted by all attention spikes or only by very large spikes. As a robustness test, we calculate *AIA.OTHER* as the number of major attention spikes for other firms, where major attention spikes are as defined in Ben-Rephael et al. (2017), and find similar results (untabulated).

firms (e.g., 1 for the first forecast, 2 for the second forecast), and n_{it} is the number of earnings announcements issued on the same day by the firms covered by analyst *i*. Constructed in this way, *TIME.ORDER* equals 1 for the first forecast (*rank* = 1) and 0 for the last forecast (*rank* = *n*). When there is no update, *TIME.ORDER* is set to 0 (least timely).

When testing for *TIME.ORDER*, we control for the chronological order in which earnings announcements are issued by these same-day earnings announcers in the analyst's portfolio, *EA.ORDER*. We convert the time of the earnings announcement to the relative ranking variable, *EA.ORDER*, in a similar way to *TIME.ORDER*.

2.2.3 Analyst Career Outcome Measures

We use two analyst career outcome measures. The first is $ALL.STAR_{it+1}$, which is an indicator variable that equals 1 if analyst *i* is named as an All-America Research Team Analyst by *Institutional Investor* magazine in year *t+1* and 0 otherwise. Next is $DEMOTION_{it+1}$, which is an indicator variable that equals 1 if analyst *i* moves from a large brokerage to a small one in year *t+1* and 0 otherwise. A brokerage is classified as *large* if it employs 25 or more analysts (Ke and Yu 2006; Leone and Wu 2007; Shroff et al. 2014).

2.2.4 Analyst Characteristics

We control for various analyst and brokerage characteristics. Analyst experience, *EXPERIENCE*, is the number of quarters the analyst has covered the firm. The size of the brokerage that employs the analyst, *BROKERAGE.SIZE*, is the number of analysts employed by the brokerage. The variable *FIRMS.COVERED* is the number of firms covered by the analyst. Analyst forecast accuracy, *ACCURACY*, is the negative of absolute forecast error (i.e.,

actual earnings minus analyst earnings forecast), scaled by the stock price at the end of the previous quarter. Analyst forecast boldness, *BOLDNESS*, is the absolute value of the difference between the analyst's forecast and the consensus forecast, where the consensus forecast is the mean of the forecasts made by other analysts.

In the career outcome tests, we measure analyst characteristics relative to other analysts who cover the firm. We rank all analysts who cover firm *j* in quarter *t* based on an analyst characteristic, *X*, and we scale these rankings by the number of analysts covering the firm: $X_{ijt} = 1 - (rank_{ijt} - 1)/(number\ of\ analysts_{jt} - 1)$. We then calculate the mean of these rankings across all firms followed by analyst *i* in year *t*.

2.2.5 Average Timeliness and Responsiveness to Institutional Attention

In the career outcome tests, we calculate analyst timeliness and responsiveness to institutional attention relative to other analysts covering the firm. We rank all analysts who cover firm *j* in year *t* based on the mean *TIMELY* for that analyst-firm-year, and we scale these rankings by the number of analysts covering the firm: $TIMELY_{ijt} = 1 - (rank_{ijt} - 1)/(number\ of\ analysts_{jt} - 1)$. We then calculate the mean of these rankings across all firms followed by analyst *i* in year *t*. To capture analyst responsiveness to institutional attention, we calculate the mean *TIMELY* separately for observations with *AIA* above and below the mean and denote the resulting variables as *TIMELY.HighAIA* and *TIMELY.LowAIA*, respectively. We then calculate the relative ranking variables in a similar way to *TIMELY*.

2.2.6 Other Variables

We include the following firm and earnings announcement characteristics. Firm size, *SIZE*, is the natural logarithm of the market value of equity at the end of the previous quarter. The variable *NEWS.ARTICLES* is the natural logarithm of 1 plus the number of news articles obtained from Bloomberg for the firm over trading days −1 and 0, relative to the earnings announcement day. Analyst following, *ANA.FOLLOWING*, is the number of analysts who cover the firm. Institutional ownership, *INST.OWNERSHIP*, is the percentage of shares owned by institutional investors at the end of the previous quarter. The variable *BTM* is the book-to-market ratio measured at the end of the previous quarter, and *PAST.RETURN* is the stock return over the 12 months before the current quarter. The variable *ABS.SURPRISE* is the magnitude of the earnings surprise calculated as the absolute value of the difference between actual earnings and the consensus analyst forecast, scaled by the stock price at the end of the previous quarter. The indicator variable *BAD.NEWS* equals 1 if the reported earnings for the quarter misses the consensus analyst forecast and 0 otherwise. The indicator variable *SPECIAL* equals 1 if the firm reports negative special items and 0 otherwise. The variable *SVI* is the natural logarithm of the ratio of the Google search volume for the firm on the earnings announcement day and the average Google search volume over the previous month (Da, Engelberg, and Gao 2011). The variable *EA.TIME* is the hour in the day of the earnings announcement.

3. Empirical Results

3.1 Descriptive Statistics

We report descriptive statistics in Table 2. Abnormal institutional attention around earnings announcements, *AIA*, has a mean (median) of 2.533 (2.5), which indicates that

institutional attention around earnings announcements, on average, ranks in the top 6%–10% of the distribution of attention scores in the previous 30 days. Institutional attention to the same-day earnings announcements of other firms covered by the analyst, *AIA.OTHER*, has a mean of 16.876 and a standard deviation of 21.172, suggesting wide variation in aggregate institutional attention to these other earnings announcements. The mean of *TIMELY* indicates that analysts issue timely forecasts for 61.1% of the sample analyst-firm-quarter observations.[15] The fraction of timely forecasts for announcements with high (low) *AIA* is 63.2% (58.6%). The mean (median) analyst experience is 14.084 (12) quarters and the mean (median) number of firms that an analyst covers is 16.540 (16).

3.2 Institutional Attention and Analyst Production of Timely Research

We proposed that institutional investors value analyst responsiveness to their information needs. Institutional investors are analysts' main clients, and their assessment of the value added by analysts affects analysts' rankings, employment outcomes, and compensation. Consequently, we expect that analysts would exert effort to respond to institutional investor needs. Therefore we predict that analysts are more likely to produce timely research for a firm with higher institutional investor attention (proxied by the number of institutional searches for the firm).

H1: Analysts are more likely to produce timely research when institutional investor attention to the firm is high.

[15] Research on information spillovers from peer firms (e.g., Savor and Wilson 2016) suggests that analysts may also revise their forecasts on days when peer firms announce their earnings early. However, this is infrequent. We find that the average frequency of an analyst's revision on days [0,+1] around an early peer's announcement is only 3.7% (untabulated).

We test this hypothesis using the following logistic regression at the analyst-firm-quarter level.

$$\begin{aligned}\{TIMELY_{ijt} \text{ or } TIMELY.DAY0_{ijt} \text{ or } TIMELY.DAY1_{ijt}\} = {} & \alpha_1 + \beta_1 AIA_{jt} \\ & + \beta_2 EXPERIENCE_{ijt} + \beta_3 BROKERAGE.SIZE_{ijt} + \beta_4 FIRMS.COVERED_{ijt} \\ & + \beta_5 NEWS.ARTICLES_{jt} + \beta_6 SIZE_{jt} + \beta_7 BTM_{jt} \\ & + \beta_8 PAST.RETURN_{jt} + \beta_9 ABS.SURPRISE_{jt} + \beta_{10} BAD.NEWS + \beta_{11} SPECIAL_{jt} \\ & + \beta_{12} INST.OWNERSHIP_{jt} + \beta_{13} ANA.FOLLOWING_{jt} + \beta_{14} SVI_{jt} + \beta_{15} EA.TIME_{jt} + \varepsilon_{ijt},\end{aligned} \tag{2}$$

where subscripts *ijt* denote analyst *i*, firm *j*, and quarter *t*; *TIMELY*, *TIMELY.DAY0*, and *TIMELY.DAY1* indicate timely analyst research; and *AIA* represents abnormal institutional attention around the earnings announcement. All variables are as defined in Section 2. If analysts are more likely to issue timely forecasts when institutional investor attention is high, we would expect a positive coefficient on *AIA*.

We include analyst experience (*EXPERIENCE*) and brokerage size (*BROKERAGE.SIZE*) as controls, because experienced analysts and those who work for brokerages with more resources are more likely to provide timely research. We also include the number of firms covered by the analyst, *FIRMS.COVERED*, in the regression, though we do not have a clear prediction for its direction. Analysts who cover more firms are likely to have superior skills, which enables them to produce timely research. However, covering many other firms consumes more resources, and this may constrain timely research.

We include firm size (*SIZE*), analyst following (*ANA.FOLLOWING*), and the number of news articles for the firm (*NEWS.ARTICLES*) to control for the information environment. We include the book-to-market ratio (*BTM*) and past returns (*PAST.RETURN*) to control for growth opportunities and past performance. We also include institutional ownership

(*INST.OWNERSHIP*), since analysts are more likely to allocate their time to a firm when institutions hold more shares in that firm.[16] To control for the magnitude, sign, and properties of earnings news, we use the absolute value of the earnings surprise (*ABS.SURPRISE*), an indicator of negative earnings surprise (*BAD.NEWES*), and an indicator of special items (*SPECIAL*). We include Google Search Volume (*SVI*) to control for retail attention (Da, Engelberg, and Gao 2011). We control for the timing of earnings announcements by including the hour in the day of the earnings announcement (*EA.TIME*) and fixed effects for the day of the week.[17,18]

The results, presented in Table 3, are consistent with H1. The likelihood of an analyst producing a timely forecast is positively associated with institutional attention and the effect is economically meaningful. The odds of an analyst producing timely forecasts increase by 4.8% for a one standard deviation increase in institutional attention (exp(0.047×1.003) = 1.048). The results in the second column show that a significant fraction of analyst responsiveness to institutional attention is immediate; it occurs on the earnings announcement day itself. The

[16] The literature has used institutional ownership as a measure of institutional demand for information (e.g., Bhushan 1989; Yezegel 2015). To address our research question, we need a measure of institutional attention on a specific day. While investor attention fluctuates widely from day to day, institutional ownership remains relatively constant. The active searches for and reading of articles on a given day, captured by *AIA*, would therefore be a more suitable measure of attention for our purposes. The correlation between institutional ownership and *AIA* is positive but small (0.04, untabulated).

[17] deHaan, Shevlin, and Thornock (2015) find that some firms strategically announce bad news during aftermarket hours and on Fridays to avoid investor attention. If earnings announcements do not attract investor attention, our hypothesis that analysts cater to investor attention suggests that analysts would also likely ignore these announcements.

[18] The results are robust when we include both the hour in the day of the earnings announcement and the post-market indicator.

results in the last column show that if analysts have not already issued a forecast on day 0 for high AIA firms, a significant fraction do so on day +1.

The results for the control variables match our intuition: experienced analysts and those employed by larger brokerages are more likely to issue timely forecasts. Analysts are also more likely to issue timely forecasts for more newsworthy firms (i.e., those featured in more news articles *NEWS.ARTICLES*) and faster growing ones (i.e., a low *BTM*). Analysts are less likely to issue timely forecasts for firms with bad news (*BAD.NEWS*), perhaps because it takes longer to digest bad news information to update forecasts. The results also show a positive association between timely research and institutional ownership (*INST.OWNERSHIP*), which is consistent with higher institutional demand for timely research when institutional ownership is higher. The hour in the day *EA.TIME* is negatively (positively) associated with immediate (next day) forecasts, suggesting that analysts are slower to respond to announcements issued later in the day.

3.3 Institutional Attention and Analyst Time Allocation among Competing Tasks

Our prediction that institutional attention influences analyst production of timely research assumes that analyst time is a limited resource to be allocated selectively among tasks. So we assume that analysts prioritize tasks that matter more to their institutional clients. When multiple firms in the analyst's portfolio announce earnings on the same day, the analyst must decide which announcements demand the most attention from her institutional clients. Then the analyst must organize her workload accordingly. We predict that analysts will prioritize the production of research for firms with greater institutional attention.

H2: During same-day earnings announcements by firms in their portfolio, analysts will

prioritize producing research for firms in a chronological order that corresponds to the firms' levels of institutional attention.

We test this hypothesis by estimating the following regression on a subsample of analyst-firm-quarter observations on days with multiple same-day earnings announcers in the analyst's portfolio.

$$\begin{aligned} TIME.ORDER_{ijt} = {} & \alpha_1 + \beta_1 AIA_{jt} + \beta_2 EXPERIENCE_{ijt} + \beta_3 BROKERAGE.SIZE_{ijt} \\ & + \beta_4 FIRMS.COVERED_{ijt} + \beta_5 NEWS.ARTICLES_{jt} + \beta_6 SIZE_{jt} + \beta_7 BTM_{jt} \\ & + \beta_8 PAST.RETURN_{jt} + \beta_9 ABS.SURPRISE_{jt} + \beta_{10} BAD.NEWS_{jt} + \beta_{11} SPECIAL_{jt} \\ & + \beta_{12} INST.OWNERSHIP_{jt} + \beta_{13} ANA.FOLLOWING_{jt} + \beta_{14} SVI_{jt} + \beta_{15} \\ & EA.TIME_{jt} + \beta_{16} EA.ORDER_{jt} + \varepsilon_{ijt}, \end{aligned} \quad (3)$$

where *TIME.ORDER* is the order in which the analyst produces research for the firm, relative to when the analyst produces research for other same-day announcers (ranging from 1 for the first forecast to 0 for the last forecast). In addition to the control variables in Equation 2, we include the order in which the firm announces earnings, relative to other same-day announcers covered by the same analyst, *EA.ORDER*. We include this because, all else being equal, analysts are more likely to produce research first for firms that announce earnings first during the day. All variables are as defined in Section 2.

The results, presented in Table 4, are consistent with H2. Analysts prioritize producing research for firms that have higher institutional attention among the same-day announcers in their portfolio (*AIA* coefficient = 0.006, $p < 0.001$). Note that this effect is incremental to the first-in, first-out time order that analysts generally work under, as evidenced by the positive

coefficient on *EA.ORDER*.[19] The results for other variables suggest that analysts issue more timely forecasts for large firms and for those with higher growth and higher institutional ownership.

3.4 Distraction Effect of Institutional Attention to Other Firms

Time is a limited resource and must be allocated selectively. An analyst thus will divert resources from low-priority tasks to perform tasks that are more important to her institutional clients. In the context of earnings announcements, we expect that high institutional attention to other same-day earnings announcements covered by the same analyst will diminish that analyst's ability to produce timely research about the firm. Thus we predict a *distraction* effect as follows.

H3: Analysts are less likely to produce timely research when institutional attention to other same-day earnings announcers covered by the same analyst is high.

To test this hypothesis, we estimate the following logistic regression at the analyst-firm-quarter level.

$$\begin{aligned} TIMELY_{ijt} = {} & \alpha_1 + \beta_1 AIA_{jt} + \beta_2 AIA.OTHER_{ijt} + \beta_3 EXPERIENCE_{ijt} \\ & + \beta_4 BROKERAGE.SIZE_{ijt} + \beta_5 FIRMS.COVERED_{ijt} + \beta_6 NEWS.ARTICLES_{jt} \\ & + \beta_7 SIZE_{jt} + \beta_8 BTM_{jt} + \beta_9 PAST.RETURN_{jt} + \beta_{10} ABS.SURPRISE_{jt} \\ & + \beta_{11} BAD.NEWS_{jt} + \beta_{12} SPECIAL_{jt} + \beta_{13} INST.OWNERSHIP_{jt} \\ & + \beta_{14} ANA.FOLLOWING_{jt} + \beta_{15} SVI_{jt} + \beta_{16} EA.TIME_{jt} + \beta_{17} EA.OTHER_{jt} + \varepsilon_{ijt}, \end{aligned} \quad (4)$$

where *AIA.OTHER* represents institutional attention to other same-day earnings announcers

[19] The effect of one standard deviation increase in *EA.ORDER* is 11.6 times larger than the effect of *AIA* ((0.155*0.452)/(0.006*1.003) = 11.6). The large effect of *EA.ORDER* is consistent with analysts generally following the first-in, first-out time order.

covered by the same analyst. We control for the number of same-day earnings announcements, *EA.OTHER*, to capture the incremental effect of institutional attention to these announcements.

The results, presented in Table 5, are consistent with the distraction effect of institutional attention to other firms. The first column shows the results for the full sample. The coefficient on *AIA.OTHER* is negative and significant (coefficient = −0.006, $p < 0.001$), suggesting that institutional attention to other same-day announcements covered by the analyst distracts from the analyst's production of timely forecasts. The negative association between timely research and *EA.OTHER* is consistent with analysts being distracted by concurrent earnings announcements (Driskill et al. 2020). The second column shows the results for the subsample of observations that have at least one other same-day earnings announcement covered by the same analyst. Consistent with the results for the full sample, the coefficient on *AIA.OTHER* is negative and significant.

3.5 Analyst Career Outcomes

There is limited empirical evidence on whether the timeliness of research has consequences for analysts.[20] If timely research matters to institutional investors, then analysts producing it would experience favorable career outcomes. Thus our first hypothesis regarding analyst career outcomes is as follows.

H4: Analysts who produce timely research experience better career outcomes.

As discussed above, analysts add value for institutional investors by producing timely research when institutions need it most. Analyst surveys (Brown et al. 2015), the annual

[20] An early study is Emery and Li (2009), who find that the number of reports issued in a given period, which can be viewed as a crude proxy for timeliness, affects analyst rankings.

Institutional Investor survey, and anecdotal evidence (Spence et al. 2019) all suggest that analyst timely responsiveness to the information needs of institutional investors is highly valued by institutional investors and therefore affects analysts' rankings and career outcomes. Thus we expect that these rewards are more likely when timely research is produced for firms with high institutional attention, that is, when analysts respond to institutional attention. We thus have the following hypothesis.

H5: The career effects of timeliness are more pronounced for analysts who produce timely research when institutional attention is high.

To test the above hypotheses, we use two career outcome measures employed in prior studies that directly relate to analyst rewards. First, research shows that *Institutional Investor*'s all-star ranking improves analyst compensation and career advancement (Groysberg, Healy, and Maber 2011; Brown et al. 2015). Second, studies also use unfavorable job turnover (e.g., Mikhail, Walther, and Willis 1999; Hong and Kubik 2003; Hilary and Hsu 2013) to measure career outcomes. These studies note that large brokerages are typically more prestigious and better paying, so moving from a large brokerage to a smaller one is a demotion. Thus we use all-star recognition as a proxy for positive career outcomes, and we use demotion as a proxy for negative career outcomes.

We test Hypotheses H4 and H5 by estimating the following logistic regressions across all analyst-year observations.

$$\begin{aligned} ALL.STAR_{it+1} = \alpha_1 + (\beta_1\, TIMELY_{it} \text{ or } \beta_1\, TIMELY.HighAIA_{it} \\ + \beta_2\, TIMELY.LowAIA_{it}) + \beta_3\, ACCURACY_{it} + \beta_4\, BOLDNESS_{it} \\ + \beta_5\, EXPERIENCE_{it} + \beta_6\, FIRMS.COVERED_{it} + \varepsilon_{it}, \end{aligned} \tag{5}$$

$$DEMOTION_{it+1} = \alpha_1 + (\beta_1 TIMELY_{it} \text{ or } \beta_1 TIMELY.HighAIA_{it} + \beta_2 TIMELY.LowAIA_{it}) + \beta_3 ACCURACY_{it} + \beta_4 BOLDNESS_{it} + \beta_5 EXPERIENCE_{it} + \beta_6 FIRMS.COVERED_{it} + \varepsilon_{it}, \quad (6)$$

where $ALL.STAR_{t+1}$ indicates whether an analyst is named an all-star analyst in the next year, and $DEMOTION_{t+1}$ indicates whether an analyst is demoted from a large brokerage to a small one in the next year. The variable *TIMELY* represents an analyst's average timeliness, and *TIMELY.HighAIA* (*TIMELY.LowAIA*) represents an analyst's timeliness for earnings announcements with high (low) institutional attention. To examine the effect of timely research incremental to past variables that have been shown to affect career outcomes, we control for analyst accuracy, *ACCURACY*, (Mikhail, Walther, and Willis 1999; Hong and Kubik 2003) and analyst forecast boldness, *BOLDNESS* (Hong, Kubik, Solomon 2000). We also include analyst experience (*EXPERIENCE*), the number of firms covered by the analyst (*FIRMS.COVERED*), and broker and year fixed effects.[21] *TIMELY*, *TIMELY.HighAIA*, *TIMELY.LowAIA*, *ACCURACY*, *BOLDNESS*, *EXPERIENCE*, and *FIRMS.COVERED* are measured relative to other analysts covering the firm as described in Sections 2.2.4 and 2.2.5. We expect the coefficient on *TIMELY* to be positive in Equation 5 and negative in Equation 6. If analysts are rewarded for their responsiveness to institutional attention, we expect the effect of *TIMELY.HighAIA* to be stronger than the effect of *TIMELY.LowAIA*.

The results presented in Table 6 are consistent with analyst timeliness and responsiveness to institutional attention being rewarded in terms of analyst career outcomes (H4 and H5). Panel A shows the results of estimating the all-star regression. The coefficient on

[21] We include broker fixed effects, instead of brokerage size, because the latter is mechanically and negatively correlated with *DEMOTION*. The results are similar when we include brokerage size (untabulated).

average timeliness, *TIMELY*, in the first column is positive and significant (coefficient = 0.792, $p = 0.010$), indicating that timely analysts are more likely to be named as all-stars. The results in the second column are consistent with rewards to timeliness being more pronounced when institutional attention is high. The coefficient on *TIMELY.HighAIA* is positive and significant (coefficient = 0.971, $p = 0.005$), whereas the coefficient on *TIMELY.LowAIA* is insignificant. The F-test reported in the last row indicates that the difference between these two coefficients is significant at the $p = 0.030$ two-sided level. The results for other variables suggest that accurate analysts, experienced analysts, and analysts who cover many firms are also more likely to be named all-stars.

Table 6 Panel B shows the results of estimating Equation 6. These results show that analysts who produce timely research are less likely to be demoted from a large to a small brokerage and the effect of timeliness is more pronounced when institutional attention is high. The coefficient on average timeliness, *TIMELY*, in the first column is negative and significant (coefficient = −1.645, $p < 0.001$). In the second column, the coefficient on *TIMELY.HighAIA* is more negative than the coefficient on *TIMELY.LowAIA*. The F-test reported in the last row indicates that the difference between these two coefficients is significant at the $p = 0.080$ two-sided level. The negative coefficient on accuracy suggests that accurate analysts are less likely to be demoted.

4. Robustness Tests and Additional Analyses

4.1 Estimation from Within-Analyst and Within-Firm-Analyst Variation

Our main tests estimate the association between timely research and institutional attention (Equation 2) across analyst-firm-quarter observations. We cluster standard errors by

analyst, and we include year fixed effects and day of the week fixed effects. As a robustness test, we add analyst fixed effects to isolate within-analyst variation. As a further test, we add fixed effects for each firm-analyst pair to isolate within-firm-analyst variation and control for unobservable firm and analyst characteristics and the importance of the firm to the analyst.[22]

The results, reported in Table 7, are consistent with those reported in Table 3. The coefficient on AIA is positive and significant when we include analyst, year, and day of the week fixed effects (in the first column) and when we include firm-analyst, year, and day of the week fixed effects (in the second column).[23,24]

4.2 Expected Abnormal Institutional Attention

We employ the measure of expected institutional attention from Ben-Rephael et al. (2019) to mitigate an endogeneity concern that institutional attention is, in itself, a response to an unobserved driver of timeliness of analyst forecasts. Ben-Rephael et al. show that attention to a firm's past earnings announcements is a significant predictor of attention to the firm's current announcement. Since past attention is not affected by current news, this measure mitigates the endogeneity concern that concurrent information or concurrent events induce a spurious association between institutional attention and timely analyst research. This measure also helps us rule out reverse causality in which analyst research leads to abnormal institutional

[22] To estimate the fixed effects models, we use the conditional logit procedure. By conditioning the likelihood function within each fixed-effect group, the procedure avoids the need to estimate the many coefficients on the fixed effects and produces consistent estimates for the remaining variables.

[23] As an additional check, we reestimate the regression with broker and year fixed effects and find similar results.

[24] The results also hold within subsamples of small and large firms (untabulated).

attention.[25] We calculate expected institutional attention, *EAIA*, as the mean *AIA* across the previous four earnings announcements.

The first column in Table 8 reports the results of estimating an equation similar to Equation 2, except we replace current institutional attention, *AIA*, with expected attention, *EAIA*. The results are consistent with those in Table 3. The coefficient on expected attention is positive and significant.[26]

4.3 Preannouncement Abnormal Institutional Attention

As another robustness test, we use preannouncement AIA, measured over days −3 to −1, as an instrument for institutional investor attention.[27] Similar to the expected measure *EAIA*, preannouncement AIA mitigates the endogeneity concern that information contained in the earnings announcement induces the association between institutional attention and analyst forecasts. Because preannouncement AIA is not based on current or past announcements, this measure also alleviates the concern about *EAIA* that it may be influenced by the amount of information the firm typically discloses on earnings announcement days. The second column of Table 8 reports the results using preannouncement AIA. Consistent with the results in Table 3, the coefficient on preannouncement AIA is positive and significant.[28]

[25] This possibility is unlikely for forecasts issued after the earnings announcement date (e.g., on day +1).

[26] In an additional analysis, we find that current *AIA* remains significant when holding the level of past attention constant. The coefficient on *AIA* is significant within the subsamples of both low and high *EAIA* (untabulated).

[27] A three-day window increases the test power to detect abnormal changes in attention. The results are similar when we use a one- or two-day window (untabulated).

[28] In an additional analysis, we reestimate the tests in Tables 4, 5, and 9 using preannouncement AIA and *EAIA* and find similar results (untabulated).

4.4 Extreme Time Constraints and Resource Availability

Not every analyst can promptly respond to institutional attention. When an analyst faces extreme time constraints and when she has limited resources and experience, the analyst may not be able to produce timely forecasts. We consider two measures of extreme time constraints. The first is when forecasts are issued on the same day as the earnings announcement day. The second when forecasts are issued on the earnings announcement day and the earnings announcement comes after trading hours. This means the analysts have only a few hours to produce their forecasts before midnight.

We use brokerage size to proxy for the resources available to analysts. Specifically, *BIG.BROKERAGE* equals 1 if the analyst is employed by a brokerage firm above the sample median and 0 otherwise (Ke and Yu 2006; Leone and Wu 2007; Shroff et al. 2014). To capture the effect of experience, we use the indicator *MORE.EXPERIENCE*, which equals 1 if the analyst's experience, *EXPERIENCE*, is above the sample median and 0 otherwise. We estimate the following logistic regression at the analyst-firm-quarter level.

$$\begin{aligned} TIMELY.DAY0_{ijt} = {} & \alpha_1 + \beta_1 \{AIA_{jt} * BIG.BROKERAGE_{ijt} \text{ or} \\ & AIA_{jt} * MORE.EXPERIENCE_{ijt}\} + \beta_2 AIA_{jt} + \beta_3 EXPERIENCE_{ijt} \\ & + \beta_4 BROKERAGE.SIZE_{ijt} + \beta_5 FIRMS.COVERED_{ijt} + \beta_6 NEWS.ARTICLES_{jt} \\ & + \beta_7 SIZE_{jt} + \beta_8 BTM_{jt} + \beta_9 PAST.RETURN_{jt} + \beta_{10} ABS.SURPRISE_{jt} \\ & + \beta_{11} BAD.NEWS_{jt} + \beta_{12} SPECIAL_{jt} + \beta_{13} INST.OWNERSHIP_{jt} \\ & + \beta_{14} ANA.FOLLOWING_{jt} + \beta_{15} SVI_{jt} + \beta_{16} EA.TIME_{jt} + \varepsilon_{ijt}, \end{aligned} \tag{7}$$

where we expect the coefficients on the interaction terms *AIA*BIG.BROKERAGE* and *AIA*MORE.EXPERIENCE* to be positive.

Table 9 Panel A reports the results for the effect of a large brokerage. The first column shows the results for all earnings announcements. The second column shows the results for earnings announcements made after trading hours. The coefficient on *AIA*BIG.BROKERAGE* is positive and significant in both settings, which is consistent with our prediction that the resources available to an analyst enhance her ability to respond promptly to institutional attention. This effect is more pronounced for after-hours announcements, when the time constraint is especially severe. The results for the effect of analyst experience, presented in Panel B, show a similar positive relation between an analyst's experience and her responsiveness to institutional attention under extreme time constraints. The coefficient on *AIA*MORE.EXPERIENCE* is positive and significant in both settings.

4.5 Forecast Accuracy and Breadth

In our last analysis, we investigate whether institutional attention affects the quality and content of analyst research. We examine two characteristics of analyst research: forecast accuracy and the breadth of forecasts across different forecast horizons.

The effect of institutional attention on forecast accuracy and breadth is unclear. On the one hand, analysts have incentives to produce accurate and informative research (e.g., Mikhail, Walther, and Willis 1999). On the other hand, analysts compromise between accuracy and timeliness (e.g., Clement and Tse 2003; Shroff et al. 2014). If analysts must trade off these attributes, the rewards for timeliness can outweigh the benefits of accuracy and breadth.

We re-estimate Equation 2 after replacing the timely forecast indicator with *Relative Accuracy* or *Forecast Breadth*, respectively. To account for the difficulty of making accurate forecasts for a given firm and time, we benchmark *Relative Accuracy* against the accuracy of

forecasts for the same firm issued in the next 10 days. Specifically, *Relative Accuracy*$_{ijt}$ for analyst *i* covering firm *j* in quarter *t* equals |consensus (+1, +10)$_{jt}$ – actual$_{jt}$| – |forecast$_{ijt}$ – actual$_{jt}$|, scaled by the standard deviation of forecast errors across all forecasts issued during the window (0, +10). We calculate *Forecast Breadth* as the natural logarithm of the number of EPS forecasts across all forecast horizons issued by the analyst for that firm on the earnings announcement day or the next day.

The results, untabulated for brevity, show only weak evidence that institutional attention is associated with higher forecast accuracy and greater forecast breadth. The coefficient on AIA in the accuracy regression is 0.007, significant at the $p = 0.067$ two-sided level. The coefficient on AIA in the forecast breadth regression is 0.002, significant at the $p = 0.040$ two-sided level. These are positive but small effects. The increase of AIA by one standard deviation is associated with an increase in accuracy of only 0.71% (0.007 × 1.019) and an increase in breadth of only 0.20% (0.002 × 1.019).

5. Conclusion

This paper studies whether institutional investor attention affects analysts' production of timely research and their time allocation across competing tasks. We capture institutional attention using news searches on Bloomberg terminals.

Consistent with analysts having incentives to be responsive to their institutional clients' information needs, we find that analysts are more likely to produce timely research about firms to which institutional investors pay greater attention. When analysts face multiple earnings announcements on the same day, they prioritize issuing forecasts for firms with higher institutional attention earlier in the day. We also find a distraction effect of institutional

attention to other firms: An analyst is less likely to produce timely research for a firm when institutional attention to other firms covered by that analyst is high.

Regarding analysts' financial incentives, we provide evidence that timeliness and responsiveness to institutional attention have consequences for analyst career outcomes. Analysts who produce timely research are more likely to be named as all-star analysts and less likely to be demoted. The effects of timeliness on career outcomes are stronger when analysts respond to institutional investor attention. Finally, we find only weak evidence that institutional attention is associated with higher forecast accuracy and greater breadth of different forecast horizons.

Analyst research matters to capital markets because it affects firms' information environment and stock prices. This paper introduces a new factor that influences analysts' information production: responsiveness to institutional investor attention. Our findings are consistent with institutional attention affecting incentives for analysts to produce timely research. Institutional attention to a firm increases the timeliness of analysts' forecasts for that firm, while institutional attention to other competing firms reduces the timeliness of forecasts for the firm.

Our study also contributes to the research by showing that analysts' career outcomes depend on how analysts respond to the demand for their services. In our study, we examine one dimension of how well analysts meet the demand for their services: timeliness of forecasts in response to institutional investor clients. We provide evidence that the degree of responsiveness to institutional attention affects analyst career outcomes. Finally, and more broadly, our results also extend the emerging research on investors' online searches for information. We provide

evidence that institutional investor search for information stimulates the supply of timely information from analysts.

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Appendix A
Variable Definitions

Variable	Description
ABS.SURPRISE	The absolute magnitude of earnings surprise, calculated as the absolute value of the difference between actual earnings and the consensus analyst forecast, scaled by the stock price at the end of the previous quarter.
ACCURACY	Analyst accuracy, calculated as the negative of absolute forecast error (actual earnings minus analyst forecast) scaled by the stock price at the end of the previous quarter. We rank all analysts who cover firm *j* in quarter *t* based on accuracy, and we scale these rankings by the number of analysts covering firm *j* in quarter *t*: $ACCURACY_{ijt} = 1 - (\text{rank}_{ijt} - 1)/(\text{number of analysts}_{jt} - 1)$. We then calculate accuracy at the analyst-year level ($ACCURACY_{it}$) as the mean of $ACCURACY_{ijt}$ across all firms followed by analyst *i* in year *t*.
AIA	Abnormal institutional attention for the firm around the earnings announcement day, calculated as the mean of Bloomberg's abnormal attention scores for the firm over trading days −1 and 0, relative to the earnings announcement day.
AIA.OTHER	Institutional attention to other same-day earnings announcements covered by the same analyst. $AIA.OTHER_{ijt}$ for analyst *i*, firm *j*, and quarter *t* is the sum of abnormal institutional attention AIA_{kt} for all firms *k*, excluding firm *j*, that have earnings announcements on the same day and are covered by analyst *i*.
$ALL.STAR_{t+1}$	An indicator that equals 1 if the analyst is named as an All-America Research Team Analyst by *Institutional Investor* magazine in year *t*+1 and 0 otherwise.
ANA.FOLLOWING	The number of analysts covering the firm.
BIG.BROKERAGE	An indicator that equals 1 if the brokerage firm that employs the analyst is above the sample median and 0 otherwise.
BOLDNESS	Analyst boldness, calculated as the absolute value of the difference between the analyst forecast and consensus forecast, where the consensus forecast is the mean of the forecasts made by other analysts. We calculate the relative ranking variable in a similar way to *ACCURACY*.
BROKERAGE.SIZE	The size of the brokerage firm that employs the analyst, calculated as the number of analysts employed by the brokerage.

BTM	The book-to-market ratio, measured at the end of the previous quarter.
$DEMOTION_{t+1}$	An indicator that equals 1 if the analyst moves from a large brokerage to a small one in year t+1 and 0 otherwise, where a brokerage is classified as *large* if it employs 25 or more analysts (Ke and Yu 2006; Leone and Wu 2007; Shroff et al. 2014).
EA.ORDER	The order in which the firm announces earnings, relative to other same-day earnings announcements covered by the same analyst. We convert the time of the earnings announcement into the relative ranking variable, *EA.ORDER*, in a similar way to *TIME.ORDER*.
EA.OTHER	The number of other same-day earnings announcements made by firms that are covered by the same analyst.
EA.TIME	The hour in the day of the earnings announcement.
EAIA	A measure of expected institutional attention, calculated as the mean *AIA* across the previous four earnings announcements.
EXPERIENCE	Analyst experience, calculated as the number of years the analyst appears on I/B/E/S. In the career outcome tests, we calculate the relative ranking variable in a similar way to *ACCURACY*.
FIRMS.COVERED	The number of firms covered by the analyst. In the career outcome tests, we calculate the relative ranking variable in a similar way to *ACCURACY*.
BAD.NEWS	An indicator that equals 1 if the reported earnings for the quarter misses the consensus analyst forecast and 0 otherwise.
INST.OWNERSHIP	Percentage of shares owned by institutional investors at the end of the previous quarter.
MORE.EXPERIENCE	An indicator that equals 1 if the analyst's experience, *EXPERIENCE*, is above the sample median and 0 otherwise.
NEWS.ARTICLES	The natural logarithm of 1 plus the number of news articles for the firm over trading days −1 and 0, relative to the earnings announcement day, obtained from Bloomberg.
PAST.RETURN	Stock return over the 12 months before the current quarter.
SIZE	The natural logarithm of the market value of equity at the end of the previous quarter.
SPECIAL	An indicator that equals 1 if the firm reports negative special items and 0 otherwise.

SVI	Abnormal Google search volume, calculated as the natural logarithm of the ratio of the Google search volume for the firm for the day and the average Google search volume over the previous month (Da, Engelberg, and Gao 2011).
TIMELY	An indicator that equals 1 if the analyst issues a forecast on the earnings announcement day or the next day (i.e., trading days 0 and +1) and 0 otherwise. In the career outcome tests, we calculate timeliness relative to other analysts covering the firm. In the career outcome tests, we calculate relative timeliness by ranking all analysts who cover firm *j* in year *t* based on the mean *TIMELY* for that analyst-firm-year, and we scale these rankings by the number of analysts covering the firm: $TIMELY_{ijt} = 1 - (rank_{ijt} - 1)/(number\ of\ analysts_{jt} - 1)$. We then calculate the mean of these rankings across all firms followed by analyst *i* in year *t*.
TIMELY.DAY0	An indicator that equals 1 if the analyst issues a forecast on the earnings announcement day (day 0) and 0 otherwise.
TIMELY.DAY1	An indicator that equals 1 if the analyst issues a forecast on the day after the earnings announcement day (day +1) and 0 otherwise.
TIMELY.HighAIA	Analyst timeliness for earnings announcements with high institutional attention. We calculate the mean, *TIMELY*, for observations with AIA above the mean for that analyst-firm-year. We then calculate the relative ranking variable in a similar way to relative *TIMELY*.
TIMELY.LowAIA	Analyst timeliness for earnings announcements with low institutional attention, calculated in a way similar to *TIMELY.HighAIA*.
TIME.ORDER	The order in which the analyst issues forecasts for the firm, relative to other firms that announce earnings on the same day and are covered by the same analyst. $TIME.ORDER_{ijt}$ for the earnings announcement date for analyst *i*, firm *j*, and quarter *t* is calculated as $TIME.ORDER_{ijt} = 1 - (rank_{ijt} - 1)/(n_{it} - 1)$, where $rank_{ijt}$ is the ordinal rank of the time of analyst *i*'s forecast for firm *j* relative to the time of analyst *i*'s forecasts for other firms (e.g., 1 for the first forecast, 2 for the second forecast) and n_{it} is the number of earnings announcements on that day by firms covered by analyst *i*.

Table 1
Sample Selection

	No. of firms	No. of firm–quarters	No. of analyst–firm–quarters
Available Bloomberg attention measure	3,606	53,732	625,466
Less missing analyst forecast data	25	648	37,088
	3,581	53,084	588,378
Missing stock returns	408	5,926	41,220
	3,173	47,158	547,158
Missing necessary financial and Google search data	267	11,095	110,149
Final sample	2,906	36,063	437,009

Table 2
Descriptive Statistics

Variable	Mean	StdDev	P25	Median	P75
Main Variables					
AIA	2.533	1.003	2.000	2.500	3.500
AIA.OTHERS	16.876	21.172	0.000	6.000	30.000
TIMELY	0.611	0.487	0.000	1.000	1.000
TIME.ORDER	0.500	0.458	0.000	0.500	1.000
TIMELY (High AIA)	0.632	0.482	0.000	1.000	1.000
TIMELY (Low AIA)	0.586	0.493	0.000	1.000	1.000
Control Variables					
EXPERIENCE	14.084	9.820	5.000	12.000	24.000
BROKERAGE.SIZE	70.270	58.032	25.000	54.000	105.000
FIRMS.COVERED	16.540	6.568	12.000	16.000	20.000
ACCURACY	0.503	0.323	0.222	0.500	0.789
BOLDNESS	0.508	0.322	0.231	0.500	0.800
SIZE	8.570	1.578	7.454	8.504	9.641
ANA.FOLLOWING	18.904	9.269	12.000	18.000	25.000
NEWS.ARTICLES	3.588	2.315	0.000	4.431	5.187
INST.OWNERSHIP	0.792	0.232	0.671	0.796	0.908
BTM	0.456	0.365	0.210	0.372	0.627
PAST.RETURN	0.189	0.430	-0.062	0.142	0.365
ABS.SURPRISE	0.003	0.006	0.000	0.001	0.003
BAD.NEWS	0.259	0.438	0.000	0.000	1.000
SPECIAL	0.494	0.500	0.000	1.000	1.000
SVI	0.240	0.445	-0.025	0.121	0.426
EA.TIME	11.397	4.726	7.000	9.000	16.000
EA.ORDER	0.500	0.452	0.000	0.500	1.000

This table shows descriptive statistics. *TIMELY* (*High AIA*) and *TIMELY* (*Low AIA*) show the descriptive statistics for *TIMELY* for observations with AIA above and below the mean, respectively. All variables are as defined in Appendix A.

Table 3
Institutional Attention and Timely Analyst Research

	Dependent Variable Is the Indicator of Forecast Issued on Days 0 or +1, *TIMELY* (All Observations)		Dependent Variable Is the Indicator of Forecast Issued on Day 0, *TIMELY.DAY0* (All Observations)		Dependent Variable Is the Indicator of Forecast Issued on Day +1, *TIMELY.DAY1* (Exclude Analysts Who Forecasted on Day 0)	
	Coeff.	*p-value*	*Coeff.*	*p-value*	*Coeff.*	*p-value*
AIA	**0.047*** **	**(<0.001)**	**0.018*** **	**(0.004)**	**0.051*** **	**(<0.001)**
EXPERIENCE	0.005**	(0.012)	0.004	(0.123)	0.004**	(0.030)
BROKER.SIZE	0.002***	(<0.001)	0.004***	(<0.001)	0.001**	(0.023)
FIRMS.COVERED	0.006	(0.106)	0.008**	(0.031)	0.004	(0.262)
NEWS.ARTICLES	0.023***	(<0.001)	0.024***	(<0.001)	0.018***	(<0.001)
SIZE	-0.066***	(<0.001)	-0.059***	(<0.001)	-0.052***	(<0.001)
BTM	-0.517***	(<0.001)	-0.444***	(<0.001)	-0.447***	(<0.001)
PAST.RETURN	-0.004	(0.779)	-0.008	(0.687)	-0.003	(0.827)
ABS.SURPRISE	0.677	(0.559)	-4.569***	(0.005)	2.329**	(0.045)
BAD.NEWS	-0.058***	(<0.001)	-0.067***	(<0.001)	-0.042***	(<0.001)
SPECIAL	0.086***	(<0.001)	-0.005	(0.768)	0.104***	(<0.001)
INST.OWNERSHIP	0.207***	(<0.001)	0.242***	(<0.001)	0.144***	(<0.001)
ANA.FOLLOWING	0.013***	(<0.001)	0.009***	(<0.001)	0.013***	(<0.001)
SVI	0.269***	(<0.001)	0.146***	(<0.001)	0.266***	(<0.001)
EA.TIME	-0.034***	(<0.001)	-0.149***	(<0.001)	0.023***	(<0.001)
Observations	437,009		437,009		334,969	
Psuedo-R^2	0.02		0.08		0.02	

This table reports the results of estimating logistic Equation 2, where the indicator of an analyst's timely forecast, *TIMELY*, is regressed on abnormal institutional attention, *AIA*, and control variables. In the second column, the dependent variable is an indicator of an analyst forecast issued on day 0 (i.e., the earnings announcement day). In the last column, the dependent variable is an indicator of analyst forecast issued on day +1, and analysts who already issued a forecast on day 0 are excluded from the sample in this column. Values in brackets represent *p*-values. The regressions are estimated with year fixed effects and day of the week fixed effects. Standard errors are clustered by analyst. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests.

Table 4
Multiple Same-Day Earnings Announcements Covered by the Same Analyst

	Dependent Variable Is Relative Timing of Analyst Forecast, *TIME.ORDER* (Subsample with at Least Two Same-Day Earnings Announcements Covered by the Same Analyst)	
	Coeff.	*p-value*
AIA	**0.006*** **	**(<0.001)**
EXPERIENCE	-0.001***	(<0.001)
BROKER.SIZE	-0.000***	(0.001)
FIRMS.COVERED	0.000*	(0.078)
NEWS.ARTICLES	0.001	(0.323)
SIZE	0.005***	(0.001)
BTM	-0.014***	(<0.001)
PAST.RETURN	0.006*	(0.065)
ABS.SURPRISE	0.221	(0.430)
BAD.NEWS	0.015***	(<0.001)
SPECIAL	-0.012***	(<0.001)
INST.OWNERSHIP	0.040***	(<0.001)
ANA.FOLLOWING	0.001***	(<0.001)
SVI	0.013***	(<0.001)
EA.TIME	-0.012***	(<0.001)
EA.ORDER	0.155***	(<0.001)
Observations	123,775	
Adj-R^2	0.06	

This table reports the results of estimating Equation 3, where the timing of an analyst's forecast for the firm, relative to other announcing firms on the same day and covered by the same analyst, *TIME.ORDER*, is regressed on abnormal institutional attention, *AIA*, and control variables. Values in brackets represent *p*-values. The regressions are estimated with year fixed effects and day of the week fixed effects. Standard errors are clustered by analyst. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests.

Table 5
Institutional Attention to Other Firms

	Full Sample		Subsample of Observations with at Least One Other Same-Day Earnings Announcement Covered by the Same Analyst	
	Coeff.	*p-value*	*Coeff.*	*p-value*
AIA	0.049***	(<0.001)	0.075***	(<0.001)
AIA.OTHER	**-0.006*** **	**(<0.001)**	**-0.012*** **	**(<0.001)**
EXPERIENCE	0.005**	(0.011)	0.006**	(0.017)
BROKER.SIZE	0.002***	(<0.001)	0.002***	(<0.001)
FIRMS.COVERED	0.020***	(<0.001)	0.015***	(0.001)
NEWS.ARTICLES	0.018***	(<0.001)	0.023***	(<0.001)
SIZE	-0.059***	(<0.001)	-0.049***	(0.005)
BTM	-0.462***	(<0.001)	-0.529***	(<0.001)
PAST.RETURN	0.003	(0.815)	0.008	(0.728)
ABS.SURPRISE	1.295	(0.266)	6.183***	(0.002)
BAD.NEWS	-0.052***	(<0.001)	-0.018	(0.286)
SPECIAL	0.079***	(<0.001)	0.026	(0.156)
INST.OWNERSHIP	0.204***	(<0.001)	0.245***	(<0.001)
ANA.FOLLOWING	0.015***	(<0.001)	0.014***	(<0.001)
SVI	0.259***	(<0.001)	0.308***	(<0.001)
EA.TIME	-0.035***	(<0.001)	-0.043***	(<0.001)
EA.OTHER	-0.087***	(<0.001)	-0.111***	(<0.001)
Observations	420,750		117,339	
Pseudo-R^2	0.03		0.04	

This table reports the results of estimating logistic Equation 4, where the indicator of analyst timely forecast, *TIMELY*, is regressed on abnormal institutional attention to the firm around the earnings announcement (*AIA*), abnormal institutional attention to other same-day earnings announcements covered by the same analyst (*AIA.OTHER*), and control variables. In the second column, the model is estimated on the sample of firms that consists of observations with at least one other same-day earnings announcement covered by the same analyst. Values in brackets represent *p*-values. The regressions are estimated with year fixed effects and day of the week fixed effects. Standard errors are clustered by analyst. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests.

Table 6
Analyst Career Outcomes

Panel A: All-Star Status

	Dependent Variable Is All-Star Status, $All\text{-}Star_{t+1}$			
	Coeff.	*p-value*	*Coeff.*	*p-value*
TIMELY	**0.792****	**(0.010)**		
TIMELY.HighAIA			**0.971*****	**(0.005)**
TIMELY.LowAIA			**-0.208**	**(0.527)**
ACCURACY	0.632**	(0.019)	0.614**	(0.024)
BOLDNESS	-0.206	(0.368)	-0.229	(0.311)
EXPERIENCE	2.238***	(<0.001)	2.238***	(<0.001)
FIRMS.COVERED	3.165***	(<0.001)	3.172***	(<0.001)
F-test (p-value)			(0.030)	
Observations	9,878		9,878	
Psuedo-R^2	0.40		0.40	

Panel B: Demotion

	Dependent Variable Is Analyst Demotion, $DEMOTION_{t+1}$			
	Coeff.	*p-value*	*Coeff.*	*p-value*
TIMELY	**-1.645*** **	**(<0.001)**		
TIMELY.HighAIA			**-1.692*** **	**(<0.001)**
TIMELY.LowAIA			**-0.756** **	**(0.050)**
ACCURACY	-0.651***	(0.005)	-0.627***	(0.008)
BOLDNESS	0.548*	(0.083)	0.517	(0.111)
EXPERIENCE	0.327	(0.127)	0.306	(0.159)
FIRMS.COVERED	-0.313	(0.171)	-0.248	(0.265)
F-test (p-value)			(0.080)	
Observations	11,451		11,451	
Psuedo-R^2	0.18		0.19	

This table reports the results of estimating logistic Equations 5 and 6. In Panel A, the dependent variable, *ALL.STAR*, is an indicator that equals 1 if the analyst is named an all-star analyst in year t+1 and 0 otherwise. In Panel B, the dependent variable, *DEMOTION*, equals 1 if the analyst moves from a large brokerage to a small one in year t+1 and 0 otherwise. *TIMELY* is analyst timeliness relative to other analysts covering the firm. *TIMELY.HighAIA* (*TIMELY.LowAIA*) is analyst timeliness for announcements with high (low) attention relative to other analysts covering the firm. All variables are as defined in Appendix A. Values in brackets represent *p*-values. The regressions are estimated with broker and year fixed effects. Standard errors are clustered by broker. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests.

Table 7
Robustness Test: Within-Analyst and Within-Firm-Analyst Variation

	Dependent Variable Is the Indicator of Analyst Timely Forecast, *TIMELY*			
	Within-Analyst Variation		Within-Firm-Analyst Variation	
	Coeff.	*p-value*	*Coeff.*	*p-value*
AIA	**0.048*** **	**(<0.001)**	**0.031*** **	**(<0.001)**
EXPERIENCE	-0.110***	(<0.001)	-0.135***	(<0.001)
BROKERAGE.SIZE	0.001	(0.160)	0.000	(0.827)
FIRMS.COVERED	0.011***	(<0.001)	0.022***	(<0.001)
NEWS.ARTICLES	0.005**	(0.047)	0.011	(0.182)
SIZE	0.044***	(<0.001)	0.132***	(<0.001)
BTM	-0.041**	(0.034)	0.048	(0.252)
PAST.RETURN	-0.008	(0.508)	-0.037**	(0.019)
ABS.SURPRISE	5.764***	(<0.001)	5.613***	(<0.001)
BAD.NEWS	0.086***	(<0.001)	0.113***	(<0.001)
SPECIAL	-0.047***	(<0.001)	-0.025**	(0.016)
INST.OWNERSHIP	0.181***	(<0.001)	0.026	(0.473)
ANA.FOLLOWING	0.012***	(<0.001)	0.003	(0.216)
SVI	0.066***	(<0.001)	0.033***	(0.008)
EA.TIME	-0.059***	(<0.001)	-0.054***	(<0.001)
Fixed effects	Analyst, Year, and Day of the Week		Firm-Analyst, Year, and Day of the Week	
Observations	432,186		376,518	
Pseudo-R^2	0.02		0.01	

This table reports the results of estimating logistic Equation 2, where the indicator of an analyst's timely forecast, *TIMELY*, is regressed on abnormal institutional attention, *AIA*, and control variables. In the first column, the regression is estimated with analyst fixed effects, year fixed effects, and day of the week fixed effects. In the second column, the regression is estimated with firm-analyst fixed effects, year fixed effects, and day of the week fixed effects. Standard errors are clustered by analyst. The number of observations varies across columns because the estimation with fixed effects omits observations that show no variation within the fixed-effect group. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests.

Table 8
Using Expected Attention and Preannouncement AIA

	Dependent Variable Is the Indicator of Analyst Timely Forecast, *TIMELY*			
	Coeff.	*p-value*	*Coeff.*	*p-value*
EAIA	**0.078*** **	**(<0.001)**		
Preannouncement AIA			**0.042*** **	**(<0.001)**
EXPERIENCE	0.005**	(0.014)	0.005**	(0.011)
BROKER.SIZE	0.002***	(<0.001)	0.002***	(<0.001)
FIRMS.COVERED	0.006*	(0.098)	0.006	(0.101)
NEWS.ARTICLES	0.024***	(<0.001)	0.023***	(<0.001)
SIZE	-0.070***	(<0.001)	-0.068***	(<0.001)
BTM	-0.519***	(<0.001)	-0.520***	(<0.001)
PAST.RETURN	-0.009	(0.541)	-0.003	(0.849)
ABS.SURPRISE	0.220	(0.852)	0.476	(0.678)
BAD.NEWS	-0.056***	(<0.001)	-0.060***	(<0.001)
SPECIAL	0.092***	(<0.001)	0.086***	(<0.001)
INST.OWNERSHIP	0.198***	(<0.001)	0.219***	(<0.001)
ANA.FOLLOWING	0.012***	(<0.001)	0.013***	(<0.001)
SVI	0.271***	(<0.001)	0.268***	(<0.001)
EA.TIME	-0.033***	(<0.001)	-0.035***	(<0.001)
Observations	423,865		434,662	
Psuedo-R^2	0.02		0.02	

This table reports the results of estimating a logistic equation similar to Equation 2, except we replace current institutional attention, *AIA*, with expected attention, *EAIA*, (the first column) or *Preannouncement AIA* (the second column). *EAIA* is the mean AIA across the previous four earnings announcements. *Preannouncement AIA* is the mean AIA over days −3 to −1. Values in brackets represent *p*-values. The regressions are estimated with year fixed effects and day of the week fixed effects. Standard errors are clustered by analyst. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests.

Table 9
Analyst Resources and Experience

Panel A: Analyst Resources

	Dependent Variable Is the Indicator of Forecast Issued on the Earnings Announcement Day, *TIMELY.DAY0*			
	All Earnings Announcements		After-Hours Earnings Announcements	
	Coeff.	*p-value*	*Coeff.*	*p-value*
AIA*BIG.BROKER.SIZE	**0.038***	**(0.076)**	**0.081****	**(0.013)**
AIA	-0.002	(0.899)	-0.027	(0.201)
EXPERIENCE	0.004	(0.126)	-0.000	(0.906)
BROKER.SIZE	0.003***	(<0.001)	0.003***	(<0.001)
FIRMS.COVERED	0.008**	(0.037)	0.012**	(0.020)
NEWS.ARTICLES	0.024***	(<0.001)	0.014*	(0.059)
SIZE	-0.061***	(<0.001)	-0.004	(0.852)
BTM	-0.444***	(<0.001)	-0.501***	(<0.001)
PAST.RETURN	-0.007	(0.713)	-0.002	(0.948)
ABS.SURPRISE	-4.661***	(0.004)	1.321	(0.581)
BAD.NEWS	-0.067***	(<0.001)	-0.063***	(0.007)
SPECIAL	-0.005	(0.747)	-0.038	(0.164)
INST.OWNERSHIP	0.244***	(<0.001)	0.222***	(<0.001)
ANA.FOLLOWING	0.009***	(<0.001)	0.010***	(0.003)
SVI	0.147***	(<0.001)	0.140***	(<0.001)
EA.TIME	-0.149***	(<0.001)	-0.440***	(<0.001)
Observations	437,009		206,321	
Psuedo-R^2	0.08		0.05	

Panel B: Analyst Experience

	Dependent Variable Is the Indicator of Forecast Issued on the Earnings Announcement Day, *TIMELY.DAY0*			
	All Earnings Announcements		After-Hours Earnings Announcements	
	Coeff.	*p-value*	*Coeff.*	*p-value*
AIA*MORE.EXPERIENCE	**0.056*** **	**(<0.001)**	**0.058*** **	**(<0.001)**
AIA	-0.010	(0.267)	-0.010	(0.462)
EXPERIENCE	-0.006	(0.185)	-0.003	(0.610)
BROKER.SIZE	0.003***	(<0.001)	0.004***	(<0.001)
FIRMS.COVERED	0.008**	(0.019)	0.011**	(0.025)
NEWS.ARTICLES	0.023***	(<0.001)	0.012*	(0.088)
SIZE	-0.059***	(<0.001)	-0.008	(0.713)
BTM	-0.446***	(<0.001)	-0.507***	(<0.001)
PAST.RETURN	-0.007	(0.709)	-0.000	(0.995)
ABS.SURPRISE	-4.703***	(0.004)	1.236	(0.606)
BAD.NEWS	-0.068***	(<0.001)	-0.061***	(0.009)
SPECIAL	-0.006	(0.726)	-0.041	(0.137)
INST.OWNERSHIP	0.237***	(<0.001)	0.211***	(<0.001)
ANA.FOLLOWING	0.009***	(<0.001)	0.010***	(0.003)
SVI	0.147***	(<0.001)	0.139***	(<0.001)
EA.TIME	-0.149***	(<0.001)	-0.438***	(<0.001)
Observations	436,630		206,121	
Psuedo-R^2	0.09		0.05	

This table reports the results of estimating logistic Equations 8 and 9, where the dependent variable is an indicator of an analyst's forecast being issued on the earnings announcement day, *TIMELY.DAY0*. In the first column, the regression is estimated across all observations. In the second column, the regression is estimated across observations in which the earnings announcement is made after trading hours. Values in brackets represent *p*-values. The regressions are estimated with year fixed effects and day of the week fixed effects. Standard errors are clustered by analyst. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests.