

Who are calling the shots at Earnings Conference Calls? ★

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Abstract

We study the disclosure choices of executives during the Q&A sessions of earnings conference calls (ECCs). While prior literature depicts the management as the main driver of firms' disclosure, we hypothesize that analysts may actually be calling the shots through their cross examinations. Using a sample of ECCs from 2005 to 2020 for six main industries, we document that analysts' impact on managements' disclosure is dependent on the features of their questions. We find that questions with higher specificity drive specific answers and questions with higher novelty drive novel answers. However, for questions that require high levels of novel and unique information, the power of questions' specificity decreases in driving the specificity of information provided by management. We further show that investors react to information specificity and novelty extracted during ECCs. We show that information novelty provided by management decreases investors' disagreements and provides them with positive abnormal returns, independently whether information novelty is driven by analysts or not. In contrast, we document that answer specificity impacts capital markets only when it is in function to responding to analysts questions. Overall, these findings suggest that analysts have an important role in driving information supply during ECCs, and this information is beneficial for capital markets.

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1. Introduction

Over the past decades, earnings conference calls (ECCs) have become an important form of voluntary disclosures, turning into significant information events for the capital market (Bowen et al., 2002; Kimbrough, 2005; Matsumoto et al., 2011; Davis et al., 2015). Indeed, ECCs are available to all market participants as their webcasts and transcripts are publicly disclosed as required by the Regulation Fair Disclosure (Reg FD) issued by the U.S. Securities and Exchange Commission (SEC) in 2000 for promoting the full and fair disclosure of information.¹ ECCs are held shortly after companies announce their earnings results and provide an opportunity for management to further comment on firms' current and future performance. They are composed of two parts: introduction and question and answers (Q&A). During the introduction session, managers provide an overview of quarterly firm performance and potentially additional, voluntary disclosures not included in the earnings report released. During the Q&A sessions, analysts query the management to uncover important, value relevant information.

Recent research on the interactions between analysts and managers in conference calls suggests that these dialogues impact the contents of subsequent analyst reports and management guidance (Huang et al., 2018; Brightbill et al., 2022), as well as stock prices (Chen et al., 2018b; Mayew et al., 2020). The literature documents that analysts' questions related to reported financial statements uncover important information, incrementally informative beyond the earnings press release (Matsumoto et al., 2011; Price et al., 2012; Cicon, 2017; Dai et al., 2022). However, despite the dynamic nature of ECCs, this research also suggests that it is the management that drives the information content during the Q&A sessions in ECCs. Some of the means used by management to dictate the content of Q&A sessions are: discriminating among analysts by choosing favorable analysts to place questions first (Mayew, 2008), giving uninformative responses through predetermined scripts with contents similar to management discussions (Lee, 2016), or refusing to answer questions altogether (Hollander et al., 2010; Gow et al., 2019).

For this study, we consider the relationship between managements and analysts through the lenses of gate keeping, which research in sociology defines as the process of receiving,

¹www.sec.gov/rules/final/33-7881.htm

filtering, and transferring information to others (Klobas and McGill, 1995; Lu, 2007; Bouhnik, 2015). Following this stream of research, analysts are the gatekeepers who are in control of the visibility, interpretation, and mediation of the information provided by management at ECCs. Further, the management is the information source in control of instigating and directing the attention of the analysts toward particular events and issues. As such, it is quite possible that the management leads the conversation when it comes to the information type, without necessarily leading the content of the information. Investigating the circumstances when analysts actually impact the information content supplied by management sheds light on analysts' role in shaping firms' information environment.

To examine the nature of information analysts demand in a question, we use ECC transcripts of all U.S. listed firms over the period 2006-2020 from the six main industries: Capital Goods (GICS 2010), Energy (GICS 1010), Software&IT (GICS 4510), Materials (GICS 1510), Health Care Equipment & Services (GICS 3510) and Banks (4010). Following prior research, we identify information features of question and answers in ECCs by measuring tone and uncertainty with word lists (Loughran and McDonald, 2016), level of specificity using Stanford Named Entity Recognizer (NER), information novelty comparing question and answers to the introduction of the ECCs and information uniqueness by comparing questions to other questions in a given ECC.

The main analysis highlight two aspects. First, we examine how the nature of questions affect the nature of managers' disclosure choice. We find that questions with higher specificity drive specific answers and questions with higher novelty drive novel answers. These results suggest that managers are incentivized to provide incremental information to investors when faced with specific and novel questioning from analysts to mitigate negative market reactions caused by irrelevant answers (Hollander et al., 2010; Gow et al., 2019; Barth et al., 2021). However, for questions that require very novel information, questions power on answer specificity suffers, consistent with firms being less willing to disclose precise information when asked for new information, because of potentially greater proprietary costs (Verrecchia, 1983).

We further conduct tests on other question features. The results show that questions with a negative tone increases answer specificity consistent with managers trying to show more con-

control and certainty in information when disclosing negative news. On the contrary, negative tone decreases answer novelty, consistent with managers trying to hide or obfuscate new information about negative news (Bloomfield, 2002; Li, 2008). We find that questions conveying greater uncertainty impact negatively both answer specificity and novelty potentially due to managers having less certainty about the information demanded. In addition, we show that questions placed later in the call have a negative impact on answer specificity but a positive impact on answer novelty, consistent with managers firstly taking questions about recent earnings press releases already disclosed. Finally, questions placed by major brokerage house impact negatively answer specificity and novelty consistent with favorable analysts potentially using private sources for specific and novel information (Mayew, 2008; Lee, 2016).

Our second set of tests investigate the market implications of the specificity and novelty of information generated during ECCs. Specifically, we analyse whether information specificity and novelty is incorporated into stock prices following conference calls. Our results show that there is a positive impact of information novelty on cumulative abnormal returns which provides supportive evidence indicating that new information is priced positively by investors as opposed to repetitive information. Further, we document a negative impact of information novelty on abnormal trading volumes, consistent with the expectations that new information decreases information asymmetry and thus, investors' disagreements in stock pricing, captured by abnormal trading (Kim and Verrecchia, 1991). While our results of the impact of total answers' specificity on capital markets are statistically insignificant, we document that the portion of answer specificity driven by analysts questions, estimated by a Two-Stage Least-Squared Regression, are priced by the market and it provides supportive evidence indicating that more precise information decreases disagreement among individual investors. In addition, we find a negative association between cumulative abnormal returns and the estimated answer specificity, providing supportive evidence indicating that investors miss-price information due to information complexity (Cohen et al., 2020; Impink et al., 2021)

We make three contributions. First, we contribute to the literature on managers' disclosure in their interactions with analysts (Huang et al., 2018; Dai et al., 2022). The existing literature investigates managers' disclosure behavior, potentially leading to unanswered questions

(Hollander et al., 2010; Barth et al., 2021; Gow et al., 2019) or predetermined scripts (Lee, 2016; Bamber and Abraham, 2020). Further, it investigates unsolicited answers which are off-topic but still relevant content to investors (Dai et al., 2022). We add to these studies by taking a different perspective and focusing on the analysts' choice of questions and their questions' features in terms of demanding new and specific information. Such questions' features from analysts demanding relevant content from management can proactively supply investors with useful information.

Our second contribution add to the growing literature exploring the information value of the narrative disclosures in conference calls. Prior research focuses on the textual characteristics of conference calls narratives, such as tone and linguistic style (Frankel et al., 2010; Price et al., 2012; Allee and Deangelis, 2015; Lee, 2016). To the best of our knowledge, only a few studies focus on textual measurement of information content of earning calls. Their focus is either on one textual attribute (Larcker and Zakolyukina, 2012; Cicon, 2017; Dai et al., 2022) or on unanswered questions (Hollander et al., 2010; Gow et al., 2019; Barth et al., 2021). We extend prior research in that we use advanced textual-analysis techniques to measure several textual attributes, such as specificity and novelty of information which allows for a more thorough analysis of information content provided to investors.

Lastly, we contribute to the literature on the market implications of information disclosed through ECCs. Prior research suggests that information asymmetries decrease after ECCs (Bowen et al., 2002; Brown et al., 2004) and that the information content of calls impacts the capital market (Allee and Deangelis, 2015; Chen et al., 2018a; Mayew et al., 2020; Bochkay et al., 2020). We add to the literature by providing insights on the impact of information specificity and novelty on trading volumes and stock price, offering a new perspective on disclosure content and information acquisition activities of sell-side analysts. Overall, we believe our findings will be of interest to investors, capital market intermediaries, and policymakers.

2. Literature review and hypothesis development

2.1. Firms disclosure policy and information intermediaries

Financial disclosures represent a medium for information exchange between managers and capital market participants, in markets characterized by information asymmetries (Akerlof, 1970). Research on financial disclosure provides extensive evidence that managers have superior information and knowledge compared to outside investors about interpreting firms' current conditions and performance (Ross, 1977; Myers and Majluf, 1984; Healy and Palepu, 1993, 1995). Since investors demand a premium for bearing information risk when there is information asymmetry between the firm and outside investors (Merton, 1986; Barry and Brown, 1985), managers have incentives to increase voluntary disclosure in order to reduce information risk and cost of capital (Myers and Majluf, 1984). On the other hand, extensive disclosure pose additional costs on firms and existing shareholders, such as costs of reduced incentives (Evans and Sridhar, 1996), litigation costs (Skinner, 1994) and proprietary costs (Verrecchia, 1983). Core (2001) suggests that the optimal disclosure choice is a function of the quality of mandated disclosure and a trade-off between lower capital and litigation costs against higher proprietary and incentive costs of producing voluntary disclosures.

Consistent with the idea that management optimizes disclosure levels, there is a demand for information intermediaries, such as financial analysts and rating agencies, which engage in discovering new information to uncover management's superior information (Healy and Palepu, 2001). Analysts impact firms' information environment through their activities of discovering and interpreting information (Huang et al., 2018). Therefore, when the management's disclosures are inadequate, financial analysts have strong incentives to acquire specific, value relevant information from firms (Matsumoto et al., 2011). Alternatively, managers may withhold information that they are unaware of that the market demands (Matsumoto et al., 2011). If information intermediaries point out and demand such information, then both the investors and management become aware of the nature of information withheld and demanded from the market. While investors do not penalize firms when they are uncertain about the kind of information withheld (Dye, 1985), the premium for information risk increases when such information demand is pointed out by financial analysts (Hollander et al., 2010). As such, man-

agement will either disclose the information or the market will infer negative information from the unwillingness to disclose (Skinner, 1994; Hollander et al., 2010). In order to avoid negative price revisions for firms' stocks, we expect that in general management will avoid withholding information to public demand from financial analysts.

2.2. Earnings conference calls and information discovery

ECCs are an important medium for companies to relay information to all interested parties, including institutional and individual investors, as well as buy- and sell-side analysts. ECCs became an important source of information for capital markets mainly after the adoption of Reg FD (Chiyachantana et al., 2004; Brown et al., 2004; Kimbrough, 2005). The scope of Reg FD required public companies to end selective disclosure of important information to analysts and investors. Instead, all disclosed nonpublic information should be accessible by capital markets' participants. After the adoption of Reg FD, several studies focused on examining whether value relevant information is provided during ECCs. In an early study, Kohlbeck and Magilke (2005) document higher abnormal returns surrounding earnings announcements when the latter are accompanied by conference calls, while Bushee et al. (2003) note increased levels of trading activity and return volatility during open conference calls. Additionally, studies show that ECCs are associated with a significant reduction in the post-earnings-announcement drift and cost of capital, suggesting that ECCs mitigate potential information asymmetry between managers and investors (Frankel et al., 1999; Bowen et al., 2002; Brown et al., 2004; Kimbrough, 2005). Furthermore, research suggests that Reg FD has decreased information asymmetry by opening all conference calls to the public, has resulted in increased numbers of individual investors trading and has increased the informativeness (Irani, 2004; Bushee et al., 2004; Sunder, 2005).

More recently, a strand of literature is exploring the information value of the narrative in conference calls. With advances in technology and data availability, recent research is examining the text content of earnings calls using computer-aided text analysis. Frankel et al. (2010) find a positive association between the stock returns generated during the conference calls and the participants' tone. Price et al. (2012) find that the tone of ECCs has a significant explanatory power on the concurrent abnormal stock return and predictive power relating to

post announcement abnormal stock return. Allee and Deangelis (2015) use linguistic dispersion from the computational linguistics literature to measure the degree to which tone words are evenly distributed throughout the prepared remarks section of conference call transcripts. They find significant variation in tone dispersion across firms but little time-series variation within firms, suggesting that managers deliberately structure tone as part of their overall narrative. Lee (2016) finds that lack of spontaneity in management linguistic style during Q&A session is negatively associated with immediate market reaction and with the abnormal returns in the subsequent quarter. Bochkay et al. (2020) document that when managers use more extreme words in earnings conference calls, trading volume around the call increases and stock prices react more strongly, especially in firms with weaker information environment.

Much of these studies focus on the textual characteristics of conference calls, such as tone and linguistic style. To the best of our knowledge, only a few studies focus on textual measurements of information content of earning calls. Hollander et al. (2010) explore whether managers withhold information from the investing public by classifying conference calls transcript as containing incomplete disclosure if at least one question from analysts is not answered. They find that managers regularly withhold information by not answering analysts' questions, which is interpreted negatively by investors. Matsumoto et al. (2011) document, that both presentations and Q&A sessions have incremental information content beyond the accompanying press releases. However, the Q&A portion reveals greater information content relative to the presentation segment, which is positively associated with analyst coverage. Mayew and Venkatachalam (2012) finds that analyst' questions to managers during Q&A session extract more value relevant information from managers and this information is priced by the market. Finally, Cicon (2017) uses cosine similarity to compare information content of introduction portion of ECCs with Q&A session and finds that Q&A portion reveals incremental information over the scripted opening remarks. While prior research suggests that Q&A sessions during ECCs are rich sources of value relevant information for capital markets, there is little insight on analysts' role related to the informativeness of the Q&A sessions.

2.3. Market reaction to information precision

An important stream of literature on information quality establishes that the extent to which firm disclosures convey meaningful information for the capital markets depend on the quality of information disclosed (Holthausen and Verrecchia, 1990; Kim and Verrecchia, 1991; Veronesi, 2000; Hautsch and Hess, 2007). This research stream measures information quality by its precision relative to the precision of information available prior to an announcement. Precision is constructed based on observable properties of analysts' information environment that capture the underlying quality of investors' information set. Such properties are forecast dispersion, squared error in the mean forecast, and the number of forecasts (Barron et al., 1998).

Most theoretical trade models imply that price and volume reactions prompted by a public announcement are positively related to the announcement precision (Beaver, 1968; Bamber and Cheon, 1995; Holthausen and Verrecchia, 1990; Kim and Verrecchia, 1991). Price change, as suggested by Beaver (1968), reflects the average change in traders' beliefs after a new public announcement, whereas trading volume is the sum of all individual investors' trades. Thus, while price changes measure the average reaction and the consensus in investors' beliefs, trading volume reflects disagreements among individual investors prior to reaching the equilibrium price (Kim and Verrecchia, 1991). Disagreement among investors may arise due to some investors believing that the other faction of investors are relying too heavily on relatively uninformative announcements or relying too little on relatively more informative announcements (Bloomfield and Fischer, 2011).

A main implication of studies on information quality and precision is that market reactions are driven not only by the quantity of unexpected information but also the precision of new information. Hutton et al. (2003) shows that more specific, verifiable supplements of firms' management earnings forecasts induce a stronger market reaction. Hautsch and Hess (2007) find that the price impact of more precise information is significantly stronger even after controlling for an asymmetric price response to 'good' and 'bad' news. Demers and Vega (2011) find that the positive tone of firms that provide more precise information, in terms of numerical intensity, is more highly related to stock price movements around earnings announcements. Hope et al. (2016) shows that more specific risk disclosures are significantly associated with

stronger market reactions to 10-K filings. Based on these empirical results, we expect that a greater specificity and novelty in new public announcements leads to more precise information and in turn, to stronger market reactions.

2.4. Hypothesis development

Financial analysts and investors rely on relevant, high-quality information disclosures from firms. ECCs represent a voluntary medium for such information disclosure from firms' management to capital market participants. However, firms are characterized by information asymmetries and information risk is priced by the market, which leads to higher cost of capital for firms and lower returns for investors (Akerlof, 1970; Merton, 1986; Barry and Brown, 1985; Brown et al., 2004). Therefore, decreasing information asymmetry between firms and investors is in the interest of all. During ECCs, analysts and thereby investors have the opportunity to publicly demand information from management and highlight any unwillingness from managements' side to disclose. While managers are not obliged to respond to all the questions, it is expected that they will try to accommodate this information demand, when they can, to avoid negative market reactions (Hollander et al., 2010; Gow et al., 2019).

Despite the incentive of reducing information asymmetry and the opportunity to do so during ECCs, several studies document that the managers withhold information during Q&A sessions by refusing to answer questions they are unwilling to answer (Gow et al., 2019), deviating questions (Dai et al., 2022), or answering by repeating information from opening remarks (Lee, 2016). Further, Bamber and Abraham (2020) indicate that management engages in vast preparatory work of carefully planning, scripting, and rehearsing before Q&A sessions to mitigate the risks associated with spontaneous interactivity. Whilst such preparations do not impair the value of Q&A sessions to capital market (Bamber and Abraham, 2020), they obfuscate the role of financial analysts in conference calls. Given the balance of the evidence in prior literature, we state our first two hypotheses in the alternative form:

H1: *More specific analyst questions during ECCs receive more specific answers from management.*

H2: *More novel analyst questions during ECCs receive more novel answer from*

management.

Even if analysts' efforts in posing questions that require new and specific information result in new and specific information from managers, it is not clear whether managers' responses will be informative to capital market participants. Prior studies show that investors are subject to attention limitations (e.g., Hirshleifer and Teoh, 2003; Peng, 2005; Peng and Xiong, 2006; Dellavigna and Pollet, 2009; Frederickson and Zolotoy, 2016). Further, Tetlock (2011) documents that investors are likely to over-react in response to repetitive news and under-react to more novel information. Moreover, recent research show that investors miss a large part of the rich information disclosed with 10-Ks partially due to disclosure complexity (Cohen et al., 2020; Impink et al., 2021). In our setting, answers by managers may disclose a variety of news and complexity during the Q&A sessions. Thus, we investigate whether specific and new information results in additional benefits for a firm's information environment. If the answers of managers are specific, new, and/or useful, we expect that their information is incorporated into market expectations. This leads us to our next hypothesis:

H3: *Higher levels of information specificity and novelty during Q&A sessions are associated with stronger market reactions.*

3. Methodology and sample

3.1. Sample selection

Our sample consists of all ECC transcripts of all U.S. listed firms over the period 2005-2020 from the six largest industries: Energy (GICS 1010), Materials (1510), Capital Goods (GICS 2010), Health Care Equipment & Services (GICS 3510), Banks (GICS 4010), Software&IT (GICS 4510). The data is provided by Finnhub Stock API. Each transcript is divided into an introduction by the management, followed by a Q&A session, where analysts ask questions and management give their answers. We identify the speakers in the Q&A sessions as analysts and managers based on their position description. Further, we group each question by an analyst and the corresponding answer from the management into separate question-answer pairs which constitute observations for our regressions. We remove transcripts where analysts were not

present or were not verifiable due to transcribing issues. Our final sample consists of 1,313,571 question-answer pairs from 43,028 unique ECC transcripts of 1,948 unique firms. Table 1 details our sample composition.

[Table 1 about here.]

3.2. Measuring novelty and specificity of information in an executive's response

Prior to applying any of the Natural Language Processing (NLP) tools, we perform several pre-processing steps to enhance the interpretability of our measures. First, we remove all non-English characters and all stop words.² Second, we convert all words into lower case and convert all plural nouns into their singular forms. Third, to retain financial terms' accurate meanings, we combine high frequency phrases that constitute specific financial term into one word or abbreviation. For example, "target price" is converted into "target-price" and "earnings per share" into "EPS". Lastly, we perform lemmatization, a common NLP pre-process step that groups together the different inflected forms of a word and takes into consideration the morphological analysis of the words, so that they can be analyzed as a single item. For example, "better" has "good" as its lemma or "accounting" has "account" as its lemma etc.

Following Cicon (2017), we capture novelty by $1 - \cos(\mathbf{x}, \mathbf{y})$ where $\cos(\mathbf{x}, \mathbf{y}) = \frac{\mathbf{x} \cdot \mathbf{y}}{\|\mathbf{x}\|_2 \|\mathbf{y}\|_2}$ is the cosine similarity, and \mathbf{x} and \mathbf{y} are two word vectors of two speeches, respectively. The word vectors contain the number of times each unique word appears in each of the speeches, and they can be of different size. Thus, our novelty measure use the similarity of words to capture the degree to which two speeches of ECC introductions, questions, or answers are unlike. It can have any value between 0 and 1, whereas a higher value indicates a higher novelty.

Prior research has shown that information specificity is an important textual characteristic that affects the informativeness of disclosures (Hope et al., 2016). Therefore, we measure the specificity of questions and answers by their number of words or phrases within entity categories relevant to the disclosing firm, divided by the total number of words. Particularly, we use the following entity categories given by the Stanford Named Entity Recognition (NER)

²Stop words are high frequency functional words that convey little economic meaning. Examples include "and", "the", and "what".

(Nlp.stanford.edu., 2020): names of locations, quantitative values in percentages and numbers, money values in dollars, times, and dates. We do not include the entity categories names of persons or names of locations in Stanford NER since these mostly relate to speakers and the company holding the ECCs.

3.3. Descriptive Statistics

Table 2 reports descriptive statistics for the key dependent and independent variables over the sample period. All continuous variables are winsorized at the top and bottom at 1%. Panel A reflects variables used in tests of H1 and H2, and Panel B reflects variables used in tests of H3. We find that Answer Specificity has a mean of 0,58% at the answer level and 3.38% at the ECC level, indicating that, on average, of the words contained in a management's answer 0.58% is specific words, while in all answers it is approximately 3.2% are specific entities. Answer Novelty has a mean of 84.9% at the answer level and 85.75% at the ECC level. The mean of Question Specificity is 0.62% at the question level and 3.3% for all questions in the call. In addition, the Question Novelty has a mean of 84,9% and all questions in the call have a mean of 86,2%. These statistics indicate that, on average, information specificity and novelty does not vary widely between questions and answers. The summary statistics for the control variables are largely consistent with those reported in previous studies (e.g.,Bochkay et al.).

[Table 2 about here.]

Table 3 presents both Pearson and Spearman correlations between the variables used in our analyses. Panel A tabulates the correlations among the variables used in our tests of H1 and H2, and Panel B tabulates the correlations among the variables used in the regression analyses to test H3. We report Pearson correlations above the diagonal and Spearman correlations below. We focus on the Pearson correlations and make the following observations. First, Panel A indicates that the correlation between our proxies for the specificity feature of information in question and answers, Question Specificity and Answer Specificity, is positive (0.13) and statistically significant ($p < 0.001$). Similarly, the correlation between our proxies for the novelty feature of information in question and answers, Question Novelty and Answer Novelty, is

positive (0.37) and statistically significant ($p < 0.001$). Second, in Panel B we find that the unconditional correlation between CAR_abs (Abnormal Volume) and Answer Specificity is negative (-0.08/-0.1) and statistically significant ($p < 0.001$). In contrast, the correlation between CAR_abs (Abnormal Volume) and Answer Novelty is positive (0.03/0.03) and statistically significant ($p < 0.001$). Lastly, we conducted a Variance inflation factor (VIF) test to measure the multicollinearity between the independent variables and no significant multicollinearity is detected.

[Table 3 about here.]

3.4. Empirical design

3.4.1. Tests of H1

H1 suggests a positive association between the specificity of the questions asked by analysts and their related answers given by the management. To test H1, we estimate the following OLS regression models (subscripts suppressed):

$$\text{Answer Specificity} = \beta_0 + \beta_1 \text{Question Specificity} + \text{Controls} + \epsilon \quad (1)$$

where Answer Specificity is the number of words or phrases of the answer of question-answer pair in a relevant entity category to the total number of words, while Question Specificity_{*i*} is the same for the question of question-answer pair. Control variables include question tone, question uncertainty, and question ordering within the ECC, as well as indicators for whether the question is posed by a well known brokerage house, answered by the CEO, and answered by a CFO. All continuous variables are winsorized at the top and bottom 1%. A detailed description of all variables is presented in Table A.1 in the appendix. Our interest in Eq. (1) centers on the estimated value of the coefficient β_1 . A positive value would be consistent with the management providing more specific answers when responding to an analyst asking a more specific question.

We include transcript fixed effects and robust standard errors at firm level to control for unobservable firm-level characteristics and across time variation. In addition, transcript fixed

effects allow us to measure only the variation between analysts within each conference call, thereby mitigating concerns about correlated omitted variables. Further,

3.4.2. Tests of H2

H2 predicts that questions asking for novel information are positively associated with novel information provided in the answers of management. We test this hypothesis by estimating the following models:

$$\text{Answer Novelty} = \beta_0 + \beta_1 \text{Question Novelty} + \text{Controls} + \epsilon \quad (2)$$

where Answer Novelty is the novelty of the answer of question-answer pair compared to the introduction in the same ECC, while Question Novelty is the same for the question of question-answer pair. Control variables are as described before. Our interest in Eq. (2) again centers on the coefficient β_1 . If the novelty of questions are positively associated with the novelty of answers, then we expect β_1 to be positive. As before, we include transcript fixed effects and robust standard errors at firm level.

3.4.3. Tests of H3

To test the effect of information specificity and novelty of ECCs and their Q&A sessions on the market, we investigate their effect on cumulative abnormal returns (*CAR*), absolute *CAR* (*AbsCAR*) and abnormal trading volume (*AbnVol*). This allows us to isolate the stock price reaction to the earnings announcements and corresponding ECC. Specifically, we calculate *CAR*, *AbsCAR* between one day before the ECC and one day after and *AbnVol* between one day before the ECC and one day after as:

$$\begin{aligned} \text{CAR}[-1, 1] &= \sum_{t=-1}^1 \text{AR} \\ \text{AbsCAR}[-1, 1] &= \sum_{t=-1}^1 |\text{AR}| \end{aligned}$$

where AR is the daily abnormal return calculated as the difference between the actual return of the firm and the mean return of a portfolio of all firms in the market index. $AbnVol$ is the average daily trading volume in 4-day window around ECC date in excess of the mean daily trading volume in the $[-90, -10]$ trading day window (in the logarithm form), excluding the trading volume data in 3-day window around earnings announcements. Day 0 is defined as the ECC date. Following Bochkay et al. (2020), we control for firm characteristics including Size, ROA, Leverage, BME, Loss, Volatility Return and Earnings Surprise.

Then, at the firm level, we investigate the effects of specificity and novelty by the following regressions:

$$\begin{aligned}
 CAR(-1, 1) &= \beta_0 + \beta_3 AnswerSpecificity + \beta_4 AnswerNovelty + Controls + \epsilon \\
 AbsCAR(-1, 1) &= \beta_0 + \beta_3 AnswerSpecificity + \beta_4 AnswerNovelty + Controls + \epsilon \quad (3) \\
 AbnVol(-1, 2) &= \beta_0 + \beta_3 AnswerSpecificity + \beta_4 AnswerNovelty + Controls + \epsilon
 \end{aligned}$$

where we aggregate the variables on question-answer level to firm level by firstly merging all questions together and all answers together for each ECC. Further, we measure question and answer specificity in the same fashion as in our previous tests, thus by the ratio of the total number of name entities divided by the length of speech of all merged questions and all merged answers, respectively. Similarly, Question and Answer Novelty are measured in the same fashion as in our previous tests, thus by comparing all merged questions and all merged answers respectively to the introduction portion of ECC. With the same logic, we create call controls based on the merged questions and the merged answers and we measure the tone and uncertainty based on Loughran and McDonald (2016). Further, we add controls for introduction features, such as Intro Specificity, Intro Tone and Intro Uncertainty. Finally, we controls for firm performance: SURP which is the difference between current earnings per share and the earnings per share the same quarter the previous year, scaled by the closing stock price the same quarter the previous year, SIZE which is the logarithm of the market capitalization, ROA which is net income to previous quarter total assets, Leverage which is the market equity to previous quarter market capitalization and BME which is book-to-market value of equity. Firm-Quarter fixed effects are included to control for time period shocks.

4. Results

4.1. Results for H1 and H2

Table 4 presents the results from estimating models based on Equations 1 and 2 . In these models, we regress Answer Specificity and Answer Novelty on our measures of question features. We include transcript fixed effects, using within-transcript variation in question features. We cluster standard errors at the firm level.

Consistent with H1, the results of estimating model (1) indicate a positive relation between Question Specificity and Answer Specificity. More specifically, the coefficient on Question Specificity is 0.142 ($p < 0.001$). To provide a sense of the economic significance of the effect of Question specificity on Answer Specificity, we estimate the effect of a one standard deviation change in Question Specificity. We find that a one standard deviation change in Question Specificity is associated with a 14.2% increase in Answer Specificity.

[Table 4 about here.]

Results from estimating model (4) are similar to those from model (i). Again, consistent with our hypothesis H2, the coefficient on Question Novelty is positive (0.307) and statistically significant ($p < 0.001$). The effect of a one standard deviation change in Question Novelty is associated with a 30.7% increase in Answer Specificity.

In addition, Table 4 shows questions cross feature effects on Answer Specificity and Novelty. In Model (2) and (3), we show that Question Novelty and Uniqueness are negatively associated with Answer Specificity. Further, Model (4) documents a negative association between Question Specificity and Answer Novelty, while Model (5) shows that Question Uniqueness is positively associated with Answer Novelty.

Because different questions' features impact answers with opposing directions, our main finding on the associations between question and answer specificity (novelty) may not hold when a question is very novel and very unique or very specific and low levels of uniqueness. To controls for different levels of questions' other features, we create two interaction variables for Model (1). The first interaction term (QSxHighest QNU) is the answer specificity multiplied by a dummy that takes the value of one if question novelty and question uniqueness are

among the 20% observations with the highest question novelty and uniqueness and zero otherwise. The second interaction term (QSxLowest QNU) is the question specificity multiplied by a dummy that takes the value of one if question novelty and question uniqueness are among the 20% observations with the lowest question novelty and uniqueness and zero otherwise. Similarly, for Model (4), we create one interaction term that is question novelty multiplied by a dummy that takes the value of one if question specificity is among the 20% observations with the highest question specificity and question uniqueness is among the 20% observations with the lowest question uniqueness, since question specificity and uniqueness impact answer novelty with opposing signs. The second interaction term is question novelty multiplied by a dummy that takes the value of one if question specificity is among the 20% observations with the lowest question specificity and question uniqueness is among the 20% observations with highest question uniqueness.

[Table 5 about here.]

Table 5 presents the results from estimating Equations 1 and 2 when adding the interaction terms described above. Model (1) shows that when question novelty and uniqueness is high, the effect of question specificity on answer specificity is 10.8% lower (-0.015/0.139) compared to if the question novelty and uniqueness is within the 20th and 80th percentiles. Further, in cases when the question novelty is low (below the 20th percentile), the effect of question specificity on answer specificity is 19,4% higher (0.027/0.139) compared to if the question novelty and uniqueness is within the 20th and 80th percentiles. Model (2) shows that when question specificity is high and question uniqueness is low, the effect of Question Novelty on Answer Novelty is 12.3% higher (0.038/0.309) compared to if the question specificity and uniqueness is within the 20th and 80th percentiles. Similarly, when question specificity is low and question uniqueness is high, the effect of Question Novelty on Answer Novelty is 5.83% higher (0.018/0.309) compared to if the question specificity and uniqueness is within the 20th and 80th percentiles. These results indicate that analysts' power in driving the specificity and novelty in managements' responses is dependent on the composition of questions' specificity, novelty and uniqueness.

In addition to our main variables of interest, Table 5 shows interesting associations between other question features on Answer Specificity and Answer Novelty. More specifically, we document that questions with a more positive tone drive answer specificity down but increase answer novelty. Similarly, questions that are taken towards the end of the call decrease Answer Specificity but have a positive impact on Answer Novelty. Further, questions posed by analysts that represent Big Brokerage Houses do not trigger more specificity or novelty as compared to other analysts. While, when it comes to who answers the questions, we document that CEOs tend to be less specific but more novel in their answers, while CFO tend to be more specific but less novel.

In general, the results in Table 4 and Table 5 provide strong support for H1 and H2 and are consistent with executives providing greater levels of information specificity and novelty in response to analysts asking for such information.

4.2. Results for H3

Table 6 reports the results from regressing Abnormal Volume days [-1, 1], CAR days [-1, 1], |CAR days [-1, 1]| and CAR days [-1, 10] on Answer Specificity, Answer Novelty and other controls variables. In model (1) and (2), we document a negative and statistically significant association between Answer Novelty and the abnormal trading volume (Abnvol) and the absolute CAR in the days subsequent the ECC (coefficient = -0.023, $p = 0.012$, coefficient = -0.033, $p = 0.000$). These results show that new information provided during ECCs decrease abnormal trading volume and absolute abnormal returns, which reflect disagreements among individual investors prior to reaching the equilibrium price (Kim and Verrecchia, 1991). Further, Model (3) shows a positive and significant association between Answer Novelty and CAR[-1,1], which reflects that investors price new information regardless whether it is good or bad news.

In contrast, for all the tests, we document that the effect of Answer Specificity on abnormal returns and volume is small (-0.001) and statistically insignificant.

[Table 6 about here.]

As part of our control variables, we include introduction specificity (Specificity), which in contrast to Answer Specificity, we find a negative and significant relation to absolute CAR[-

1,1] and positive and significant relation to CAR[-1,1], both results in par with our hypothesis that specificity decreases disagreement between investors and is positively priced by the market. These results indicate that specificity is an important feature for capital markets, however, answer specificity in particular seems to not be picked up by investors. Differently from novel information, it is possible that other factors simultaneously impact answer specificity significance for capital markets. First, it could be that the specificity in answers is driven by the specificity in introduction, thus it is already captured by the market. Second, the specific information provided in answers may be limited to the extent that management is willing to disclose and may be irrelevant to the capital markets, therefore investors do not react. Third, it may also be that the specificity in answers does not answer or it is irrelevant to questions posed by analysts. For the purpose of this study, we are interested in investigating whether the answer specificity that is driven by analysts questions impacts capital market reactions. To account for the extent of answer specificity by analyst questions, we use a two-stage least-squares regression approach. Specifically, in the first stage, we estimate the predicted value of answer specificity (Pred_Answer_Specificity). In addition, simultaneously, we estimate the predicted value of answer novelty (Pred_Answer_Novelty) in order to examine whether the answer novelty driven by analyst questions is priced differently compared to the overall Answer Novelty. The first-stage answer specificity and answer novelty model is constructed as follows:

$$\begin{aligned} \text{Pred_Answer_Specificity} = \beta_0 + \beta_1 \text{Question Specificity} + \beta_2 \text{Question Novelty} \\ + \beta_3 \text{Question Tone} + \beta_3 \text{Question Uncertainty} + \epsilon \end{aligned} \quad (4)$$

$$\begin{aligned} \text{Pred_Answer_Novelty} = \beta_0 + \beta_1 \text{Question Specificity} + \beta_2 \text{Question Novelty} \\ + \beta_3 \text{Question Tone} + \beta_3 \text{Question Uncertainty} + \epsilon \end{aligned} \quad (5)$$

In the second stage, we replace Answer Specificity with Pred_Answer_Specificity and Answer Novelty with Pred_Answer_Novelty, which are estimated from Model (4) and Model (5), and examine the relation between Pred_Answer_Specificity and Pred_Answer_Novelty

with capital market indicators, Abnormal Volume days [-1, 1], CAR days [-1, 1], |CAR days [-1, 1]| and CAR days [-1, 10]. We tabulate the results of the second-stage regression model in Table 7.

[Table 7 about here.]

We find that `Pred_Answer_Specificity` is positively and significantly associated with abnormal trading volume (`Abnvol`) (coefficient = 0.144; p-value < 0.000) and negatively and significantly associated with abnormal cumulative returns `CAR[-1,1]` (coefficient = -0.1079; p-value < 0.000). These results indicate that the proportion of answer specificity that is driven by question features does in fact impact capital market reactions by increasing abnormal trading around the days of earnings calls. In addition, the negative impact in `CAR[-1,1]` may be a sign that information specificity may be more complex and difficult to correctly be assessed and implemented in stock prices by investors (Cohen et al., 2020; Impink et al., 2021).

The results for `Pred_Answer_Novelty` show consistent results with our primary findings. We document a negative and statistically significant association between Answer Novelty and the abnormal trading volume (coefficient = -0.026, p = 0.049, as well as with the absolute `CAR[-1,1]` (coefficient = -0.040, p = 0.000). In regards to `CAR[-1,1]`, `Pred_Answer_Novelty` is small and statistically insignificant. These results may be an indication that when the management provides new information, capital markets react regardless whether it is in response to analyst questions or not.

5. Conclusions

In this study, we study analyst–management interactions on ECCs. Using a sample of 43,028 conference call transcripts, we apply computerized textual analysis tools to capture the specificity and novelty of information within each question–answer pair. Specifically, we measure information novelty using 1- cosine similarity between each question or answer and the managements’ remarks in the beginning of each conference call, which results in 1,313,571 question-answer pair level observations. We find that questions’ specificity and novelty is significantly positively associated with both the specificity and novelty of management responses.

We also provide evidence that when questions require a high level of new and unique information, question specificity is less effective in acquiring specific information from management as compared to when questions demand for information already disclosed in the opening remarks and that other analysts also asked for. Our results suggest that question features like specificity and novelty are an effective method through which analysts can gain information from managers. Moreover, we find that information novelty disclosed during Q&A generates informational benefits for the firm's information environment. Firms with higher levels of information novelty decrease their abnormal trading, lower their absolute abnormal return and increase their cumulative abnormal returns in the days surrounding ECCs. The results suggest that the novelty of information revealed during ECCs is incrementally useful in predicting future firm performance and generating consensus among investors, thus decreasing information asymmetry. In contrast to information novelty, information specificity in managements' answers seems to not be priced by capital markets. However, we document a strong market reaction to specificity of information provided during opening remarks. Therefore, we estimate the value of answer specificity that is driven by question features only, therefore abstracting from other potential drivers of answer specificity, such as irrelevant or repetitive specificity. Our tests using the predicted value of answer specificity confirm our expectations that similarly to information novelty, information specificity reduces investors' disagreements, but it is more difficult and complex to price, causing negative abnormal returns.

Our paper makes a number of important contributions. We document the effects of question features by analysts in acquiring new and specific information by management at question answer level by exploiting the conversational nature of a conference call setting. Thus, we contribute to the growing literature on the information provided by manager-analyst exchanges in a conference call setting. Our findings suggest that information specificity and novelty can be used to extract private information and enhance the quality of the information environment. As such, our findings should be of interest to investors, market intermediaries, and policymakers.

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Table 1: Sample Construction

Panel B: Firm-quarter observations

Finnhub firm-quarter observations from 2004-2020	63 608
Less: Observations missing transcript data	2 460
Less observations with missing values of variables (e.g., Size, MB, and ROA) constructed based on Compustat.	4 230
Less observations with missing values of variables (e.g., CAR and Volatility) constructed based on CRSP.	13 890
Final sample of firm-quarter observations	43 028

This table presents the sample selection procedure. We start with a sample of 63,608 earnings conference calls for the period 2005 to 2020 from the Finhub Database. The baseline sample in our main analysis comprises 43,028 conference calls. All variables are as defined in Appendix A.

Table 2: Summary Statistics

Panel A: ECC textual variables at Q&A level

	N	Mean	Std. Dev.	25 %	Median	75 %
<i>Answer Variables</i>						
Answer Specificity	1 313 571	0.01	0.01	0.00	0.00	0.01
Answer Novelty	1 313 571	0.85	0.10	0.79	0.86	0.93
Answer Tone	1 313 571	0.05	0.25	- 0.01	0.00	0.18
Answer Uncertainty	1 313 571	0.11	0.15	0.00	0.00	0.018
<i>Question Variables</i>						
Question Specificity	1 313 571	0.01	0.01	0.00	0.00	0.01
Question Novelty	1 313 571	0.89	0.08	0.85	0.90	0.95
Question Uniqueness	1 313 571	0.77	0.09	0.72	0.78	0.83
Question Tone	1 313 571	- 0.01	0.26	- 0.13	- 0.00	0.04
Question Uncertainty	1 313 571	0.14	0.18	0.00	0.00	0.24
<i>Other Variables</i>						
Big Broker House	1 313 571	0.23	0.42	0.00	0.00	0.00
Question Order	1 313 571	0.52	0.29	0.27	0.52	0.77
CEO Answers	1 313 571	0.57	0.50	0.00	1.00	1.00
CFO Answers	1 313 571	0.25	0.44	0.00	0.00	1.00

Panel B: Firm Variables at ECC level

	N	Mean	Std. Dev.	25 %	Median	75 %
<i>Answer Variables</i>						
Answer Specificity	43 028	0.03	0.01	0.02	0.03	0.03
Answer Novelty	43 028	0.86	0.10	0.84	0.89	0.92
Answer Tone	43 028	0.05	0.14	- 0.04	0.06	0.15
Answer Uncertainty	43 028	0.18	0.06	0.13	0.17	0.22
<i>Question Variables</i>						
Question Specificity	43 028	0.03	0.01	0.03	0.03	0.04
Question Novelty	43 028	0.86	0.08	0.84	0.88	0.92
Question Tone	43 028	- 0.01	0.14	- 0.10	- 0.00	0.09
Question Uncertainty	43 028	0.21	0.07	0.16	0.21	0.26
<i>Introduction Variables</i>						
Specificity	43 028	0.07	0.02	0.05	0.07	0.08
Tone	43 028	0.00	0.16	- 0.10	- 0.01	0.09
Uncertainty	43 028	0.33	0.20	0.18	0.33	0.46
<i>Firm Variables</i>						
CAR[-1,1]mom	43 028	0.00	0.08	- 0.04	0.00	0.04
CAR[-1,10]mom	43 028	- 0.00	0.12	- 0.06	- 0.00	0.06
CAR [-1,1]abs	43 028	0.06	0.06	0.02	0.04	0.08
Abnormal Volume	43 028	0.51	0.57	0.18	0.49	0.83
Loss	43 028	0.28	0.45	0.00	0.00	1.00
Size	43 028	3.24	0.82	2.70	3.26	3.78
ROA	43 028	- 0.00	0.10	- 0.00	0.01	0.04
Leverage	43 028	0.59	0.25	0.41	0.58	0.78
BME	43 028	0.56	0.52	0.23	0.44	0.74
Earning Surprise	43 028	0.00	0.07	- 0.01	0.00	0.01
Return Volatility	43 028	0.05	0.17	0.01	0.02	0.03

This table presents the summary statistics of the variables in our main analyses for the mean (Mean), standard deviation (Std. Dev), the low quartile (25%), median (Median), and high quartile (75%) of the distributions of the variables. The two main sets of analyses include tests on the determinants of information novelty and specificity and on the impact of information specificity and novelty on Cumulative Abnormal Return and Abnormal Volume. The full sample comprises 43 028 earnings conference calls from 2005 to 2020. All continuous variables have been winsorized at the 1st and 99th percentiles. All variables are as defined in Appendix A.

Table 3: Univariate Correlations

Panel A: ECC textual variables at Q&A level

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Answer Specificity	1	-0.16	-0.05	0.01	0.13	-0.08	-0.05	-0.02	-0.03	-0.01	-0.02	-0.06	0.11
(2) Answer Novelty	-0.16	1	-0.11	-0.09	-0.09	0.37	-0.0	0.01	-0.09	-0.03	0.1	0.06	-0.02
(3) Answer Tone	-0.05	-0.11	1	-0.06	-0.02	-0.01	0.04	0.18	0.01	0.01	0.00	0.01	-0.05
(4) Answer Uncertainty	0.01	-0.09	-0.06	1	0.02	-0.05	0.02	-0.04	<i>0.09</i>	0.01	-0.02	0.00	0.00
(5) Question Specificity	0.13	-0.09	-0.02	0.02	1	-0.24	-0.07	-0.01	-0.03	-0.01	-0.03	-0.01	0.10
(6) Question Novelty	-0.08	0.37	-0.01	-0.05	-0.24	1	0.18	0.02	-0.08	-0.03	0.11	0.03	-0.08
(7) Question Uniqueness	-0.05	-0.00	0.04	0.02	-0.07	0.18	1	-0.03	-0.0	-0.0	0.03	0.03	-0.04
(8) Question Tone	-0.02	0.01	0.18	-0.04	-0.01	0.02	-0.03	1	-0.04	0.00	-0.00	0.00	-0.03
(9) Question Uncertainty	-0.03	-0.09	0.01	0.09	-0.03	-0.08	-0.00	-0.04	1	0.02	-0.05	0.01	0.00
(10) Big Broker House	-0.01	-0.03	0.01	<i>0.01</i>	-0.01	-0.03	-0.00	0.00	0.02	1	-0.07	0.03	0.00
(11) Question Order	-0.02	0.10	0.00	-0.02	-0.03	0.11	0.03	-0.00	-0.05	-0.07	1	-0.02	-0.01
(12) CEO Answers	-0.06	0.06	0.01	0.0	-0.01	0.03	0.03	0.00	0.01	0.03	-0.02	1	-0.24
(13) CFO Answers	0.11	0.06	<i>-0.05</i>	0.00	0.10	-0.08	-0.04	-0.03	0.00	0.00	-0.01	-0.24	1

Panel B: Firm Variables at ECC level

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) CAR [-1,10]_mom	1	0.75	-0.01	0.00	-0.00	0.00	0.05	-0.00	0.00	-0.01	0.09	-0.01	0.03	0.01	-0.00	-0.02	0.02	0.03	0.01	0.00	0.04	0.00
(2) CAR[-1,1]_mom	0.75	1	-0.03	-0.03	-0.00	0.00	0.08	-0.01	0.00	-0.01	0.13	-0.02	0.04	0.02	-0.01	-0.02	0.02	0.03	0.01	0.00	0.06	0.01
(3) CAR_abs	-0.01	-0.03	1	0.39	-0.08	0.03	0.00	-0.04	0.02	0.05	-0.03	-0.01	-0.11	-0.05	0.06	0.21	-0.25	-0.16	-0.07	0.02	-0.01	-0.01
(4) Abnormal Volume	0.00	-0.03	0.39	1	-0.10	0.03	0.08	-0.07	0.08	0.01	0.03	-0.03	-0.07	-0.01	0.05	0.02	0.04	0.05	-0.08	-0.14	0.04	-0.05
(5) Answer Specificity	-0.00	-0.00	-0.08	-0.10	1	-0.11	-0.16	0.12	-0.11	-0.07	-0.08	0.07	0.33	0.01	-0.08	-0.13	0.01	0.08	0.11	0.14	-0.00	-0.01
(6) Answer Novelty	0.0	0.0	0.03	0.03	-0.11	1	0.06	-0.05	-0.03	0.86	0.02	-0.01	-0.07	-0.34	0.43	0.07	-0.02	-0.06	-0.02	-0.02	0.01	-0.03
(7) Answer Tone	0.05	0.08	-0.0	0.08	-0.16	0.06	1	-0.23	0.02	0.07	0.36	-0.08	-0.06	0.05	0.06	0.08	-0.00	-0.06	-0.05	-0.14	0.04	-0.00
(8) Answer Uncertainty	-0.00	<i>0.01</i>	-0.04	-0.07	0.12	-0.05	-0.23	1	-0.01	-0.04	-0.12	0.16	0.09	-0.02	-0.01	-0.10	0.00	0.07	0.04	0.09	-0.01	<i>-0.01</i>
(9) Question Specificity	0.0	-0.0	0.02	0.08	-0.11	-0.03	0.02	-0.01	1	-0.05	0.0	0.02	0.03	-0.01	-0.01	-0.00	0.02	0.05	-0.02	-0.09	<i>0.01</i>	0.00
(10) Question Novelty	<i>-0.01</i>	<i>-0.01</i>	0.05	0.01	-0.07	0.86	0.07	-0.04	-0.05	1	0.03	-0.00	-0.07	-0.32	0.41	0.09	-0.12	-0.08	-0.01	0.01	0.01	-0.01
(11) Question Tone	0.09	0.13	-0.03	0.03	-0.08	0.02	0.36	-0.12	0.00	0.03	1	-0.11	-0.01	0.05	0.03	0.07	-0.05	-0.06	-0.04	-0.08	0.04	-0.00
(12) Question Uncertainty	-0.01	-0.02	-0.01	-0.03	0.07	-0.01	-0.08	0.16	0.02	-0.00	-0.11	1	0.02	-0.01	-0.02	-0.06	0.01	0.03	0.03	0.04	-0.00	-0.0
(13) Specificity	0.03	0.04	-0.11	-0.01	0.33	-0.07	-0.06	0.09	0.03	-0.07	-0.01	0.02	1	0.03	-0.07	-0.22	0.07	0.19	0.05	0.04	0.02	0.02
(14) Tone	0.01	0.02	-0.05	-0.01	<i>0.01</i>	-0.34	0.05	-0.02	-0.01	-0.32	0.05	-0.01	0.03	1.0	-0.27	-0.06	0.02	0.04	0.03	0.01	<i>0.01</i>	0.02
(15) Uncertainty	-0.00	-0.01	0.06	0.05	-0.08	0.43	0.06	-0.01	-0.01	0.41	0.03	-0.02	-0.07	-0.27	1	0.09	-0.07	-0.07	-0.03	-0.05	0.00	-0.02
(16) Loss	-0.02	-0.02	0.21	0.02	-0.13	0.07	0.08	-0.10	-0.00	0.09	0.07	-0.06	-0.22	-0.06	0.09	1	-0.38	-0.60	-0.03	0.10	-0.00	0.01
(17) ROA	0.03	0.03	-0.16	0.05	<i>0.08</i>	-0.06	-0.06	0.07	0.05	-0.08	-0.06	0.03	0.19	0.04	-0.07	-0.60	0.39	1	-0.08	-0.04	-0.01	<i>0.01</i>
(18) Leverage	<i>0.01</i>	<i>0.01</i>	-0.07	-0.08	0.11	-0.02	-0.05	0.04	-0.02	-0.01	-0.04	0.03	0.05	0.03	-0.03	-0.03	0.11	-0.08	1	-0.10	0.04	-0.02
(19) BME	0.00	0.00	0.02	-0.14	0.14	-0.02	-0.14	0.09	-0.09	0.01	-0.08	0.04	0.04	0.01	-0.05	0.10	-0.24	-0.04	-0.10	1	-0.10	-0.00
(20) Surprise	0.04	0.06	-0.01	0.04	-0.00	0.01	0.04	-0.01	0.01	0.01	0.04	-0.00	0.02	0.01	0.00	-0.00	0.00	-0.01	0.04	-0.10	1	0.00
(21) Volatility	0.00	0.01	-0.01	-0.05	-0.01	-0.03	-0.00	-0.01	0.00	-0.01	-0.00	-0.00	0.02	0.02	-0.02	0.01	-0.15	0.01	-0.02	-0.00	-0.00	1

The table provides Spearman (below) and Person (above) correlation for variables used in our regression analysis. Panel A reflects the variables from textual analyses of ECCs. Panel B reflects the variables measuring firm performance and capital market reactions. All firm-specific variables have been winsorized at the 1st and 99th percentiles. Bold typeface indicates significance at the 1% level and italic typeface indicates significance at the 5% level. See Appendix A for variable definitions and measurements.

Table 4: The Effect of Question Features on the Specificity and Novelty of Information Provided by an Executive

	Answer Specificity (1)	Answer Specificity (2)	Answer Specificity (3)	Answer Novelty (4)	Answer Novelty (5)	Answer Novelty (6)
Question Specificity	0.142***			-0.084***		
Question Novelty		-0.083***			0.307***	
Question Uniqueness			-0.040***			0.015***
Question Tone	-0.016***	-0.014***	-0.017***	0.013***	0.007***	0.014***
Question Uncertainty	-0.023***	-0.032***	-0.027***	-0.079***	-0.058***	-0.077***
Question Order	-0.021***	-0.015***	-0.024***	0.109***	0.074***	0.111***
CEO Answers	-0.047***	-0.045***	-0.045***	0.107***	0.103***	0.106***
CFO Answers	0.209***	0.225***	0.236***	-0.014***	0.019***	-0.031***
Big Broker House	-0.006***	-0.010***	-0.009***	-0.022***	-0.017***	-0.021***
intercept	-0.025***	-0.030***	-0.032***	-0.052***	-0.059***	-0.048***
Transcript FE	Y	Y	Y	Y	Y	Y
Observations	1,313,571	1,313,571	1,313,571	1,313,571	1,313,571	1,313,571
R_d^2	0.09	0.021	0.016	0.030	0.28	0.023

Model (1) reports the results of tests examining the effect of an analyst's specificity (Question Specificity) on the specificity of an executive's response (Answer Specificity) to an analyst's question. Model (2) reports the results of tests examining the effect of an analyst's novelty (Question Novelty) on the specificity of an executive's response (Answer Specificity) to an analyst's question. Model (3) reports the results of tests examining the effect of an analyst's uniqueness (Question Uniqueness) on the specificity of an executive's response (Answer Specificity) to an analyst's question. Model (4) reports the results of tests examining the effect of an analyst's specificity (Question Specificity) on the novelty of an executive's response (Answer Novelty) to an analyst's question. Model (5) reports the results of tests examining the effect of an analyst's novelty (Question Novelty) on the novelty of an executive's response (Answer Novelty) to an analyst's question. Model (6) reports the results of tests examining the effect of an analyst's uniqueness (Question Uniqueness) on the novelty of an executive's response (Answer Novelty) to an analyst's question. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5: Top and bottom quantile analysis of QA features between Analysts and Managers

	Answer Specificity (1)	Answer Novelty (2)
Question Specificity (QS)	0.139***	
Question Novelty (QN)		0.309***
Interaction (QSxHighest QN)	-0.015***	
Interaction (QSxLowest QN)	0.027***	
Interaction (QNxHighest QS)		0.038***
Interaction (QNxLowest QS)		0.018***
Question Tone	-0.016***	0.007***
Question Uncertainty	-0.024***	-0.056***
Question Order	-0.020***	0.074***
CEO Answers	-0.046***	0.105***
CFO Answers	0.206***	0.016***
Big Broker House	-0.006***	-0.016***
intercept	-0.025***	-0.060***
Transcript FE	Y	Y
Observations	1,313,571	1,313,571
R^2	0.035	0.116
Adjusted R^2	0.035	0.116
Residual Std. Error	0.982	0.940
F Statistic	2286.785***	12902.689***

Model (1) includes an interactive term between Question Specificity and an indicator value equal to one (Highest QN) if the analyst has the highest novelty (top 20%) value relative to other analysts during the earnings call. In addition, it includes an interactive term between Question Specificity and an indicator value equal to one (Lowest QN) if the analyst has the lowest novelty (bottom 20%) value relative to other analysts during the earnings call. Model (2) includes an interactive term between Question Novelty and an indicator value equal to one (Highest QS) if the analyst has the highest specificity (top 20%) value relative to other analysts during the earnings call. In addition, it includes an interactive term between Question Novelty and an indicator value equal to one (Lowest QS) if the analyst has the lowest specificity (bottom 20%) value relative to other analysts during the earnings call. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6: The Effect of Q&A features on CAR and Abnormal Volume

	Abnvol (1)	CAR [-1,1] (2)	CAR[-1,1] (3)	CAR[-1,10] (4)
Answer Novelty	-0.023**	-0.033***	0.022**	0.011
Answer Specificity	-0.001	-0.010	-0.012	-0.022***
Answer Tone	-0.018***	-0.039***	0.102***	0.065***
Answer Uncertainty	0.007	0.006	-0.007	-0.001
Specificity	-0.011	-0.049***	0.049***	0.019**
Tone	-0.001	-0.014*	0.036***	0.026***
Uncertainty	0.002	0.018*	-0.025**	-0.005
ROA	0.013	0.013	-0.034***	-0.035***
Loss	-0.035**	0.068***	0.038**	0.058***
Size	0.101***	-0.125***	-0.151***	-0.082***
Leverage	0.063***	0.098***	0.008	0.010
BME	0.018	0.065***	0.004	0.012
SURP	0.029***	0.003	0.061***	0.037***
Volatility	0.056	-0.036***	0.004	-0.001
intercept	0.011**	-0.019***	-0.010*	-0.016***
Firm Year FE	Y	Y	Y	Y
Observations	43 028	43 028	43 028	43 028
R ²	0.271	0.235	0.081	0.070

This table reports the results of tests examining the effect of information specificity and novelty on Cumulative Abnormal Returns (CAR). The sample consists of firm-quarter observations from 2005 through 2020. All variables are defined in Appendix A. All continuous variables have been winsorized at the 1st and 99th percentiles. p-values are computed using standard errors clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7: Two-stage least squares regression analysis

	Abnvol (1)	CAR [-1,1] (2)	CAR[-1,1] (3)	CAR[-1,10] (4)
Answer Novelty	-0.022*	-0.040***	-0.000	-0.018
Answer Specificity	0.163***	0.043	-0.099***	-0.092**
Answer Tone	0.018***	-0.055***	0.090***	0.061***
Answer Uncertainty	-0.005	0.006	-0.003	0.001
Specificity	-0.011	-0.049***	0.049***	0.019**
Tone	0.010	-0.023***	0.030***	0.022***
Uncertainty	0.007	0.013	-0.019	0.006
ROA	0.004	0.013	-0.032***	-0.036***
Loss	-0.026	0.065***	0.033*	0.051**
Size	0.101***	-0.125***	-0.176***	-0.102***
Leverage	0.058***	0.108***	0.002	-0.004
BME	0.005	0.077***	-0.005	-0.004
SURP	0.034***	-0.002	0.057***	0.034***
Volatility	-0.057***	-0.019**	0.008	-0.001
intercept	0.008	-0.018***	-0.009*	-0.014***
Firm Year FE	Y	Y	Y	Y
Observations	43 028	43 028	43 028	43 028

This table reports the results of the two-stage least squares regression analysis examining the effect of question features on answer specificity and novelty and then on the second stage answer's features impact on capital markets. The sample consists of firm-quarter observations from 2005 through 2020. All variables are defined in Appendix A. All continuous variables have been winsorized at the 1st and 99th percentiles. p-values are computed using standard errors clustered by firm. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Appendices

Appendix A. Variable Definitions

Table A.1: Variable Definitions

[Caption here].

Variable	Definition
Answer Specificity	The extent to which managers use specific entities in terms of time, date, numbers, location, percentages and currency in an answer to respond to an analysts' question in a conference call. Measured through NER;
Answer Novelty	The extent to which managers use new information in an answer to respond to an analysts' question as compared to the Introduction part in a conference call. Measured through Cosine Similarity;
Question Specificity	The extent to which analysts use specific entities in terms of time, date, numbers, location, percentages and currency in a question to managements in a conference call. Measured through NER;
Question Novelty	The extent to which analysts use new information in a question to management as compared to the Introduction part in a conference call. Measured through Cosine Similarity;
Question Uniqueness	The extent of the maximum uniqueness of analysts questions to management as compared to the other questions in a conference call. Measured through Cosine Similarity;
Answer Uniqueness	The extent of the maximum similarity of management response to analysts' questions as compared to the other answers in a conference call. Measured through Cosine Similarity;
CFO Answers	Question answered by CFO. This variable takes the value of 1 when the percentage of the number of words spoken by CFO divided by total number of words of the answer is the largest compared to the percentage of CEO or other members of management answering the question, otherwise 0;
CEO Answers	Question answered by CEO. This variable takes the value of 1 when the percentage of the number of words spoken by CEO divided by total number of words of the answer is the largest compared to the percentage of words spoken by respectively CEO or other members of management answering the question, otherwise 0;
Big Brokerage Firm	It takes 1 when the question is asked by top 10 brokerage houses: RBC Capital Markets, Credit Suisse, Goldman Sachs, Raymond James, Morgan Stanley, Wells Fargo, JPMorgan, Bank of America, Stifel and Barclays, and 0 otherwise;

Table A.1: Variable Definitions (continued)

Variable	Definition
Question Ordering	It is calculated as the order of the question in the conference call divided by total number of question. Thus, first question takes the lowest value and last question takes 1;
Tone question	The proportion of positive-related words minus negative related words in a question divided by the total number of words in a question. Based on Loughran and McDonald (2011);
Uncertainty Tone question	The proportion of uncertain-related words in a question based on Loughran and McDonald (2011);
Tone answer	The proportion of positive-related words minus negative related words in an answer divided by the total number of words in a question. Based on Loughran and McDonald (2011);
Uncertainty Tone answer	The proportion of uncertain-related words in an answer based on Loughran and McDonald (2011);
Firm Level Analysis	
Answer Specificity	The extent to which managers use specific entities in terms of time, date, numbers, location, percentages and currency in their answers to respond to analysts' questions in a transcript t. Measured through NER;
Answer Novelty	The extent to which managers use new information in their answers to respond to analysts' questions as compared to the Introduction part in a conference call's transcript t. Measured through Cosine Similarity;
Question Specificity	The extent to which analysts use specific entities in terms of time, date, numbers, location, percentages and currency to ask managements questions in a conference call. Measured through NER;
Question Novelty	The extent to which analysts use new information to ask management as compared to the Introduction part in a conference call. Measured through Cosine Similarity;
Specificity	The extent to which managers use specific entities in terms of time, date, numbers, location, percentages and currency in their Introduction part in a conference call. Measured through NER;
Answer Tone	The proportion of positive-related words minus negative related words in all answers in a ECC divided by the total number of words in all answers. Based on Loughran and McDonald (2011);
Question Tone	The proportion of positive-related words minus negative related words in all questions in a ECC divided by the total number of words in all questions in that ECC. Based on Loughran and McDonald (2011);
Question Uncertainty	The proportion of uncertain-related words in all questions based on Loughran and McDonald (2011);

Table A.1: Variable Definitions (continued)

Variable	Definition
Answer Uncertainty	The proportion of uncertain-related words in all answers based on Loughran and McDonald (2011);
Tone	The proportion of positive-related words minus negative related words in the introduction part in a ECC divided by the total number of words in all questions in that ECC. Based on Loughran and McDonald (2011);
ROA	The quarterly earnings scaled by total assets in the previous quarter;
Loss	An indicator variable equal to one if a firm's earnings are negative in the prior quarter;
Size	The natural logarithm value of total equity in the previous quarter;
Leverage	The total debts divided by total assets in the previous quarter;
BME	The market-to-book value of total equity in the previous quarter;
Surprise	Calculated using a seasonal random walk model where the difference between the earnings-per-share and the earnings-per-share in the same quarter of the prior year is scaled by the stock price at the close of the lagged quarter;
Volatility	The standard deviation of returns measured over the window of 90 days to 10 days prior to the ECC;
Volatility	The standard deviation of returns measured over the window of 90 days to 10 days prior to the ECC;
AbnVol	The difference of the logarithm of the mean of trading volume measured over the window of 90 days minus the logarithm of the mean of trading volume measured over the window of 3 days around the ECC;
CAR[-1,1]	Daily abnormal return calculated as the difference between the actual return of the firm during the 2 days surrounding and the mean return of a portfolio of all firms in the market index;