Analyst interest as an early indicator of firm fundamental changes and stock returns[♠]

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Abstract

In this study, we propose that an increase in analyst interest in a firm—measured by the onset of analysts who do not cover a firm but participate on that firm's earnings conference call—is an early indicator of improvement in a firm's future fundamentals and capital market activities. We find that a change in analyst interest is positively associated with future changes in earnings and sales. Analyst interest also precedes changes in capital market activities such as analyst coverage, institutional ownership, and trading volume. Finally, we find that analyst interest is positively correlated with future stock returns. Overall, our results suggest that analyst interest is a leading indicator of firm fundamentals and offers a one-step-ahead advantage in analyzing stock market dynamics.

Keywords: analyst interest, firm fundamentals, analyst coverage, institutional ownership, trading volume, stock returns

JEL: G11, G12, G14, G31, M41

I. INTRODUCTION

A large literature examines the link between firm fundamentals and future stock returns (e.g., Ou and Penman 1989; Bernard and Thomas 1990; Holthausen and Larcker 1992; Sloan 1996; Abarbanell and Bushee 1997, 1998; Piotroski 2000). Typically, the motivation for this line of research is that firm fundamentals are reflected in accounting data, which are informative about a firm's future cash flows, and that investors do not fully impound this information into stock prices. But since financial statement numbers are backward looking in nature, it is beneficial for investors to identify early indicators of firm fundamental changes that have not yet been reflected in financial statements. In this paper, we examine whether an increase in analyst interest—defined as the onset of sell-side equity analysts who do not cover a firm but participate on that firm's earnings conference call—serves as an early indicator of not only firm fundamental changes, but also future capital market activities and stock price movements.

Our focus on analyst interest stems from two observations. First, prior research shows that analysts are sophisticated industry experts (Mikhail et al. 1999; Asquith et al. 2005; Kadan et al. 2012). Given their deep industry knowledge, analysts are aware of firms' shifting competitive positions due to new entrants, products, customers, and markets, well before such information is reflected in financial statements. Second, before an analyst initiates coverage of a firm, he or she must conduct due diligence on the firm. The concept of analyst due diligence has not been explored in the prior literature, which is one aspect of the analyst black box (Ramnath, Rock, and Shane 2008; Bradshaw 2011) we examine. In particular, we highlight that analysts regularly participate on firms' earnings conference calls *before* they initiate coverage of the firms.[1] This common practice occurs because listening to, and asking a question on, a firm's

[1] Two examples come from our data. First, Asset Acceptance Capital Corp held its first ever earnings conference call with analysts on March 10, 2004. But as of that date, no sell-side analysts had initiated coverage of the firm. Yet

conference call is part of an extensive, and sometimes lengthy, due diligence process. For example, Sanford C. Bernstein & Co., a top-ranked sell-side equity research firm in Institutional Investor's annual All-American Research Survey, gives newly hired analysts up to one year to conduct due diligence on firms before initiating coverage of them (Koo 2012).

We posit that analyst conference call participation prior to coverage initiation captures early analyst interest, and thus, serves as an early indicator of improving firm fundamentals and capital market activities. Our proposition stems from two non-mutually exclusive theories. The first theory is from McNichols and O'Brien (1997), which shows that analysts allocate their effort toward firms in which they view future prospects to be favorable.[2] This theory suggests that analyst interest—our measure of early analyst effort—predicts positive future reported firm fundamentals and stock returns. The second theory is from Merton (1987), which shows that greater investor recognition of a firm leads to lower cost of capital for the firm and higher demand and valuation for its stock. This theory suggests that analyst interest in a firm leads to greater recognition among institutional investors (through more frequent conversations with analysts), which in turn leads to greater capital market activities (i.e., trading) and valuation of the stock.

While we focus on analyst conference call participation prior to coverage initiation, we also examine whether covering analysts who are absent from the call is a possible early indicator of declining analyst interest. However, we note that while the concept of analyst due diligence

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during the Q&A portion of the call, there were six people who asked management a question. According to the transcript, three of the questioners were identified as sell-side analysts, one was a buy-side analyst, and two provided no employer affiliation. After that conference call, two of the sell-side analysts subsequently initiated coverage of the firm, one on March 16 (Buy rating) and the other on April 2 (Outperform rating). A second example is for Bebe Stores Inc., which had seven sell-side analysts participate on its April 22, 2002 earnings conference call, six of which officially covered the firm. The one analyst who did not yet cover the firm subsequently initiated coverage on May 1, 2002 (Market Perform rating).

[2] Consistent with this notion, Ertimur, Muslu, and Zhang (2011) document that coverage initiations are mostly started with a buy rating. In particular, about 68% of initiations are started with a Strong Buy or Buy rating, compared to 3% of initiations started with a Strong Sell or Sell rating.

suggests that analysts participate on a firm's conference call before initiating coverage of that firm, it does not necessarily suggest that an analyst would be absent from a conference call before dropping coverage of that firm because the analyst could just as plausibly drop coverage before being absent from the call. In addition, covering analysts may not participate in every conference call, suggesting larger measurement errors in a measure of analyst disinterest. As a result, tests of analyst "absenteeism" are likely to be less powerful than that for analyst due diligence.

While most indicators of an analyst's early interest or disinterest in a firm are unobservable, conference call participation is observable through available transcripts. Conceptually, our analyst interest measure is based on an observable aspect of analysts' due diligence process prior to their formal issuance of forecasts, a price target, and a stock recommendation to the public. Also, our analyst interest measure has two appealing practical attributes. First, it is known that almost all questioners are sell-side equity analysts, who are considered to be sophisticated and informed market participants.[3] Second, virtually all public firms hold quarterly earnings conference calls, which allows for a large sample of firms with variation in size and existing levels of analyst following.

Using a sample of conference call transcripts from 2002 through the first quarter of 2009, we create two measures to capture analysts' early interest and disinterest in a firm. We define *NC_ANALYSTS* as the number of non-covering analysts on the conference call and *COV_ANALYSTS_ABSENT* as the number of covering analysts who were on the prior quarter's conference call but are absent from the current conference call, both scaled by the total number

[3] We find that over 92% of the questioners on earnings conference calls are affiliated with a sell-side brokerage firm. The remaining questioners are either institutional investors (buy-side analysts) or not identifiable due to a vague or incomplete name or affiliation

of callers on the current conference call.[4] We find that *NC_ANALYSTS* is positively related to proxies for firm fundamental changes (future earnings-per-share (EPS) surprises and future changes in sales) up to four quarters ahead, after controlling for other factors. We also find that *NC_ANALYSTS* is positively associated with a change in next quarter's analyst coverage, institutional ownership, and trading volume. The results are consistent with our prediction that analyst interest is an early indicator of improving reported firm fundamentals and capital market activities associated with the stock. Finally, we find that *NC_ANALYSTS* predicts future stock returns, over and above earnings surprises, size, the book-to-market ratio, past 11-month return, and after controlling for the aforementioned changes in capital market activities. Subsequent three-month stock returns increase monotonically from 1.69% in the bottom *NC_ANALYSTS* quartile to 3.56% in the top quartile, resulting in a hedge portfolio return of 1.87% (*t*-stat=3.66). After controlling for common return factors, the hedge portfolio yields a significant abnormal return of 0.475% per month or 5.7% per year. The magnitudes of hedge returns are economically significant, especially given the fact that many stock trading strategies did not work well in the past ten years (e.g., Green, Hand, and Soliman 2011).[5]

In contrast, *COV_ANALYSTS_ABSENT* exhibits no statistical association with the two proxies for firm fundamental changes, EPS surprises and sales growth. However, it is significantly and negatively related to a change in next quarter's analyst coverage and institutional ownership (its negative relation with trading volume is insignificant). These findings provide some evidence that a drop in analyst interest is an early indicator of a decrease in capital market activities. We also find that *COV_ANALYSTS_ABSENT* predicts future stock returns.

[4] We require covering analysts to have been on the previous conference call to distinguish them from covering analysts who never participate on a firm's conference call.

[5] Plenty of anecdotal evidence suggests poor performance for quantitative-based trading strategies. For example, Goldman Sachs closed its Global Alpha hedge fund that relied on computer-driven trading strategies in 2011.

Subsequent three-month stock returns decreases from 3.15% in the bottom *COV_ANALYSTS_ABSENT* quartile to 1.48% in the top quartile, resulting in a return difference of -1.67% (*t*-stat=2.86).

We rule out a number of alternative explanations for our results, including confounding information, upward trend in conference call coverage, microstructure effects, and investor overreaction. We also conduct several additional tests and robustness checks. We partition our sample into three groups based on the level of existing analyst coverage and find the effects of analyst interest to be more pronounced for low-coverage ("neglected") firms. We also find that our results are robust to alternative specifications of the analyst interest variables. Finally, we show that our results are not driven by IPO firms or fourth-quarter observations.

This study contributes to the extant literature in three unique ways. First, it adds to the literature examining the link between fundamental information and future stock returns. Since financial statements are backward looking, accounting information may not be timely with respect to certain changes in firm fundamentals. In particular, we propose an early and novel indicator of a firm's fundamental changes that have not yet been reflected in financial statements. We show that an awareness of changing analyst interest in a firm can provide investors a one-step-ahead advantage in analyzing stock market dynamics. Second, our study contributes to the literature on sell-side analysts by highlighting one aspect of their due diligence process prior to their formal issuance of forecasts, price targets, and stock recommendations to the public and, hence, adds to our understanding of the role analysts play in the capital markets. Our analyst interest measure, based on pre-coverage due diligence activity, also distinguishes our study from the prior literature on analyst discrimination (e.g., Mayew 2008 and Cohen et al. 2013) because the views of the non-covering analysts are not yet known to the executives prior

to the conference calls (at least in terms of a published rating on the stock). Finally, prior studies have documented the information content of conference calls and their effects on analysts covering the firms (Frankel et al. 1999; Bowen et al. 2002; Bushee et al. 2003; Kimbrough 2005). Our study adds to the conference call literature by highlighting that participation by analysts can be a measure of their interest in the firm and informative about their future coverage decisions.

This paper continues as follows. The next section develops testable hypotheses. Section III describes the sample and variable construction. Section IV presents the empirical findings. Section V discusses alternative explanations and robustness tests. We conclude in Section VI.

II. HYPOTHESIS DEVELOPMENT

Prior studies have extensively examined the link between accounting data in financial statements and future stock returns. For example, Bernard and Thomas (1989, 1990) find that investors do not fully understand the implications of current earnings for future earnings, leading to predictable return drift in the four quarters subsequent to earnings announcements. Similarly, Sloan (1996) shows that investors do not understand the differential implications of the accrual and cash flow components of current earnings for future earnings. Hence, a hedge portfolio based on accounting accruals exhibits significant abnormal returns. Ou and Penman (1989) and Abarbanell and Bushee (1997) show that fundamental signals constructed from accounting numbers have predictive power for future earnings and thus predict future stock return. Similarly, Holthausen and Larcker (1992) and Lev and Thiagarajan (1993) also find that accounting-based fundamental signals are value-relevant over contemporaneous earnings. Finally, Abarbanell and Bushee (1998) find that a trading strategy based on these fundamental

signals generates an average 12-month cumulative size-adjusted return of 13.2%, suggesting that contemporaneous stock returns do not fully reflect the implications of the fundamental signals for future earnings. In sum, this literature establishes that predicting firm fundamentals is central to the fundamental analysis and valuation of stocks.

One of the most important roles for sell-side equity analysts is to predict firms' future fundamentals and stock valuations (Bradshaw 2011; Brown et al. 2014). Given their deep industry knowledge, analysts are aware of firms' shifting competitive positions due to new entrants, products, customers, and markets, well before such information is reflected in financial statements and stock prices. Accordingly, their analyses and predictions published in written reports have been shown to be informative to the markets (Mikhail et al. 1999; Asquith et al. 2005; Kadan et al. 2012). We explore an important institutional feature within the analyst coverage process. Specifically, before analysts initiate coverage of a stock, they require a certain amount of time (several months to a year) and effort to become informed about the firm (i.e., conduct due diligence). To illustrate this point, Figure 1 shows a timeline for analyst due diligence and coverage initiation. From the time an analyst first becomes aware of a firm to when he or she begins the due diligence process can be from zero days (begins immediately) to an unspecified number of days. Then, the amount of time to complete due diligence before an initiation report can be drafted and published varies from a minimum of several weeks to one year.[6] Since earnings conference calls occur every quarter, there is ample opportunity for an analyst to participate on a firm's call before publishing an initiation report. Thus, an indication of

[6] Obviously, analysts vary in their experience and speed to initiate coverage of firms. However, we argue that based on conversations with a number of sell-side analysts, a lower bound of three weeks is not unreasonable to assume for the amount of due diligence that an analyst typically performs prior to their initiation of coverage. Due diligence tasks can include analyzing past financial statements, preparing models and forecasts, visiting company sites, meeting with management, listening to archived conference calls, drafting and editing an initiation report, and receiving approval from the brokerage firm's research executive management prior to initiation. The upper bound of 365 days is based on anecdotes of Sanford C Bernstein & Co., allowing newly hired analysts up to one year to learn about a firm prior to initiation of coverage (Koo 2012).

the analyst's interest in a firm based on his or her participation on a quarterly earnings conference call captures an observable aspect of the analysts' due diligence process that occurs prior to an actual coverage initiation.

Our proposition that early analyst interest predicts future fundamental changes, capital market activities, and future stock returns is grounded on two non-mutually exclusive theories. The first theory is from McNichols and O'Brien (1997), which shows that analysts allocate their effort toward firms in which they view future prospects to be favorable. The fact that over two-thirds of analyst coverage initiations are started with a Buy or Strong Buy rating (Ertimur et al. 2011) is consistent with analysts having exerted effort to learn about and initiate coverage of firms in which the positive fundamentals are not yet reflected in financial statements or stock prices. This theory suggests that analyst interest—our measure of early analyst effort—should predict positive future reported firm fundamentals and stock returns. The second theory is from Merton (1987), which shows that greater investor recognition of a firm leads to lower cost of capital for the firm and higher demand and valuation for its stock. This theory suggests that analyst interest in a firm leads to greater recognition among institutional investors (through more frequent conversations with analysts), which in turn leads to greater capital market activities (i.e., trading) and valuation of the stock.[7]

Among the two theories, only the one explained by McNichols and O'Brien (1997) predicts that early analyst interest should be associated with a future change in firm fundamentals. This difference provides us with one prediction by which to distinguish the two theories. Analysts' participation in corporate conference calls (prior to coverage initiation) captures their pre-initiation effort and favorable view on the firm's prospects. Such views can be

[7] Lehavy and Sloan (2008), Da, Engelberg and Gao (2011) and Drake, Roulstone, and Thornock (2012) document evidence consistent with the prediction of Merton (1987)'s investor recognition story.

eventually discussed in the analysts' written initiation reports and reflected in their forecasts of sales and earnings. Under similar logic, it is possible for analysts to foresee negative prospects for a firm and lose interest in participating on a firm's earnings conference call, which can lead to a downgrade or termination of coverage. In sum, we conjecture that changes in analyst participation in a firm's conference call capture changes in overall analyst interest in a firm and their assessment of the firm's prospects, thereby predicting future firm fundamentals.

Prediction 1: A change in analyst interest is associated with a change in firm fundamentals.

In contrast to the first prediction, both theories suggest that early analyst interest predicts subsequent capital market activities. Under the McNichols and O'Brien theory, some of the non-covering analysts who participated in a firm's conference calls due to expectations of improving fundamentals will eventually initiate coverage of the firm. Increased analyst coverage, especially with positive recommendations, will attract more institutional investors and institutional trading in the stock. Under the Merton theory, more institutional investors will become informed about a firm's prospects through conversations with the analysts. With increased interest from institutional investors, future trading volume also increases. All in all, these interactions between analysts and investors suggest that early analyst interest predicts changes in capital market activities, such as analyst coverage, institutional ownership, and trading volume.

Prediction 2: A change in analyst interest is associated with a change in analyst coverage, institutional ownership, and trading volume.

Finally, both theories suggest that early analyst interest predicts future stock returns. Under the McNichols and O'Brien theory, analysts follow firms with positive prospects and future stock prices will reflect the improving firm fundamentals. Under the Merton theory, analyst interest leads to greater recognition from institutional investors. When these investors

become familiar with a firm, a lower cost of capital and an increased demand for its stock will be positively associated with future stock performance.

Prediction 3: A change in analyst interest is associated with a change in future stock price.

In summary, we posit that changes in analyst interest capture improvements in firm fundamentals that have not yet been reflected in financial statements, and thus, serve as an early indicator of changes in firm fundamentals, capital market activities and stock price movements.

III. DATA AND VARIABLE DEFINITIONS

Our data is comprised of firms with available conference call transcripts from the Thompson Financial StreetEvent database from the first quarter of 2002 through the first quarter of 2009. The transcripts contain identification information about the firm managers on the call, as well as the name and affiliation of anyone who asked a question during the question and answer (Q&A) portion of the call.[8] There are transcripts from many types of conference calls, including calls about technology announcements, sales and marketing initiatives, mergers and acquisitions, restructurings, and earnings announcements. However, many of the non-earnings calls do not have a Q&A portion. Therefore, we use only the transcripts of quarterly earnings conference calls of U.S. firms, resulting in a sample of 55,565 conference calls from 3,370 firms.[9] Table 1, Panel A provides a breakdown of the sample conference calls by year and quarter.[10]

[8] A better measure of analyst participation in a firm would be the number of analysts who dial into and listen to the firm's earnings conference call. However, such information is not available on transcripts. Hence, the number of analysts who dial into and ask a question is the next best alternative.

[9] We require that the date of a firm's conference call (from Thomson) be the same or one day later than the date of the earnings announcement provided by Compustat. We find that 78% of the conference calls occur on the same date as the earnings announcement and 22% occur on the next day.

[10] Any firm that hosts an earnings conference call in which there are no analysts who ask a question is excluded from our sample. Such exclusions are rare, as we find that 97.5% of U.S. firm-earnings conference calls transcripts

From each firm's conference call transcript, we identify those on the call that are sell-side equity analysts using two procedures. First, a caller is identified as an analyst if the last name, first initial, affiliation, and the firm's ticker symbol match the equivalent information contained in the I/B/E/S Detail Recommendation database. For cases in which there is no match, we check for possible misspellings of the names and affiliations on the transcripts and manually identify the callers as analysts when it is obvious that the initial mismatch was due to a simple misspelling. Based on the I/B/E/S data, we identify 80.5% of the callers as sell-side analysts. Second, callers are also identified as sell-side analysts if their affiliation is a brokerage firm that does not report to I/B/E/S, including Merrill Lynch, Lehman Brothers, BB&T Capital Markets, Wachovia and SG Cowen. We identify 11.7% of the callers as non-IBES sell-side analysts. The remaining 7.8% of callers are either institutional investors or buy-side analysts (based on their affiliation) or not identifiable due to a vague or incomplete name or affiliation.

For each caller identified as a sell-side equity analyst tracked by I/B/E/S, we obtain the unique analyst code used by I/B/E/S to identify that analyst's earnings estimates or recommendations for a given firm. With this information, we can determine whether or not the analyst on the earnings conference call has initiated coverage of the firm prior to the date of the conference call. Specifically, if an analyst is on a firm's earnings conference call but has not yet issued any earnings estimates or recommendations anytime during the 12 months prior to the call, then we classify that analyst as a non-covering analyst. All other analysts have issued earnings estimates or recommendations prior to the conference call and are classified as covering analysts. Since we cannot determine the coverage status for non-IBES analysts, we exclude them from our analysis.

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in Thomson's StreetEvents database from the first quarter of 2002 through the first quarter of 2009 are included in our final sample (55,565 out of 56,994 firm-conference calls).

For each conference call, we define *NC_ANALYSTS* as the number of non-covering analysts and *COV_ANALYSTS* as the number of covering analysts, both scaled by the total number of callers (*NUMCALLERS*) who appear on the conference call transcript. We also construct a measure of sell-side analysts who cover a company but are *absent* from a conference call. In particular, we define *COV_ANALYSTS_ABSENT* as the number of covering analysts who were on the prior quarter's conference call but are absent from the current conference call, scaled by the total number of callers on the current conference call. Descriptive statistics of these variables are provided in Table 1, Panel B. The mean number of callers is 5.1, of which 1.1 are non-covering analysts and 4.0 are covering analysts. The mean values of *NC_ANALYSTS* and *COV_ANALYSTS* are 0.25 and 0.75, respectively. Unscaled *COV_ANALYSTS_ABSENT* has a mean value of 1.2 and a scaled mean value of 0.30.

To measure firm fundamentals, capital market activities, and future stock returns, we retrieve actual and forecasted earnings-per-share (EPS) data from I/B/E/S, Form 13F institutional holdings data from Thomson Reuters, financial statement data from Compustat, and stock data from CRSP. In particular, we use EPS surprises and sales growth to proxy for firm fundamental changes. We measure EPS surprises (ΔEPS_x) as the seasonal difference in diluted EPS excluding extraordinary items, measured one to four quarters after the conference call ($x=t+1$, $t+2$, $t+3$, and $t+4$), scaled by the firm's stock price on the last day of the fiscal quarter ended prior to the conference call. Similarly, we measure sales growth as the seasonal percentage change in quarterly sales ($SGROWTH_x$), measured one to four quarters after the conference call ($x=t+1$, $t+2$, $t+3$, and $t+4$).

We use analyst coverage, institutional ownership, and trading volume to capture capital market activities. To capture existing analyst coverage at the time of a given conference call, we

measure the number of analysts (NAN_t) that issued an earnings estimate to I/B/E/S anytime between the previous conference call date and one day before the current conference call. We measure next quarter's change in analyst coverage ($CNAN_{t+1}$) as the percentage change in *NAN* from quarter *t* to *t+1*. Thus, $CNAN_{t+1}$ requires one lag quarter of data and captures the change in total analyst coverage from the period before the conference call (roughly three months) to the period after the conference call. Similarly, institutional ownership (NII_t) is defined as the number of institutions that report ownership of the stock in the Thomson Reuters Form 13F database, measured as of the most recent calendar quarter ended prior to the firm's conference call. We compute next quarter's change in institutional investors ($CNII_{t+1}$) as the percentage change in *NII* from the calendar quarter ended prior to the conference call to the calendar quarter ended after the conference call. We define a firm's next quarter change in trading volume turnover ($CTURNOVER_{t+1}$) as the change in average daily turnover (volume divided by shares outstanding) from the ninety calendar days before to the ninety days after the conference call, expressed in percentage terms.

We measure future stock returns (*RET*) as the return over the three-month period [*m*+1, *m*+3], where month *m* is the month that the conference call occurs. In robustness checks, we also consider two- and three-quarter-out stock returns, which are measured over the [*m*+4, *m*+6] and [*m*+7, *m*+9] windows, respectively.

We define several control variables, including firm and stock characteristics measured prior to the conference call. When testing the association between analyst interest and future EPS surprises and sales growth, we control for the current quarter's EPS surprise and sales growth. We also control for firm size (*SIZE)* using the logarithm of market value of equity, performance (*ROA)* with income before extraordinary items divided by total assets, valuation (*BTM)* using the

book value of equity divided by market value of equity, and leverage (*LEVERAGE)* with the book value of debt divided by the book value of equity. Data for these variables come from Compustat and are measured as of the most recent fiscal quarter ended prior to the conference call. *PASTRET* is the size-adjusted return (raw return less return of the corresponding size decile) for the period [-91, -1] where day 0 is the date of the conference call, based on daily trading data from CRSP. In the regressions of future capital market activities, we also control for stock volatility (*VOLATILITY*), defined as the standard deviation of daily size-adjusted returns for the period [-91, -1]. In the stock return regressions, we control for the most recent earnings surprise (*ENEWS*), *SIZE*, *BTM*, and the past 11-month return ($RET_{m-1,m-11}$) from the [*m*-11, *m*-1] period, where *m* is the month in which the conference call occurred. We measure *ENEWS* as the difference between the reported EPS and the latest consensus I/B/E/S forecast issued prior to the earnings announcement, deflated by the prior quarter's ending stock price. Lastly, in the four-factor model, we use the $R_{Mt} - R_{ft}$, *SMB*, and *HML* factors as defined in Fama and French (1996) and the momentum factor (*MOM*) as defined in Carhart (1997). The four-factor data are from Kenneth French's website. An appendix summarizes all the variable definitions described above.

Table 1, panel B shows descriptive statistics of the variables. The median values for ΔEPS_{t+1} and $SGROWTH_{t+1}$ are 0.00 and 0.10, respectively, indicating that firms are exhibiting more top line growth than bottom line growth. The median firm is covered by six analysts (median *NAN*=6). The mean and median future percentage change in the number of analysts ($CNAN_{t+1}$) is 0.05 and 0.00, respectively, and the interquartile range is from -0.06 to 0.13. These results indicate that for the median firm, analyst coverage is stable from quarter to quarter, but there is variation and a slightly right-skewed distribution in the change variable. The mean (median) $CNII_{t+1}$ is 0.02 (0.01), indicating that the number of institutional investors, on average,

increases about one to two percent each quarter for our sample firms. $CTURNOVER_{t+1}$ has a mean value of 0.04%, indicating a small increase in daily trading volume each quarter, on average, for the sample firms.

Panel C in Table 1 shows pair-wise correlations. As expected, *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* are significantly and negatively correlated. Furthermore, *NC_ANALYSTS* is significantly positively correlated with future changes in firm fundamentals (ΔEPS_{t+1} and $SGROWTH_{t+1}$) and capital market activities ($CNAN_{t+1}$, $CNII_{t+1}$, $CTURNOVER_{t+1}$). On the other hand, *COV_ANALYSTS_ABSENT* is significantly negatively correlated with $SGROWTH_{t+1}$, $CNAN_{t+1}$, $CNII_{t+1}$, and $CTURNOVER_{t+1}$. In terms of the six control variables, only two pairs are highly correlated with each other with a correlation coefficient above |0.40|: *SIZE* and *VOLATILITY*, and *LEVERAGE* and *BTM*.[11]

IV. EMPIRICAL ANALYSES

Future Change in Firm Fundamentals

In the first part of our analysis, we examine whether *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT*, the variables that capture analyst interest and analyst disinterest, respectively, have predictive power for future changes in firm fundamentals. Our two proxies for a change in firm fundamental are EPS surprises (ΔEPS_x), computed as the seasonally-adjusted EPS changes, and quarterly sales growth ($SGROWTH_x$), both measured from one to four quarters after the conference call ($x=t+1$, $t+2$, $t+3$, and $t+4$). We estimate the following regression model (firm subscripts are suppressed for brevity):

$$CFUNDA_x = \beta_0 + \beta_1 NC\_ANALYSTS_t + \beta_2 COV\_ANALYSTS\_ABSENT_t$$

[11] In subsequent regression analysis, we conduct multicollinearity diagnostics whenever explanatory variables have correlations above |0.4|. In each case, we find that the variance inflation factors are below 2 for the variables tested, suggesting that multicollinearity is not an issue.

$$+ \beta_3 CFUNDA_t + \beta_4 SIZE_t + \beta_5 ROA_t + \beta_6 BTM_t + \beta_7 LEVERAGE_t$$

$$+ \beta_8 PASTRET_t + Year\ Fixed\ Effects + \varepsilon\ , \quad (1)$$

where $CFUNDA_x$ is either ΔEPS_x or $SGROWTH_x$ ($x=t+1$, $t+2$, $t+3$, or $t+4$). Prediction 1 states that the estimated coefficients on $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ should be positive and negative, respectively.

We control for the current quarter change in firm fundamental $CFUNDA_t$ ($=\Delta EPS_t$ or $SGROWTH_t$). The estimated coefficient on $CFUNDA_t$ depends on the time-series property of $CFUNDA_t$. For ΔEPS, which is the seasonal difference in EPS scaled by stock price, we expect it to be serially correlated in the first three lags with a negative correlation in the fourth lag (Bernard and Thomas 1989). For *SGROWTH*, we expect it to follow an autoregressive process. Hence, the estimated coefficient will be nonnegative and decreasing with x. We include other contemporaneous firm characteristics to control for cross-sectional differences among firms that explain the variations in $CFUNDA_x$, although the relations between such factors and EPS surprises and sales growth may differ. Firm size (*SIZE*) captures a firm's market power and competitive position, which should be positively associated with earnings power (ΔEPS_t). However, smaller firms generally have higher sales growth potential than large firms and, hence, we expect *SIZE* to be negatively associated with $SGROWTH_t$. Operating performance (*ROA*) is expected to have negative coefficients as firms with high existing levels of earnings are less likely to have higher EPS surprises and sales growth. Book-to-market (*BTM*) is a proxy for a firm's investment opportunity set. Since firms with low *BTM* exhibit higher growth, we expect a negative coefficient on *BTM*. Leverage (*LEVERAGE*) captures the capital structure of the firm, and all else equal, firms with higher leverage should exhibit higher earnings growth, but the expected effect of $LEVERAGE_t$ on sales growth is less clear. We include past stock return

(*PASTRET*) to control for confounding events that occurred during the period since the prior conference call. In particular, industry-specific news or managerial voluntary disclosures may drive both analyst interest and future firm fundamentals.[12] We expect $PASTRET_t$ to have a positive coefficient. These variables are defined in Section III and the appendix.

Table 2 Panel A shows the estimation results of the ΔEPS_x regressions. We cluster standard errors by firm (Rogers 1993). Columns (1) through (4) show that the estimated coefficients on *NC_ANALYSTS* are significantly positive when ΔEPS is measured for the next fourth quarters. The magnitude of the estimated coefficient (0.009) under column (1) suggests that moving *NC_ANALYSTS* from the first quartile to the third quartile would translate into a 0.34% (=0.009×0.38) increase in ΔEPS, which represents 17.1% (=0.0034/0.02) of the interquartile range in one-quarter-ahead ΔEPS. These results are consistent with analyst interest having predictive power for ΔEPS in the next four quarters. In contrast, *COV_ANALYSTS_ABSENT* does not exhibit a significant explanatory power for future ΔEPS. As discussed earlier, the concept of analyst due diligence suggests that analysts participate on a firm's conference call before initiating coverage of that firm, but it does not necessarily suggest that an analyst would be absent from a conference call before dropping coverage of that firm because the analyst could just as plausibly drop coverage before being absent from the call. In addition, covering analysts may not participate in every conference call, suggesting larger measurement error in our measure of analyst disinterest.

Consistent with the results from prior literature (e.g., Bernard and Thomas 1989), ΔEPS_t exhibits a positive estimated coefficient in the ΔEPS_{t+1} and ΔEPS_{t+2} regressions and a negative coefficient in the ΔEPS_{t+4} regression. Moreover, ROA_t and BTM_t exhibit a negative association

[12] We thank an anonymous reviewer for pointing out this possibility and offering this solution.

with ΔEPS in the next four quarters, while $PASTRET_t$ has a positive association. Finally, the estimated coefficient on *SIZE* is significantly positive only for ΔEPS_{t+4} regression.

Table 2 Panel B shows the results of the $SGROWTH_x$ regressions. Columns (1) through (4) indicate that *NC_ANALYSTS* is positively associated with sales growth one to four quarters later, with the coefficient highest for two quarters out ($SGROWTH_{t+2}$). In terms of economic significance, the estimated coefficient of 0.038 on *NC_ANALYSTS* in the $SGROWTH_{t+2}$ regression (Column 2) suggests that moving *NC_ANALYSTS* from the first quartile to the third quartile would translate into a 1.44% (=0.038×0.38) increase in sales growth two quarters later, which represents 6.00% (=0.0144/0.24) of the interquartile range in future sales growth. These findings suggest that firms with increased analyst interest are associated with sales growth over the next one to four quarters. Similar to the results reported in Panel A for ΔEPS, *COV_ANALYSTS_ABSENT* also exhibits no association with future sales growth. As for the control variables, the sign and significance of the estimated coefficients are qualitatively similar to those reported in Panel A.

Overall, we find that *NC_ANALYSTS* is positively related to future EPS surprises and sales growth, whereas *COV_ANALYSTS_ABSENT* exhibits no predictive power with respect to changes in future fundamentals.

Future Change in Capital Market Activities

Next, we examine whether a change in analyst interest has predictive power for future changes in capital market activities, such as analyst coverage, institutional ownership, and trading volume, using the following regression model (firm subscripts are suppressed):

$$CMACTIVITY_{t+1} = \beta_0 + \beta_1 NC\_ANALYSTS_t + \beta_2 COV\_ANALYSTS\_ABSENT_t + \beta_3 CMACTIVITY_t + \beta_4 SIZE_t + \beta_5 ROA_t + \beta_6 BTM_t + \beta_7 LEVERAGE_t \quad (2)$$

$$+ \beta_8 PASTRET_t + \beta_9 VOLATILITY_t + Year\ Fixed\ Effects + \varepsilon$$

where $CMACTIVITY_{t+1}$ takes one of the following three variables: $CNAN_{t+1}$, $CNII_{t+1}$, *or* $CTURNOVER_{t+1}$. $CNAN_{t+1}$ is the percentage change in the number of analysts covered the firm, $CNII_{t+1}$ is the percentage change in the number of institutional investors that owned the firm's stock, and $CTURNOVER_{t+1}$ is the percentage change in the average daily trading volume as a percentage of total shares outstanding. Prediction 2 states that the estimated coefficients on *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* should be positive and negative, respectively.

We include the contemporaneous change in capital market activity, $CMACTIVITY_t$ (=$CNAN_t$, $CNII_t$, *or* $CTURNOVER_t$) to address any serial correlation issues. We control for other firm characteristics that help explain the cross-sectional variations in $CMACTIVITY_{t+1}$. In particular, prior studies find that larger firms (*SIZE*) are positively related to existing levels of analyst coverage and institutional ownership (e.g., O'Brien and Bhushan 1990). As such, we expect future changes in coverage and ownership to be smaller for larger firms. Operating performance (*ROA*) attracts the interest of analysts and institutional investors, and thus, is expect to be positively related to changes in next quarter's capital market activities. Book-to-market (*BTM*) proxies for investment opportunity set and it is expected to be negatively associated with changes in capital market activities. Leverage (*LEVERAGE*) captures the capital structure of the firm. As in equation (1), we include past stock return (*PASTRET*) to control for confounding events that occurred since the prior conference call date. We expect the estimated coefficient on $PASTRET_t$ to be positive. We include one additional control variable, past stock volatility (*VOLATILITY*), which we expect to have a negative association with future changes in capital market activities because volatile stocks are less attractive to investors.

Table 3 summarizes the estimation of equation (2). Column (1) reports the results for the $CNAN_{t+1}$ regression. Consistent with our expectation, the estimated coefficient of 0.085 on *NC_ANALYSTS* is significant at the 1% level (*t*-stat=11.06). The magnitude of the coefficient suggests that moving *NC_ANALYSTS* from the first quartile to the third quartile would translate into a 3.23% increase (=0.085×0.38) in analyst coverage. Since the interquartile range of $CNAN_{t+1}$ is 0.19 (Table 1 Panel B), the marginal effect of $NC\_ANALYSTS_t$ represents 17.0% (=0.032/0.190) of that range. On the other hand, the estimated coefficient on *COV_ANALYSTS_ABSENT* is -0.046 (*t*-stat=-15.34). Hence, moving *COV_ANALYSTS_ABSENT* from the first quartile to the third quartile would translate into a 1.84% reduction (=-0.046×0.40) in the number of analysts following, or 9.68% (=0.0184/0.190) of the interquartile range in $CNAN_{t+1}$.

While this absolute change may not appear economically significant, we note two relevant benchmarks. First, the magnitude of the incremental increase is comparable to prior work, which typically finds a mean change in analyst coverage of less than one analyst after a disclosure event (e.g., Francis et al. 1997; Healy et al. 1999; Irani and Karamanou 2003; Bushee et al. 2011). Second, the potential for increases in analyst coverage among our sample firms is not large, on average, because the mean number of analysts is 7.9 and the median is 6.0 (Table 1 Panel B) and analyst coverage is very stable over time. Thus, one should expect an *unconditional* increase of less than one analyst per quarter in the first place. Untabulated analysis shows that about 20% of non-covering analysts initiate coverage within one year of showing up on a firm's earnings conference call for the first time.[13]

[13] We view such a "conversion rate" to be significant for several reasons: (1) generally, many analysts dial into many firms' conference calls because the cost is relatively low (just the time required); (2) not every analyst participating on the conference call will ultimately initiate coverage for various reasons, and when analysts do

Regarding the control variables, column (1) shows that all the control variables significantly explain changes in analyst coverage over the next quarter. In particular, firms that have already experienced greater increases in analyst coverage, large in size, and have high book-to-market and volatility exhibit a decrease (or a smaller increase) in future analyst coverage. Moreover, firms with high operating performance, leverage, and past returns exhibit higher increases in analyst coverage over the next quarter. Thus, the aforementioned results for *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* are incremental to observable firm fundamentals and stock characteristics.

In column (2), we report the regression results for the percentage change in the number of institutional investors, $CNII_{t+1}$. We find a positive coefficient of 0.008 (*t*-stat=3.40) on *NC_ANALYSTS*, significant at the 1% level. In other words, moving *NC_ANALYSTS* from the first quartile to the third quartile would translate into a 0.3% increase (=0.008×0.38) in the percentage of institutional ownership or 2.53% (=0.003/0.12) of the interquartile range in $CNII_{t+1}$. Furthermore, the estimated coefficient on *COV_ANALYSTS_ABSENT* is -0.004 (*t*-stat=-4.87). Hence, moving *COV_ANALYSTS_ABSENT* from the first quartile to the third quartile would translate into a 0.16% decrease (=-0.001×0.40) in $CNII_{t+1}$, or 1.33% (=0.0016/0.12) of the interquartile range in $CNII_{t+1}$. We benchmark our result against prior studies that have documented increases of less than 1% in institutional ownership per quarter following changes in firms' information environment (Bushee and Noe 2000; Covrig et al. 2007; Bushee et al. 2011). For example, Lehavy and Sloan (2008) show that the unconditional average quarterly percentage change in institutional ownership for firms is nearly zero from 1982 to 2004, with a mean of 0.10% and a median of 0.00. Only in the highest two deciles of firms ranked by changes in

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decide to initiate coverage, it may take more than a year; and (3) analyst job changes and other reasons introduce measurement errors that reduce the conversion rate.

institutional ownership is the average greater than 0.29%. Therefore, we believe the economic significance of *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* in explaining $CNII_{t+1}$ is relatively large. The coefficients on the control variables are largely expected and similar to those reported under column (1), except that *LEVERAGE* exhibits no association with future increases in institutional ownership.

Finally, we examine if changes in analyst participation in conference calls are related to future changes in trading volume turnover in column (3). The estimated coefficient on *NC_ANALYSTS* is 0.022 and significant (*t*-stat=2.13), but that on *COV_ANALYSTS_ABSENT* is insignificant (*t*-stat=-0.53). Moving *NC_ANALYSTS* from the first quartile to the third quartile would translate into a 0.84% increase (=0.022×0.38) in $CTURNOVER_{t+1}$ or 2.88% (=0.008/0.29) of the interquartile range in $CTURNOVER_{t+1}$. All the control variables, except *BTM*, exhibit a significant association with the dependent variable.

Overall, consistent with our Prediction 2, we find that changes in analyst interest predict subsequent capital market activities. *NC_ANALYSTS* is positively related to future changes in analyst coverage, institutional ownership, and trading volume, whereas as *COV_ANALYSTS_ABSENT* is negatively related to future changes in analyst coverage and institutional ownership.

Future Stock Returns

Finally, we examine whether analyst interest predicts future stock returns. We first use regression analyses to test the predictive power of $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ for future stock returns. For each quarterly conference call, we calculate the three-month stock return (*RET*) from month *m*+1 to *m*+3, where month *m* is the

month during which the conference call occurs. We control for earnings news and common return factors in the following regression model:

$$RET = \beta_0 + \beta_1 NC\_ANALYSTS_t + \beta_2 COV\_ANALYSTS\_ABSENT_t + \beta_3 ENEWS_t + \beta_4 SIZE_t + \beta_5 BTM_t + \beta_6 RET_{m-1,m-11} + \varepsilon \quad (3)$$

where $ENEWS_t$ is reported EPS for the current quarter *t* minus the corresponding mean consensus forecast prior to the conference call, scaled by stock price on the consensus forecast date, $RET_{m-1,m-11}$ is stock return measured over the past 11 months, and the other variables are as defined under equation (1). Prediction 3 states that there should be a positive coefficient on $NC\_ANALYSTS_t$ and a negative coefficient on $COV\_ANALYSTS\_ABSENT_t$.

Table 4 reports the regression results. As predicted, column (1) shows that $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ are positively and negatively associated with future stock returns, respectively. In Column (2), we further control for contemporaneous changes in analyst coverage ($CNAN_t$), institutional ownership ($CNII_t$), and share turnover ($CTURNOVER_t$) under the premise that the contemporaneous changes in capital market activity also predict future stock returns and $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ are correlated with these variables. Column (2) indicates that both the magnitudes and significance of the estimated coefficients on $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ are not affected by the inclusion of $CNAN_t$, $CNII_t$, and $CTURNOVER_t$ in the regression model. In sum, the results presented in Table 4 confirm our conjecture that the analyst interest variables are early indicators of future stock returns. Regarding control variables, *ENEWS* has statistically positive coefficients, consistent with the positive link between fundamental news and stock returns. The coefficients on *SIZE* are negative and marginally significant, and the coefficients on *BTM* and $RET_{m-1,m-11}$ are statistically insignificant.

Next, we gauge the economic significance of the results by comparing subsequent three-month stock returns, *RET*, between the top and bottom quartiles of the analyst interest variables. Table 5 Panel A documents the findings. We find that *RET* increases monotonically from 1.69% in the bottom *NC_ANALYSTS* quartile to 3.56% in the top quartile. A return difference of 1.87% (*t*-stat=3.66) between the top and the bottom *NC_ANALYSTS* quartiles is both economically and statistically significant. On the contrary, *RET* decreases from 3.15% in the bottom *COV_ANALYSTS_ABSENT* quartile to 1.48% in the top quartile. A return difference of -1.67% (*t*-stat=-2.81) between the top and bottom *COV_ANALYSTS_ABSENT* quartiles is also significant.

Finally, we use a four-factor model to show that the aforementioned return differences are not attributed to common return factors. Since risk factors are available on a calendar month basis, we match $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ with stock returns in months *m+1*, *m+2*, and *m+3*, where *m* is the month of the conference call for each quarterly conference call. Then for each month, we independently sort the sample into four quartiles based on $NC\_ANALYSTS_t$ or $COV\_ANALYSTS\_ABSENT_t$, resulting in four $NC\_ANALYSTS_t$ and four $COV\_ANALYSTS\_ABSENT_t$ portfolios. We calculate portfolio returns, R_{it}, as the average stock returns of firms in each portfolio. Finally, we estimate abnormal returns using the following four-factor model for each resulting $NC\_ANALYSTS_t$ or $COV\_ANALYSTS\_ABSENT_t$ portfolio:

$$R_{it} - R_{ft} = a + b_{iM}(R_{Mt} - R_{ft}) + s_i SMB_t + h_i HML_t + m_i MOM_t + \varepsilon_{it} \quad (4)$$

where $R_{Mt} - R_{ft}$, SMB_t, and HML_t are as defined in Fama and French (1996), and MOM_t is the momentum factor defined in Carhart (1997). The four-factor data are from Kenneth French's website. The intercept, *a*, provides an estimate of the monthly abnormal returns earned by each $NC\_ANALYSTS_t$ or $COV\_ANALYSTS\_ABSENT_t$ portfolio, after controlling for these four factors.

Table 5 panel B summarizes the estimation of equation (4) for the $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ portfolios. The estimated intercepts from the four-factor model increase monotonically with $NC\_ANALYSTS_t$ (i.e., from portfolio Q1 to portfolio Q4). Specifically, abnormal monthly returns increase from 0.41% in portfolio Q1 to 0.516% in portfolio Q4. A hedge portfolio with a long position in Q4 stocks and a short position in Q1 stocks yields a significant abnormal return of 0.475% per month or 5.7% per year. For the $COV\_ANALYSTS\_ABSENT_t$ portfolios, abnormal monthly returns decrease monotonically from 0.219% in portfolio Q1 to -0.007% in portfolio Q4. A hedge portfolio yields a significant abnormal return of -0.226% per month or 2.7% per year.

Overall, both regression and portfolio analyses suggest that our analyst interest variables can predict future stock returns and the effects are both economically and statistically significant, consistent with Prediction 3. *NC_ANALYSTS* is positively related to subsequent stock returns, whereas *COV_ANALYSTS_ABSENT* is negatively related to subsequent stock returns.

Testing the Merton's Investor Recognition Story after Controlling for Future Fundamentals

As discussed in Section 2, both theories of McNichols and O'Brien (1997) and Merton (1987) suggest that changes in analyst interest predict subsequent capital market activities and future stock returns. Although these two theories are not mutually exclusive, we attempt to shed light on whether Merton's investor recognition story holds after controlling for future fundamentals. We again note that Merton's (1987) theory has no direct implications for changes in future fundamentals.

Table 6 report regression results for future capital market activities and future stock returns after controlling for future fundamentals. In particular, we include future firm fundamentals (ΔEPS_{t+1} and $SGROWTH_{t+1}$) as additional variables into regressions (2) and (3).

Panel A shows that the estimated coefficients on *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* are similar to those reported in Table 3. Panel B indicates that the predictive power of *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* for subsequent stock returns remain intact after controlling for ΔEPS_{t+1} and $SGROWTH_{t+1}$. Collectively, these results suggest that Merton's (1987) investor recognition story plays a role in the link between analyst interest variables and future capital activities and stock returns.

V. ALTERNATIVE EXPLANATIONS AND ROBUSTNESS TESTS

Alternative Explanation: Confounding Information

One alternative explanation to our results is that other confounding information, such as industry news or information pushed to the market by the firm, may make analysts become aware of a firm. For example, if the first reporting firm in an industry beats earnings expectations substantially due to an industry shock, analysts will flock to the next firm's call to understand how the shock will manifest. In this case, news of another firm is driving both analyst interest, future firm fundamentals and stock returns.[14]

To address this concern, we have included *PASTRET* as a control variable in Tables 2 and 3, where *PASTRET* is stock return over the past three months right up to the conference call date. In the return tests reported in Table 4, we follow the literature and use the standard 11-month stock returns, $RET_{m-11,m-1}$, to proxy for price momentum. To check the sensitivity of the return results, we add size-adjusted *PASTRET* as an additional control variable. Results (not tabulated) are qualitatively similar to those presented in Table 4. Specifically, the *t*-statistics of *NC_ANALYSTS* coefficients get slightly stronger whereas the *t*-statistics of *COV_ANALYSTS_ABSENT* coefficients get slightly weaker, relative to the models without

[14] We thank an anonymous reviewer for this suggestion.

PASTRET. *PASTRET* exhibits statistically positive coefficients and partially subsumes the effect of *ENEWS*.

Alternative Explanation: Upward Trend in Conference Call Likelihood and Coverage

Another alternative explanation is that there is an upward trend in conference call coverage (as shown in Table 1 Panel A) and our results could be driven by a few years' observations. To ensure that our results are not due to this trend or coverage by *Thomson*, we construct a relatively stable subsample. In particular, we require each firm to have at least 21 quarters' data in our 27-quarter sample period (more than 75% of quarters). The resultant subsample has 35,554 firm-quarter observations, compared to 55,565 observations in our full sample. The results from this reduced sample are qualitatively similar to the results shown in Tables 2 through 5. For example, compared to the results shown in Table 5 Panel A, the abnormal returns on the Q4-Q1 hedge portfolio when sorted by $NC\_ANALYSTS_t$ is 1.84% (*t*-stat=3.63), compared to 1.87% (*t*-stat=3.66) for the full sample.

We also investigate the time-series pattern of our results to see whether the results are driven by a few years. For example, in figure 2, we plot the time-series pattern of the coefficient on $NC\_ANALYSTS_t$ in equation (3). We find that the $NC\_ANALYSTS_t$ effect is pervasive and relatively stable over time. The average quarterly coefficient on $NC\_ANALYSTS_t$ is positive every year. Except for 2002, the magnitude of the coefficients is in the same neighborhood. Overall, we conclude that the effect of our analyst interest variables is consistent over time.

Alternative Explanations: Microstructure Effects and Investor Overreaction

There are two alternative explanations for our return results in Section IV. The first alternative explanation is microstructure effects. Namely, firms with increases in market interest, as reflected in increases in analyst coverage and institutional ownership, have higher stock

returns because limited supply pushes up the stock prices. Such price increases should reverse reasonably quickly, suggesting a negative correlation between $NC\_ANALYSTS_t$ and further-out future stock returns. The second alternative explanation is investor overreaction. Investors and analysts overreact to firm fundamental information, resulting in a temporary increase in analyst interest and stock prices. This alternative explanation also suggests a negative correlation between $NC\_ANALYSTS_t$ and further-out future stock returns.

To address these two alternative explanations, we examine whether $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ are correlated with further-out future stock returns. We employ equation (3) but use further-out stock returns as the dependent variables. Specifically, we consider two-quarter-out future returns (RET_{q+2}) from month m+4 to m+6 and three-quarter-out returns (RET_{q+3}) from month m+7 to m+9, where month m is the month during which the conference call occurs. If either alternative story is true, we expect a negative coefficients on $NC\_ANALYSTS_t$ and positive coefficients on $COV\_ANALYSTS\_ABSENT_t$, suggesting a reversal of the initiation effect of our analyst interest variables. Table 7 Panel A reports the empirical results. We find that the estimated coefficient on $NC\_ANALYSTS_t$ remains statistically positive in the RET_{q+2} regression and becomes marginally positive in the RET_{q+3} regression. On the other hand, the estimated coefficients on $COV\_ANALYSTS\_ABSENT_t$ are positive and negative, respectively, with a similar magnitude in the RET_{q+2} and RET_{q+3} regressions. Overall, the evidence does not suggest a reversal of the initial effect of our analyst interest variables and thus does not lend support to these two alternative explanations.

Robustness Check: Subsamples based on Information Environment

We partition our sample into three groups based on the number of analysts covering the firm, NAN_t, to examine whether the effects of analyst interest are more pronounced for firms with a poor information environment. Table 7 Panel B presents the sensitivities of the return

results across three *NAN* terciles. The estimated coefficients on $NC\_ANALYSTS_t$ are statistically positive across all three *NAN* terciles, but the statistical significance declines monotonically from the bottom *NAN* tercile to the top NAN_t tercile. As for $COV\_ANALYSTS\_ABSENT_t$, the estimated coefficients are significantly negative in the bottom and middle *NAN* terciles and become insignificant in the top tercile. The statistical significance also declines monotonically from the bottom to the top *NAN* tercile. Overall, the evidence is consistent with the idea that the return predictive power of our analyst interest variables is stronger for neglected firms.

Robustness Check: The Role of Transaction Costs

While our returns analysis shows that $NC\_ANALYSTS_t$ and $COV\_ANALYSTS\_ABSENT_t$ predict future stock returns and the predictive power is stronger for neglected stocks, we do not take into account transaction costs in our empirical analysis. Transaction costs include the bid-ask spread, commissions paid to the broker, and the price impact of the buy or sell order. Broker's commission has been declining in the past 15 years, with many discounted brokers offer very low or even zero commission for unlimited number of shares per trade.[15] The price impact depends on the trade size and could be substantial for large trades of small-cap stocks. Our conversation with a portfolio manager indicates that total transaction costs were about 15 basis points for large-cap stocks (Russell 1000) and 70 basis points for small-cap stocks (Russell 2000) for a portfolio of $500 million. As institutional investors typically incorporate multiple signals in their trading strategies (e.g., 10-12 signals in our portfolio manager's case), transaction costs are shared by these multiple signals, further lowering the transaction costs to implement the strategies.

[15] For example, Charles Schwab charges $8.95 per trade, whereas Scottrade charges $7 per trade. Bank of American/Merrill Lynch offers zero commission for the first 30 trades per month.

Taken together, we interpret our results such that transaction costs reduce the profitability of the *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* strategies if traded alone, and that the strategies are potentially profitable only to funds and institutional investors with low transaction costs and careful execution. However, *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* could add significant value to a portfolio that trades on multiple signals, and thus, shares transaction costs across these signals. Even if the *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* strategies are less profitable for some investors, our results still suggest that stock prices do not fully impound the information about analyst interest reflected in conference calls.

Robustness Checks: Scaled versus Unscaled versions of Analyst Interest Variables

We use scaled versions of *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* in our main analysis, where the scaler is the number of callers on the conference call. We also check the unscaled versions of *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT*. In untabulated results, we find that when using unscaled *NC_ANALYSTS*, there is a positive association with EPS surprises over the next three quarters and sales growth over the next four quarters, consistent with the results reported in Table 2. Regarding Table 3, we also find that unscaled *NC_ANALYSTS* is positive associated with next quarter's unscaled change in analyst coverage ($CNAN_{RAW}$) and change in share volume turnover (*CTURNOVER*), but not the raw change in the number of institutional investors ($CNII_{RAW}$). Finally, unscaled *COV_ANALYSTS_ABSENT* is negatively associated with next quarter's $CNAN_{RAW}$ and $CNII_{RAW}$, but not *CTURNOVER*. Overall, we find similar results using the scaled and unscaled versions of our variables of interest. For the portfolio return tests in Table 5, we partition the sample into three (instead of four) groups each quarter because there is not enough variation in the unscaled versions of *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT* to form quartiles in some quarters. Untabulated results indicate that our results hold using unscaled versions of *NC_ANALYSTS* and *COV_ANALYSTS_ABSENT*.

Robustness Check: Others

We examine if the positive association between *NC_ANALYSTS* and analyst coverage is driven by firms that recently had an initial public offering (IPO). Relative to firms that have been public for many years, recent IPO firms may exhibit larger sequential increases in analyst participation on conference calls and analyst initiations during the first few quarters after their IPOs. We repeat our analysis after excluding all firm-quarters where a firm's IPO occurred within the past 12 months, which reduces the sample size by 5,394 firm-quarters (10 percent of total firm-quarters). We find that the results (not tabulated) and inferences after running this test are virtually unchanged from the main results discussed in Section IV.

We also examine if there is a fourth quarter effect driving our main results. It is possible that analyst interest in a firm's fourth fiscal quarter is higher because results are aggregated for the full year or news is delayed until the fourth quarter (Mendenhall and Nichols 1988) and because analysts can ask questions about the next fiscal year. We investigate this possibility and its potential influence on the main results in two ways. First, we compute the mean and median number of analysts who ask a question on a conference call by quarter. We find that the mean is 5.1 and median is 5.0 in the fourth quarter, the same as in each of the first three quarters. Thus, it does not appear that the average level of analyst interest is significantly different in the fourth or any other quarter. Second, we re-run regression equations (1) through (3) with the inclusion of quarter fixed effects and find that the results are very similar to those shown in Section IV. In summary, we believe that our main results are not driven by fourth quarter effects.

VI. CONCLUSION

Financial reporting is backward looking in nature, which makes accounting data less timely with respect to future stock returns. In this study, we use analyst interest as an early

indicator of a firm's fundamentals. We posit that changes in analyst interest capture changes in firm fundamentals that have not yet been reflected in financial statements and serve as a leading indicator of capital market activities and stock price movements. Our measure of analyst interest is based on an observable aspect of analysts' due diligence process prior to coverage initiation, which has not been explored in the prior literature.

We find that our analyst interest measure predicts future fundamental changes, such as earnings surprises and sales growth, after controlling for observable financial statement variables and other determinants. We also document that changes in analyst interest predict capital market activities as reflected in future changes in analyst coverage, institutional ownership, and trading volume. Finally, we show that our measure of market interest predicts stock returns over the next three months, and that a hedge portfolio yields a significant hedge return. Overall, our proposed measure of analyst interest serves as an early indicator of firm fundamentals and market activities and offers a one-step-ahead advantage in analyzing stock market dynamics.

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APPENDIX

Definition of Variables

Variable	Definition	Data Source
NUMCALLERS	Number of analysts that asked a question on the firm's conference call.	Thomson StreetEvents
NC_ANALYSTS	Number of analysts that asked a question on the firm's conference call but did not cover the firm as of the date of the conference call, scaled by NUMCALLERS.	Thomson StreetEvents
COV_ANALYSTS	Number of analysts that asked a question on the firm's conference call and covered the firm as of the date of the conference call, scaled by NUMCALLERS.	Thomson StreetEvents
COV_ANALYSTS _ABSENT	Number of analysts that covered the firm as of the date of the conference call, did not ask a question on the conference call, but did ask a question on the previous conference call, scaled by NUMCALLERS.	Thomson StreetEvents
ΔEPS	Seasonal difference in earnings per share (diluted) excluding extraordinary items, scaled by the firm's stock price on the last day of the fiscal quarter ended prior to the conference call.	Compustat
SGROWTH	Seasonal percentage change in quarterly sales.	Compustat
NAN	Number of analysts that covered the firm as of the date of the conference call, defined as the number of analysts that issued an earnings estimate anytime between the previous conference call date and one day before the conference call.	I/B/E/S
CNAN	Percentage change in the number of analysts that covered the firm, defined as the number of analysts that issued an earnings forecasts anytime between the date of the conference call and the next conference call divided by NAN minus one.	I/B/E/S
NII	Number of institutions that owned the firm's stock as of the most recent calendar quarter ended prior to the conference call.	Thomson Reuters 13F Database
CNII	Percentage change in the number of institutions that owned the firm's stock from the calendar quarter ended prior to the conference call to the calendar quarter ended after the conference call.	Thomson Reuters 13F Database
CTURNOVER	Change in average daily turnover (volume divided by shares outstanding) from the ninety days before to the ninety days after the conference call, expressed in percentage terms.	CRSP
RET	Return over the three-month period [m+1, m+3], where month m is the month that the conference call occurs	CRSP
SIZE	Natural logarithm of the market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call.	Compustat
ROA	Income before extraordinary items divided by total assets, measured as of the most recent fiscal quarter ended prior to the conference call.	Compustat
BTM	Book value of equity divided by market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call.	Compustat
LEVERAGE	Book value of debt divided by book value of equity, measured as of the most recent fiscal quarter ended prior to the conference call.	Compustat
PASTRET	Size-adjusted return (raw return less return of the corresponding size decile) for the period [-91, -1] where day 0 is the date of the conference call.	CRSP
VOLATILITY	Standard deviation of daily size-adjusted-returns for the period [-91, -1] where day 0 is the date of the conference call.	CRSP
$ENEWS_t$	Actual reported EPS for quarter t minus the corresponding mean consensus forecast prior to the conference call, scaled by stock price on the consensus forecast date.	I/B/E/S
$RET_{m-1,m-11}$	Past 11-month return from month *m-11* to month *m-1*, where m is the month in which the conference call occurred.	CRSP

FIGURE 1
Timeline of analyst due diligence and coverage initiation

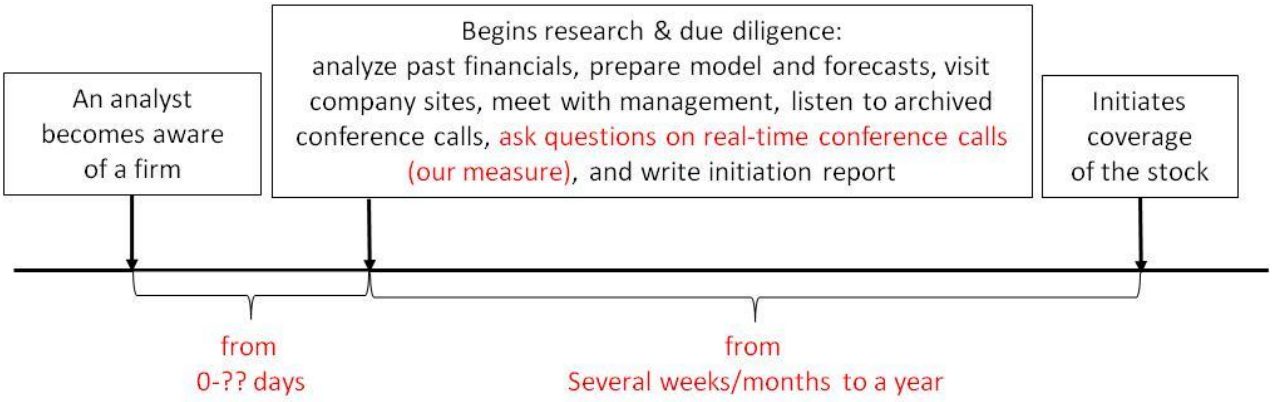

FIGURE 2

Average quarterly coefficients on *NC_ANALYSTS* in the return regression over time

This figure provides the average quarterly coefficients on *NC_ANALYSTS* in the regression of subsequent three-month stock returns over time. For each quarter, we run the regression of future stock returns on *NC_ANALYSTS*, $COV\_ANALYSTS\_ABSENT_t$, *ENEWS*, *SIZE*, *BTM*, and $RET_{m-11,m-1}$ (Model 1of Table 4). Three-month future stock returns (*RET*) are measured over the three-month window [*m+1*, *m+3*], where month *m* is the month in which the conference call occurs. $NC\_ANALYSTS_t$ is the number of analysts that asked a question on the firm's conference call but do not cover the firm as of the conference call date, scaled by the number of callers on the conference call. $COV\_ANALYSTS\_ABSENT_t$ is the number of analysts that cover the firm as of the conference call date and asked questions on the previous conference calls, but did not ask a question on the current conference call, scaled by the number of callers on the conference call. $ENEWS_t$ is earnings surprises for the current quarter. $SIZE_t$ is the logarithm of the market value of equity at prior fiscal year-end. BTM_t is the book-to-market ratio at prior fiscal year-end. $RET_{m-11,m-1}$ is the past 11-month stock returns from the [*m*-11, *m*-1] period, where conference call occur in month *m*. The sample period is from the third quarter of 2002 to the first quarter of 2009. Each bar represents the average quarterly coefficient on *NC_ANALYSTS* in a given year.

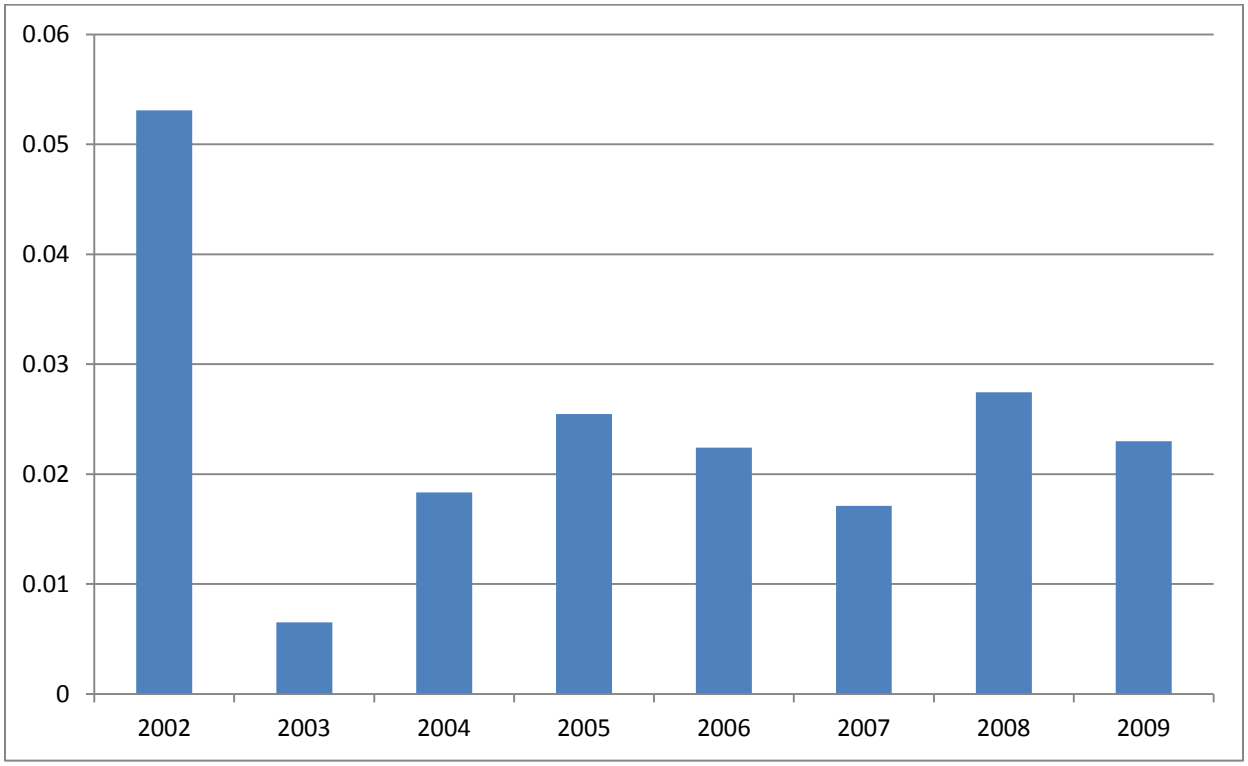

TABLE 1
Sample and summary statistics

Panel A: Conference calls by year and calendar quarter

Year	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
2002	119	495	654	1,142	2,410
2003	1,325	1,321	1,564	1,724	5,934
2004	1,781	1,734	1,829	1,880	7,224
2005	1,949	2,022	2,077	2,128	8,176
2006	2,156	2,156	2,294	2,299	8,905
2007	2,328	2,366	2,455	2,545	9,694
2008	2,642	2,669	2,671	2,641	10,623
2009	2,599	-	-	-	2,599
Total	14,899	12,763	13,544	14,359	55,565

Panel B: Descriptive statistics

Variable	N	N Missing	Mean	1st Quartile	Median	3rd Quartile
NUMCALLERS	55,565	-	5.09	3.00	5.00	7.00
NC_ANALYSTS (unscaled)	55,565	-	1.06	0.00	1.00	2.00
COV_ANALYSTS (unscaled)	55,565	-	4.04	2.00	4.00	6.00
COV_ANALYSTS_ABSENT (unscaled)	52,195	3,370	1.24	0.00	1.00	2.00
NC_ANALYSTS (scaled)	55,565	-	0.25	0.00	0.17	0.38
COV_ANALYSTS (scaled)	55,565	-	0.75	0.63	0.83	1.00
COV_ANALYSTS_ABSENT (scaled)	52,195	3,370	0.30	0.00	0.17	0.40
ΔEPS_{t+1}	53,990	1,575	-0.01	-0.01	0.00	0.01
$SGROWTH_{t+1}$	51,436	4,129	0.19	-0.01	0.10	0.23
NAN	55,565	-	7.90	3.00	6.00	11.00
$CNAN_{t+1}$ *(unscaled)*	55,565	-	0.16	-1.00	0.00	1.00
$CNAN_{t+1}$ *(percentage change)*	52,826	2,739	0.05	-0.06	0.00	0.13
NII	55,565	-	166.53	66.00	119.00	202.00
$CNII_{t+1}$ *(unscaled)*	55,565	-	1.77	-5.00	1.00	8.00
$CNII_{t+1}$ *(percentage change)*	53,198	2,367	0.02	-0.05	0.01	0.07
$CTURNOVER_{t+1}$	54,434	1,131	0.04	-0.11	0.02	0.18
RET	54,040	1,525	0.02	-0.11	0.01	0.13
SIZE	54,085	1,480	6.94	5.83	6.83	7.96
ROA	54,130	1,435	0.00	0.00	0.01	0.02
BTM	52,690	2,875	0.54	0.28	0.45	0.67
LEVERAGE	54,085	1,480	0.53	0.01	0.17	0.52
PASTRET	54,370	1,195	0.00	-0.10	-0.01	0.09
VOLATILITY	54,369	1,196	0.02	0.01	0.02	0.03

TABLE 1 (CONTINUED)

Panel C: Selected Pair-wise Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
$NC\_ANALYSTS_t$	(1)												
$COV\_ANALYSTS\_ABSENT_t$	(2)	-0.03***											
ΔEPS_{t+1}	(3)	0.02***	0.00										
$SGROWTH_{t+1}$	(4)	0.02***	-0.01***	0.10***									
$CNAN_{t+1}$	(5)	0.06***	-0.09***	0.02***	0.05***								
$CNII_{t+1}$	(6)	0.04***	-0.04***	0.08***	0.10***	0.11***							
$CTURNOVER_{t+1}$	(7)	0.02***	-0.01*	-0.03***	0.00	0.03***	0.12***						
$SIZE_t$	(8)	-0.30***	0.06***	0.03***	-0.03***	0.00	-0.01***	0.02***					
ROA_t	(9)	-0.07***	-0.03***	0.02***	-0.07***	0.05***	0.07***	0.02***	0.25***				
BTM_t	(10)	0.11***	0.02***	-0.18***	-0.12***	-0.09***	-0.12***	-0.01	-0.29***	-0.13***			
$LEVERAGE_t$	(11)	0.05***	0.02***	-0.07***	-0.04***	-0.05***	-0.06***	0.01**	-0.06***	-0.06***	0.45***		
$PASTRET_t$	(12)	0.01	-0.03***	0.10***	0.06***	0.07***	0.33***	0.05***	0.07***	0.09***	-0.15***	-0.09***	
$VOLATILITY_t$	(13)	0.12***	0.02***	-0.10***	0.02***	-0.06***	-0.08***	-0.12***	-0.48***	-0.32***	0.36***	0.23***	-0.08***

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 level, respectively, using a two-tailed test.

TABLE 1 (CONTINUED)

Panel A presents the sample of earnings conference call transcripts by year and calendar quarter. Panel B presents descriptive statistics of variables for the entire conference call transcript sample. Panel C presents Pearson pair-wise correlations. *NUMCALLERS* is the number of analysts that asked a question on the firm's conference call. *NC_ANALYSTS* is the number of analysts that asked a question on the firm's conference call but did not cover the firm as of the date of the conference call, scaled by *NUMCALLERS*. *COV_ANALYSTS* is the number of analysts that asked a question on the firm's conference call and covered the firm as of the date of the conference call, scaled by *NUMCALLERS*. *COV_ANALYSTS_ABSENT* is the number of analysts that covered the firm as of the date of the conference call, did not ask a question on the conference call, but did ask a question on the previous conference call, scaled by *NUMCALLERS*. *NAN* is the number of analysts that covered the firm as of the date of the conference call, defined as the number of analysts that issued an earnings estimate anytime between the previous conference call date and one day before the conference call. $CNAN_{t+1}$ is the percentage change in the number of analysts that covered the firm, defined as the number of analysts that issued an earnings forecasts anytime between the date of the conference call and the next conference call divided by *NAN* minus one. *NII* is the number of institutional investors that owned the firm's stock as of the most recent calendar quarter ended prior to the conference call. $CNII_{t+1}$ is the percentage change in the number of institutional investors that owned the firm's stock from the calendar quarter ended prior to the conference call to the calendar quarter ended after the conference call. $CTURNOVER_{t+1}$ is the change in average daily turnover (volume divided by shares outstanding) from the ninety days before to the ninety days after the conference call, expressed in percentage terms. ΔEPS_{t+1} is the seasonal difference in earnings per share (diluted) excluding extraordinary items for the fiscal quarter ended after the conference call, scaled by the firm's stock price as of the end of the fiscal quarter ended prior to the conference call. $SGROWTH_{t+1}$ is the seasonal percentage change in quarterly sales for the fiscal quarter ended after the conference call. *SIZE* is the natural logarithm of the market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *ROA* is income before extraordinary items divided by total assets, measured as of the most recent fiscal quarter ended prior to the conference call. *BTM* is the book value of equity divided by market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *LEVERAGE* is the book value of debt divided by book value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *PASTRET* is the size-adjusted return (raw return less return of the corresponding size decile) for the period [-91, -1] where day 0 is the date of the conference call. *VOLATILITY* is the standard deviation of daily size-adjusted-returns for the period [-91, -1] where day 0 is the date of the conference call.

TABLE 2

Regressions of future growth on the number of non-covering analysts on a conference call

Panel A: Regressions of future earnings per share surprises (ΔEPS_x)

Dependent Variable:	Pred. Sign	ΔEPS_{t+1} (1)	ΔEPS_{t+2} (2)	ΔEPS_{t+3} (3)	ΔEPS_{t+4} (4)
$NC\_ANALYSTS_t$	+	0.009 ***	0.008 ***	0.005 *	0.005 *
		(3.88)	(3.26)	(1.84)	(1.83)
$COV\_ANALYSTS\_ABSENT_t$	-	0.002	0.001	-0.001	0.002
		(1.27)	(0.55)	-(0.62)	(0.95)
ΔEPS_t	+/-	0.173 ***	0.088 ***	0.009	-0.411 ***
		(7.26)	(4.76)	(0.45)	-(15.37)
$SIZE_t$	+	0.000	0.000	0.000	0.003 ***
		-(0.69)	-(0.25)	-(0.23)	(5.70)
ROA_t	-	-0.095 ***	-0.125 ***	-0.115 ***	-0.628 ***
		-(4.39)	-(5.41)	-(5.27)	-(11.13)
BTM_t	-	-0.041 ***	-0.023 ***	-0.012 **	-0.017 ***
		-(7.93)	-(4.48)	-(2.56)	-(3.59)
$LEVERAGE_t$	+	0.000	0.001	0.001	0.001
		(0.18)	(0.36)	(0.63)	(0.52)
$PASTRET_t$	+	0.061 ***	0.054 ***	0.020 ***	0.009 *
		(13.06)	(10.69)	(3.80)	(1.95)
Intercept		0.024 ***	0.014 *	0.010 *	-0.008
		(3.03)	(1.92)	(1.66)	-(1.22)
Year Fixed Effects		Yes	Yes	Yes	Yes
N		49,378	49,373	49,295	49,191
Adj. R-squared		0.072	0.035	0.018	0.207

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 level, respectively, using a two-tailed test and standard errors clustered by firm. Parentheses indicate t-value.

Panel A presents results of regressions of future growth in earnings per share on the number of non-covering analysts on a conference call. ΔEPS_{t+x} is the seasonal difference in earnings per share (diluted) excluding extraordinary items scaled by the firm's stock price as of the fiscal quarter ended prior to the conference call (quarter *t*) and x=1,2,3,4 are the four fiscal quarters ended after the conference call. *NC_ANALYSTS* is the number of analysts that asked a question on the firm's conference call but did not cover the firm as of the date of the conference call, scaled by the number of analysts that asked a question on the firm's conference call (*NUMCALLERS*). *COV_ANALYSTS_ABSENT* is the number of analysts that covered the firm as of the date of the conference call, did not ask a question on the conference call, but did ask a question on the previous conference call, scaled by *NUMCALLERS*. *SIZE* is the natural logarithm of the market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *ROA* is income before extraordinary items divided by total assets, measured as of the most recent fiscal quarter ended prior to the conference call. *BTM* is the book value of equity divided by market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *LEVERAGE* is the book value of debt divided by book value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *PASTRET* is the size-adjusted return (raw return less return of the corresponding size decile) for the period [-91, -1] where day 0 is the date of the conference call.

TABLE 2 (CONTINUED)

Panel B: Regressions of future sales growth ($SGROWTH_x$)

Dependent Variable:	Pred. Sign	$SGROWTH_{t+1}$ (1)	$SGROWTH_{t+2}$ (2)	$SGROWTH_{t+3}$ (3)	$SGROWTH_{t+4}$ (4)
$NC\_ANALYSTS_t$	+	0.017 *	0.038 ***	0.028 **	0.031 **
		(1.67)	(3.09)	(2.13)	(1.98)
$COV\_ANALYSTS\_ABSENT_t$	-	-0.006	0.000	0.001	-0.001
		-(1.30)	(0.07)	(0.16)	-(0.35)
$SGROWTH_t$	+	0.563 ***	0.356 ***	0.218 ***	0.019
		(24.34)	(16.06)	(11.55)	(1.04)
$SIZE_t$	-	-0.004 ***	-0.007 ***	-0.009 ***	-0.011 ***
		-(2.93)	-(3.61)	-(4.29)	-(4.57)
ROA_t	-	-0.432 ***	-0.581 ***	-0.779 ***	-1.297 ***
		-(4.72)	-(4.76)	-(5.32)	-(7.31)
BTM_t	-	-0.094 ***	-0.119 ***	-0.131 ***	-0.140 ***
		-(12.17)	-(13.25)	-(13.27)	-(11.55)
$LEVERAGE_t$		0.003	-0.002	-0.006 ***	-0.009 ***
		(1.61)	-(0.90)	-(2.76)	-(3.47)
$PASTRET_t$	+	0.133 ***	0.211 ***	0.247 ***	0.180 ***
		(6.66)	(10.44)	(12.70)	(8.54)
Intercept		0.143 ***	0.187 ***	0.226 ***	0.278 ***
		(8.82)	(10.13)	(10.90)	(11.71)
Year Fixed Effects		Yes	Yes	Yes	Yes
N		46,937	46,902	46,817	46,728
Adj. R-squared		0.369	0.172	0.087	0.034

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 level, respectively, using a two-tailed test and standard errors clustered by firm. Parentheses indicate t-value.

Panel B presents results of regressions of future growth in quarterly sales on the number of non-covering analysts on a conference call. $SGROWTH_{t+x}$ is the seasonal percentage change in quarterly sales, where quarter *t* is the most recent fiscal quarter ended prior to the conference call and x=1,2,3,4 are the four fiscal quarters ended after the conference call. *NC_ANALYSTS* is the number of analysts that asked a question on the firm's conference call but did not cover the firm as of the date of the conference call, scaled by the number of analysts that asked a question on the firm's conference call (*NUMCALLERS*). *COV_ANALYSTS_ABSENT* is the number of analysts that covered the firm as of the date of the conference call, did not ask a question on the conference call, but did ask a question on the previous conference call, scaled by *NUMCALLERS*. *SIZE* is the natural logarithm of the market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *ROA* is income before extraordinary items divided by total assets, measured as of the most recent fiscal quarter ended prior to the conference call. *BTM* is the book value of equity divided by market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *LEVERAGE* is the book value of debt divided by book value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *PASTRET* is the size-adjusted return (raw return less return of the corresponding size decile) for the period [-91, -1] where day 0 is the date of the conference call.

TABLE 3

Regressions of future changes in analyst coverage and institutional ownership

Dependent Variable:	Predicted Sign	$CNAN_{t+1}$ (1)	$CNII_{t+1}$ (2)	$CTURNOVER_{t+1}$ (3)
$NC\_ANALYSTS_t$	+	0.085 ***	0.008 ***	0.022 **
		(11.06)	(3.40)	(2.13)
$COV\_ANALYSTS\_ABSENT_t$	-	-0.046 ***	-0.004 ***	-0.003
		-(15.34)	-(4.87)	-(0.53)
$CNAN_t$		-0.121 ***		
		-(16.40)		
$CNII_t$			0.000	
			(0.00)	
$CTURNOVER_t$				-0.097 ***
				-(5.01)
$SIZE_t$	-	-0.007 ***	-0.006 ***	-0.016 ***
		-(7.95)	-(14.77)	-(4.34)
ROA_t	+	0.161 ***	0.086 ***	-0.122 *
		(5.76)	(4.88)	-(1.71)
BTM_t	-	-0.059 ***	-0.018 ***	-0.001
		-(14.86)	-(11.18)	-(0.08)
$LEVERAGE_t$		0.002 *	0.001	0.019 ***
		(1.92)	(1.37)	(5.18)
$PASTRET_t$	+	0.090 ***	0.241 ***	0.224 ***
		(10.63)	(57.99)	(7.77)
$VOLATILITY_t$	-	-0.381 ***	-0.224 ***	-6.892 ***
		-(3.10)	-(3.74)	-(8.39)
Intercept		0.144 ***	0.051 ***	0.337 ***
		(10.69)	(10.13)	(6.28)
Year Fixed Effects		Yes	Yes	Yes
N		46,983	47,522	49,525
Adj. R-squared		0.041	0.153	0.041

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 level, respectively, using a two-tailed test and standard errors clustered by firm. Parentheses indicate t-value.

TABLE 3 (CONTINUED)

Table 3 reports regression results of next quarter's changes in analyst coverage ($CNAN_{t+1}$), institutional ownership ($CNII_{t+1}$), and trading volume turnover ($CTURNOVER_{t+1}$) on non-covering analysts (*NC_ANALYSTS*) and covering analysts that are absent (*COV_ANALYSTS_ABSENT*) on firm's earnings conference call, as well as control variables. $CNAN_{t+1}$ is the percentage change in the number of analysts that covered the firm from the quarter before the conference call to the quarter after the conference call. $CNII_{t+1}$ is the percentage change in the number of institutional investors that owned the firm's stock from the calendar quarter ended prior to the conference call to the calendar quarter ended after the conference call. $CTURNOVER_{t+1}$ is the change in average daily turnover (volume divided by shares outstanding) from the ninety days before to the ninety days after the conference call, expressed in percentage terms. *NC_ANALYSTS* is the number of analysts that asked a question on the firm's conference call but did not cover the firm as of the date of the conference call, scaled by the number of analysts that asked a question on the firm's conference call (*NUMCALLERS*). *COV_ANALYSTS_ABSENT* is the number of analysts that covered the firm as of the date of the conference call, did not ask a question on the conference call, but did ask a question on the previous conference call, scaled by *NUMCALLERS*. *SIZE* is the natural logarithm of the market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *ROA* is income before extraordinary items divided by total assets, measured as of the most recent fiscal quarter ended prior to the conference call. *BTM* is the book value of equity divided by market value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *LEVERAGE* is the book value of debt divided by book value of equity, measured as of the most recent fiscal quarter ended prior to the conference call. *PASTRET* is the size-adjusted return (raw return less return of the corresponding size decile) for the period [-91, -1] where day 0 is the date of the conference call. *VOLATILITY* is the standard deviation of daily size-adjusted-returns for the period [-91, -1] where day 0 is the date of the conference call.

TABLE 4

Regressions of future stock returns on analyst interest variables

Dependent Variable:	Predicted Sign	RET (1)	RET (2)
Intercept		0.051 (1.20)	0.050 (1.20)
$NC\_ANALYSTS_t$	+	0.023*** (2.76)	0.023*** (2.72)
$COV\_ANALYSTS\_ABSENT_t$	-	-0.005** (-2.06)	-0.005** (-2.18)
$ENEWS_t$	+	3.25*** (8.60)	3.27*** (8.69)
$SIZE_t$		-0.006 (-1.64)	-0.006 (-1.62)
BTM_t		0.010 (0.99)	0.009 (0.89)
$RET_{m-11,m-1}$		-0.019 (-1.30)	-0.019 (-1.34)
$CNAN_t$			-0.012* (-1.80)
$CNII_t$			0.014 (0.79)
$CTURNOVER_t$			0.007 (0.22)
Adj R^2		0.054	0.057

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 level, respectively, using a one-tailed test.

This table reports regression results of future stock returns, which are measured over the three-month window [m+1, m+3], where month m is the month that the conference call occurs. $NC\_ANALYSTS_t$ is the number of analysts that asked a question on the firm's conference call but do not cover the firm as of the conference call date, scaled by the number of callers on the conference call. $COV\_ANALYSTS\_ABSENT_t$ is the number of analysts that cover the firm as of the conference call date and asked questions on the previous conference calls, but did not ask a question on the current conference call, scaled by the number of callers on the conference call. $ENEWS_t$ is earnings surprises for the current quarter. $SIZE_t$ is the logarithm of the market value of equity at prior fiscal year-end. BTM_t is the book-to-market ratio at prior fiscal year-end. $RET_{m-11,m-1}$ is the past 11-month stock returns from the [m-11, m-1] period, where conference call occur in month m. $CNAN_{t+1}$ is the percentage change in the number of analysts that covered the firm from the quarter before the conference call to the quarter after the conference call. $CNII_{t+1}$ is the percentage change in the number of institutional investors that owned the firm's stock from the calendar quarter ended prior to the conference call to the calendar quarter ended after the conference call. $CTURNOVER_{t+1}$ is the change in average daily turnover (volume divided by shares outstanding) from the ninety days before to the ninety days after the conference call, expressed in percentage terms. The coefficient estimates are the average of quarterly estimates over 27 quarters from the third quarter of 2002 to the first quarter of 2009; t-statistics in parentheses are Fama-MacBeth t-statistics.

TABLE 5
Portfolio analysis based on analyst interest variables

Panel A: Three-month returns across four quartiles based on analyst interest variables

Sorted by	Q1	Q2	Q3	Q4	Q4-Q1
NC_ANALYSTS$_t$	1.69%	1.71%	2.12%	3.56%	1.87%*** (3.66)
COV_ANALYSTS_ABSENT$_t$	3.15%	1.44%	1.72%	1.48%	-1.67%*** (-2.81)

Panel B: The four-factor model on monthly portfolio returns based on analyst interest variables

	Intercept	$R_M - R_f$	SMB	HML	Adj. R^2	Adj. R^2
	Sorted by *NC_ANALYSTS*$_t$					
Q1	0.041 (0.47)	1.042 (43.56)	0.798 (19.46)	0.004 (0.10)	-0.222 (-13.68)	0.987
Q2	0.127 (0.95)	1.042 (28.01)	0.637 (9.99)	-0.253 (-4.33)	-0.182 (-7.20)	0.964
Q3	0.135 (1.23)	1.100 (35.91)	0.850 (16.17)	0.043 (0.90)	-0.192 (-9.23)	0.981
Q4	0.516*** (3.48)	1.098 (26.48)	0.886 (12.46)	0.027 (0.41)	-0.217 (-7.72)	0.966
Q4 – Q1	0.475*** (2.78)	0.056 (1.30)	0.088 (1.65)	0.023 (0.34)	0.005 (0.07)	0.069
	Sorted by COV_ANALYSTS_ABSENT$_t$					
Q1	0.219** (2.03)	1.070 (35.48)	0.910 (17.59)	0.061 (1.29)	-0.175 (-8.51)	0.981
Q2	-0.048 (-0.43)	1.060 (34.26)	0.738 (13.90)	-0.057 (-1.17)	-0.175 (-8.30)	0.977
Q3	0.043 (0.42)	1.055 (36.40)	0.750 (15.08)	-0.019 (-0.41)	-0.240 (-12.17)	0.981
Q4	-0.007 (-0.09)	1.082 (36.43)	0.759 (14.90)	0.001 (0.02)	-0.263 (-13.03)	0.982
Q4 – Q1	-0.226** (-2.24)	0.012 (0.12)	-0.151 (-2.79)	-0.060 (-1.45)	-0.088 (-4.98)	0.286

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 level, respectively, using a one-tailed test.

TABLE 5 (CONTINUED)

This table reports portfolio results when each quarter we sort observations into four quartiles based on $NC\_ANALYSTS_t$ or $COV\_ANALYSTS\_ABSENT_t$. $NC\_ANALYSTS_t$ is the number of analysts that asked a question on the firm's conference call but do not cover the firm as of the conference call date, scaled by the number of callers on the conference call. $COV\_ANALYSTS\_ABSENT_t$ is the number of analysts that cover the firm as of the conference call date and asked questions on the previous conference calls, but did not ask a question on the current conference call, scaled by the number of callers on the conference call. Panel A reports raw returns across four quartiles as well as the Q4-Q1 hedge portfolio. Panel B reports the results of the four-factor model as follows:

$$R_{it} - R_{ft} = a + b_{iM}(R_{Mt} - R_{ft}) + s_i SMB_t + h_i HML_t + m_i MOM_t + \varepsilon_{it},$$

where $R_{Mt} - R_{ft}$, *SMB*, and *HML* are as defined in Fama and French (1996), and *MOM* is the momentum factor as defined in Carhart (1997). The intercept represents the monthly excess return for each portfolio, after controlling for the effect of all four factors. The four factor data are from Kenneth French's website. As the factor data are monthly, we match $NC\_ANALYSTS_t$ or $COV\_ANALYSTS\_ABSENT_t$ from the conference month *m* with monthly returns from *m+1* to *m+3*. The sample period in Panel B includes 84 months from July 2002 to June 2009; White heteroskedasticity-adjusted t-statistics are in parentheses.

TABLE 6

Testing the firm fundamentals and investor visibility stories

Panel A: Regression of future capital market activities after controlling for future firm fundamentals

Dependent Variable:	Predicted Sign	$CNAN_{t+1}$ (1)	$CNII_{t+1}$ (2)	$CTURNOVER_{t+1}$ (3)
$NC\_ANALYSTS_t$	+	0.088***	0.010***	0.023**
		(10.87)	(4.05)	(2.16)
$COV\_ANALYSTS\_ABSENT_t$	-	-0.046***	-0.005***	-0.006
		-(14.52)	-(5.24)	-(1.00)
$CNAN_t$		-0.125***	0.014***	0.014
		-(16.39)	(6.43)	(1.00)
$CNII_t$		0.159***	0.036***	0.215***
		(12.43)	(4.19)	(6.48)
$CTURNOVER_t$		0.002	0.003**	-0.118***
		(1.01)	(2.45)	-(4.70)
$SIZE_t$		-0.006***	-0.005***	0.000
		-(6.37)	-(11.91)	(0.13)
ROA_t		0.176***	0.114***	0.113
		(6.62)	(7.70)	(1.50)
BTM_t		-0.056***	-0.023***	-0.023**
		-(13.09)	-(13.30)	-(2.07)
$LEVERAGE_t$		0.001	0.000	0.016***
		(0.74)	(0.22)	(3.96)
$PASTRET_t$		0.095***	0.270***	0.159***
		(7.25)	(42.12)	(2.94)
$VOLATILITY_t$		-0.288***	-0.393***	-2.834***
		-(2.71)	-(7.22)	-(5.43)
ΔEPS_{t+1}		-0.022*	0.024***	-0.213***
		-(1.91)	(4.09)	-(3.89)
$SGROWTH_{t+1}$		0.019***	0.016***	0.009
		(6.29)	(7.71)	(0.57)
Intercept		0.128***	0.047***	0.111***
		(9.21)	(8.65)	(2.63)
Year Fixed Effects		Yes	Yes	Yes
N		42,900	43,234	43,266
Adj. R-squared		0.047	0.131	0.029

TABLE 6 (CONTINUED)

Panel B: Regression of future stock returns after controlling for future firm fundamentals

Dependent Variable:	Predicted Sign	RET (1)	RET (2)
Intercept		0.023 (0.56)	0.023 (0.56)
$NC\_ANALYSTS_t$	+	0.022*** (2.67)	0.022*** (2.78)
$COV\_ANALYSTS\_ABSENT_t$	-	-0.006*** (-2.99)	-0.006*** (-2.89)
ΔEPS_{t+1}	+	0.996*** (7.08)	0.997*** (6.86)
$SGROWTH_{t+1}$	+	0.057*** (4.84)	0.056*** (4.99)
$ENEWS_t$	+	3.04*** (6.27)	3.01*** (6.24)
$SIZE_t$		-0.004 (-1.08)	-0.004 (-1.07)
BTM_t		0.019** (2.10)	0.017* (1.76)
$RET_{m-11,m-1}$		-0.038** (-2.49)	-0.034** (-2.34)
$CNAN_t$			-0.013** (-2.16)
$CNII_t$			-0.014 (-0.51)
$CTURNOVER_t$			-0.013 (-0.32)
Adj R^2		0.088	0.093

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 level, respectively, using a one-tailed test.

TABLE 6 (CONTINUED)

Panel A reports regression results of next quarter's changes in analyst coverage ($CNAN_{t+1}$), institutional ownership ($CNII_{t+1}$), and trading volume turnover ($CTURNOVER_{t+1}$) on non-covering analysts (*NC_ANALYSTS*) and covering analysts that are absent (*COV_ANALYSTS_ABSENT*) on firm's earnings conference call, as well as control variables. The results are comparable to those presented in Table 3, except that future earnings growth (ΔEPS_{t+1}) and sales growth ($SGROWTH_{t+1}$) are included in the regression, which control for changes in future fundamentals. Panel B reports regression results of future stock returns, which are measured over the three-month window [m+1, m+3], where month *m* is the month that the conference call occurs. $NC\_ANALYSTS_t$ is the number of analysts that asked a question on the firm's conference call but do not cover the firm as of the conference call date, scaled by the number of callers on the conference call. $COV\_ANALYSTS\_ABSENT_t$ is the number of analysts that cover the firm as of the conference call date and asked questions on the previous conference calls, but did not ask a question on the current conference call, scaled by the number of callers on the conference call. ΔEPS_{t+1} is earnings growth for the subsequent quarter, measured as the seasonal difference in earnings scaled by stock price. $SGROWTH_{t+1}$ is sales growth for the subsequent quarter, measured as the percentage changes in sales relative to four quarters ago. $ENEWS_t$ is earnings surprises for the current quarter. $SIZE_t$ is the logarithm of the market value of equity at prior fiscal year-end. BTM_t is the book-to-market ratio at prior fiscal year-end. $RET_{m-11,m-1}$ is the past 11-month stock returns from the [*m*-11, *m*-1] period, where conference call occur in month *m*. $CNAN_{t+1}$ is the percentage change in the number of analysts that covered the firm from the quarter before the conference call to the quarter after the conference call. $CNII_{t+1}$ is the percentage change in the number of institutional investors that owned the firm's stock from the calendar quarter ended prior to the conference call to the calendar quarter ended after the conference call. $CTURNOVER_{t+1}$ is the change in average daily turnover (volume divided by shares outstanding) from the ninety days before to the ninety days after the conference call, expressed in percentage terms. The regressions in Panel A are based on the fixed effect with standard errors clustered at the firm level. In Panel B, the coefficient estimates are the average of quarterly estimates over 27 quarters from the third quarter of 2002 to the first quarter of 2009; t-statistics in parentheses are Fama-MacBeth t-statistics.

TABLE 7

Robustness checks: Regressions of future stock returns

Panel A: Regressions of subsequent stock returns by different windows

		(1)	(2)	(3)
Dependent Variable:	Predicted Sign	RET_{q+1} (As reported in Column 2 of Table 4)	RET_{q+2} (two-quarter -out returns)	RET_{q+3} (three-quarter -out returns)
Intercept		0.050 (1.20)	0.045 (1.03)	0.087 (1.73)
$NC\_ANALYSTS_t$	+	0.023*** (2.72)	0.014** (1.75)	0.010* (1.43)
$COV\_ANALYSTS\_ABSENT_t$	-	-0.005*** (-2.18)	0.003* (1.39)	-0.003 (-1.11)
$ENEWS_t$	+	3.27*** (8.69)	0.144 (0.64)	-0.114 (-0.31)
$SIZE_t$		-0.006 (-1.62)	-0.005 (-1.27)	-0.007 (-1.74)
BTM_t		0.009 (0.89)	0.001 (0.14)	-0.011 (-1.13)
$RET_{m-11,m-1}$		-0.019 (-1.34)	-0.040 (-1.60)	-0.034*** (-2.65)
$CNAN_t$		-0.012* (-1.80)	-0.006 (-0.95)	-0.006 (-0.76)
$CNII_t$		0.014 (0.79)	-0.008 (-0.45)	0.000 (0.02)
$CTURNOVER_t$		0.007 (0.22)	0.053 (1.25)	0.016 (0.58)
Adj R^2		0.057	0.032	0.033

TABLE 7 (CONTINUED)

Panel B: Regressions of subsequent three-month stock returns (RET_{q+1}) by analyst coverage

		Bottom NAN_t tercile		Middle NAN_t tercile		Top NAN_t tercile	
	Pred. Sign	(1)	(2)	(3)	(4)	(5)	(6)
Intercept		0.138**	0.135**	0.028	0.031	0.033	0.031
		(2.01)	(2.01)	(0.61)	(0.68)	(0.98)	(0.95)
$NC\_ANALYSTS_t$	+	0.021***	0.020**	0.021**	0.024*	0.025*	0.024*
		(2.33)	(2.18)	(1.88)	(1.58)	(1.57)	(1.52)
$COV\_ANALYSTS\_ABSENT_t$	-	-0.015**	-0.015**	-0.004*	-0.005*	-0.002	-0.002
		(-2.14)	(-2.17)	(-1.39)	(-1.52)	(-1.01)	(-0.96)
$ENEWS_t$	+	2.96***	3.02***	4.47***	4.49***	3.64***	3.77***
		(5.59)	(5.76)	(6.51)	(6.54)	(6.16)	(6.07)
$SIZE_t$		-0.019**	-0.019**	-0.003	-0.004	-0.003	-0.003
		(-2.40)	(-2.34)	(-0.75)	(-0.81)	(-1.02)	(-1.00)
BTM_t		0.012	0.008	0.009	0.009	-0.006	-0.006
		(0.90)	(0.58)	(0.66)	(0.69)	(-0.55)	(-0.54)
$RET_{m-11,m-1}$		-0.016	-0.017	-0.015	-0.011	-0.014	-0.014
		(-1.36)	(-1.25)	(-0.89)	(-0.75)	(-0.86)	(-0.89)
$CNAN_t$			-0.003		-0.022*		-0.000
			(-0.29)		(-1.72)		(-0.03)
$CNII_t$			0.004		-0.008		0.025
			(0.12)		(-0.28)		(0.77)
$CTURNOVER_t$			-0.021		0.043		-0.005
			(-0.30)		(0.88)		(-0.19)
Adj R^2		0.060	0.062	0.060	0.068	0.057	0.060

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 level, respectively, using a one-tailed test.

Panel A reports regression results of future stock returns. In column (1), one-quarter-out future stock returns (*RET*) are measured over the three-month window [t+1, t+3], where month t is the month that the conference call occurs. Similarly, two- and three-quarter-out future returns are from the windows [*t+4*, *t+6*] and [*t+7*, *t+9*] , respectively. Panel B reports the regression results when the sample is partitioned into three terciles based on pre-conference analyst coverage (NAN_t). $NC\_ANALYSTS_t$ is the number of analysts that asked a question on the firm's conference call but do not cover the firm as of the conference call date, scaled by the number of callers on the conference call. $COV\_ANALYSTS\_ABSENT_t$ is the number of analysts that cover the firm as of the conference call date and asked questions on the previous conference calls, but did not ask a question on the current conference call, scaled by the number of callers on the conference call. $ENEWS_t$ is earnings surprises for the current quarter. $SIZE_t$ is the logarithm of the market value of equity at prior fiscal year-end. BTM_t is the book-to-market ratio at prior fiscal year-end. $RET_{m-11,m-1}$ is the past 11-month stock returns from the [*m*-11, *m*-1] period, where conference call occur in month *m*. $CNAN_{t+1}$ is the percentage change in the number of analysts that covered the firm from the quarter before the conference call to the quarter after the conference call. $CNII_{t+1}$ is the percentage change in the number of institutional investors that owned the firm's stock from the calendar quarter ended prior to the conference call to the calendar quarter ended after the conference call. $CTURNOVER_{t+1}$ is the change in average daily turnover (volume divided by shares outstanding) from the ninety days before to the ninety days after the conference call, expressed in percentage terms. The coefficient estimates are the average of quarterly estimates over 27 quarters from the third quarter of 2002 to the first quarter of 2009; t-statistics in parentheses are Fama-MacBeth t-statistics.