

Strategic Communication and Investor Reactions to Earnings Downgrades

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Abstract

This study investigates how firms strategically use disclosure channels and managerial communication styles to mitigate negative investor reactions to downward earnings guidance. While prior literature emphasizes information asymmetry and managerial obfuscation, we argue that investor behavior is also shaped by the outcomes of Prospect Theory, particularly negativity bias and ambiguity aversion, which can amplify market reactions to bad news. Using a sample of 6,994 downward guidance events issued by U.S. public firms between 2005 and 2023, we evaluate the tone and complexity of managerial communication using both dictionary-based textual measures and large language model (LLM) assessments of aggressiveness, optimism, and evasiveness in conference call transcripts. Our findings indicate that firms relying solely on press releases experience significantly more negative cumulative abnormal returns compared to firms that accompany the disclosure with Form 8-K filings or conference calls. Greater transparency reduces negative reactions, while heightened uncertainty language exacerbates them. Tone also plays a critical role as aggressive or evasive managerial responses intensify negative market reactions, whereas optimism meaningfully attenuates them. We show that textual complexity, especially in opening statements and lengthy answers during Q&A, is associated with more negative returns, consistent with investor aversion to ambiguity. Results remain robust using alternative LLMs and principal component analyses.

JEL Classification: G14, D82, M41

Keywords: Conference Call, Information Asymmetry, Sentiment Analysis, Negativity Bias, Ambiguity Aversion, SEC Form 8k, Event Study.

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Introduction and Motivation

This study systematically examines the role of conference calls in mitigating information asymmetry for corporations announcing downward revisions in their financial performance forecasts. Our premise is that managerial communication strategies, especially in contexts of disseminating adverse financial information, can significantly influence investor perception. This assertion is rooted in the findings of Bushee, et al. (2018), who noted a propensity among managers to employ complex linguistic structures to obfuscate critical information during such disclosures. Additionally, the work of Hollander, et al. (2010) underscores the negative connotations investors often associate with the absence of news, further emphasizing the need for transparent communication.

For corporate disclosure, the Securities and Exchange Commission (SEC) mandates the prompt filing of Form 8-K under certain circumstances, such as the inception of a significant contract or when information pivotal to investor decision-making emerges. This requirement is a facet of the Regulation Fair Disclosure (Reg FD), which aims to guarantee equitable access to information for all investors, thereby prohibiting selective disclosure. Landsford, et al. (2009) highlight that conventional dissemination methods like press releases or filing Form 8-K are deemed sufficient for public disclosure under Reg FD.

Rawson et al. (2023) explores managerial tactics of simultaneous disclosure of unrelated events with material negative news to increase investor processing costs. Blankespoor et al. (2020) suggests that when managers must disclose unfavorable news, they might aim to increase the complexity of the communication to soften investors' reaction.

We believe this dim view of investor processing capabilities as misleading because the marginal investor is a professional investor (managing institutional money), often with the support of financial analysts. Instead, we motivate investor reaction to downgrades through Prospect Theory (Kahneman & Tversky, 1979), which posits that investors are loss-averse, so bad news often provokes stronger reactions than good news. When a firm only issues a terse press release about an earnings downgrade (without a conference call or explanatory context), investors may fear the worst due to negativity bias and ambiguity aversion, leading to larger selloffs. Negativity bias refers to the mind's tendency to give more weight and attention to negative information and experiences than to equally intense positive ones (Baumeister, et al., 2001). Ambiguity aversion results in investor inertia and decreases risk-taking during highly ambiguous environments (Meyer and Uhr, 2024). Negativity bias is especially pronounced under ambiguity. Williams (2015) shows that in more uncertain environments, investors place greater weight on bad earnings news than on good news, consistent with ambiguity-aversion amplifying the negativity bias. Thus, when delivering bad earnings news, executives have an incentive to reduce uncertainty and ambiguity through additional discussion with a positive tone when possible.

We examine whether firms can mitigate negative stock market responses by using higher transparency and more positive managerial tones in formal disclosures, such as SEC Form 8-K filings and earnings conference calls. Our findings show that firms relying solely on press releases experience stronger negative market reactions compared to those that also file Form 8-Ks and hold conference calls. These additional channels provide management with opportunities to justify the earnings downgrade, offer forward-looking explanations, and reduce uncertainty, thereby softening investor backlash. By analyzing the interplay between disclosure and market outcomes, this study contributes to the broader literature on financial communication, information

transparency, and investor behavior. It highlights that how firms communicate bad news—not just what they communicate—plays a critical role in shaping market perceptions and valuation.

Second, our research advances beyond the widely used approach of Loughran and McDonald (2011). Rather than relying on predefined dictionaries, we employ AI-based textual analysis to evaluate the overall tone of conference call transcripts. Specifically, we classify managerial responses into three tone dimensions—aggressiveness, evasiveness, and optimism—and analyze how these communicative styles influence investor reactions. By assessing the full context of managerial discourse rather than counting individual words, our approach captures nuances in communication that traditional dictionary methods overlook. The findings reveal that higher levels of aggressiveness and evasiveness magnify negative market reactions, which are consistent with ambiguity aversion amplifying negativity bias. A more optimistic tone helps attenuate the negativity bias and thus moderates the decline in stock returns following earnings guidance downgrades. While prior studies have focused on the role of information disclosure in reducing asymmetry (Leuz and Verrecchia, 2000), our study specifically addresses how the tone and transparency affect investor reactions, particularly in the context of downward revisions in financial performance. This aspect of research is relatively underexplored in existing literature.

Furthermore, our study contributes to the literature by demonstrating that the use of complex language in managers' opening statements during conference calls may signal obfuscation, rather than transparency. We also find that longer, more verbose answers to analyst questions are associated with more negative market reactions, suggesting that investors may interpret excessive length as a lack of clarity or confidence.

Lastly, our research contributes to the understanding of Regulation Fair Disclosure (Reg FD) compliance and its practical implications. By examining how companies utilize different

communication channels to comply with Reg FD while managing investor perceptions, the study sheds light on the strategic considerations underpinning corporate disclosure practices. The findings of this study have practical implications for corporate communication strategies, investor relations, and regulatory policies. By demonstrating the varying effects of different communication methods and tones on market reactions, our study provides valuable insights for managers and policymakers in designing more effective communication strategies and regulations.

The next section reviews the literature and develops the hypothesis. Our sample is presented next, along with our methodology. This section describes our use of AI modes for determining managerial tone. Descriptive statistics are presented, followed by our analysis. We summarize our findings in the last section.

Literature Review and Hypotheses

Company View

The regulatory framework surrounding Form 8-K, specifically under Item 2.02, necessitates the disclosure of significant non-public information pertinent to financial results or the financial status for a concluded quarterly or annual fiscal period. These disclosure requirements are triggered upon the release of such material non-public information. It is critical to acknowledge that the obligation to file Form 8-K is circumvented if substantial non-public information is disseminated through an easily accessible press release, accompanied by a public presentation, within a designated 48-hour period.

The research conducted by Rawson et al. (2023) delved into the dynamics of managers simultaneously releasing press statements in conjunction with Form 8-K filings. The study postulates that managers may tactically issue press releases detailing events unrelated to the one necessitating the 8-K filing, alongside negative 8-K disclosures, with the intent of amplifying

investor processing burdens. Their hypothesis extends beyond the conventional practice of juxtaposing negative and positive news to moderate stock price declines, or the combination of multiple negative news items. Also, Blankespoor et al. (2020) suggest that investors engaging with one disclosure may inadvertently sacrifice the benefits derivable from processing another disclosure. This aspect highlights the potential strategic value in the timing and pairing of different types of disclosures, which can influence investor behavior and market reactions.

In addition, investors react more strongly to narrative disclosures when the CEO is present or is associated with the message (Asay et al., 2018), managers use self-inclusive language (i.e., I, me, we, us) (Chen and Loftus, 2019), and analysts frame qualitative statements in the context of historical financial and nonfinancial performance measures (Caylor et al., 2017). Other aspects of language can influence investors, like noun-verb framing (is a provider versus provides) (Yang and Tan, 2024) and audit report readability (Smith, 2023).

Our study seeks to explore these dynamics further, contributing to the broader understanding of managerial communication strategies and their impact on the investment landscape.

Investor View

How negative news is communicated can trigger cognitive biases and emotional reactions in investors. Prospect theory (Kahneman & Tversky, 1979) posits that investors are loss-averse, so bad news often provokes stronger reactions than good news. If a firm only issues a terse press release about an earnings downgrade (without a conference call or explanatory context), investors may fear the worst due to negativity bias and ambiguity aversion, leading to larger selloffs. Negativity bias refers to the mind's tendency to give more weight and attention to negative information and experiences than to equally intense positive ones (Baumeister, et al., 2001),

leading to the phrase “negative news shouts while positive news only whispers.” Thus, executives might minimize the magnitude of an earnings downgrade through additional discussion when possible.

Ambiguity aversion results in investor inertia and decreases risk-taking during highly ambiguous environments (Meyer and Uhr, 2024). Negativity bias is especially pronounced under ambiguity. Williams (2015) shows that in more uncertain environments, investors place greater weight on bad earnings news than on good news, consistent with ambiguity-aversion amplifying the negativity bias. Thus, even when delivering bad earnings news, executives have an incentive to reduce uncertainty and ambiguity.

The literature shows that investors overreact to ambiguous or unaddressed bad news, consistent with these biases. For example, Hollander et al. (2010) find that when managers “leave participants in the dark” by refusing to answer questions, investors interpret the silence as bad news, reacting negatively. Also, Noh and Zhou (2022) document that CEOs who are evasive and fail to reduce ambiguity by blaming the economy for poor performance ultimately suffer negative abnormal returns in subsequent periods. Their findings imply that investors psychologically penalize managers perceived as evasive or combative, while rewarding those seen as candid or accountable. Both studies align with a behavioral tendency to assume the worst when facing low transparency from ambiguity and complexity.

Previous research suggests that managers are aware of investors' limitations in processing information and use this knowledge to strategically disclose negative news. For instance, they often release 8-K forms containing negative news on Fridays or after market hours to lessen the impact (Niessner, 2015; Segal and Segal, 2016). Blankespoor et al. (2020) suggests that when managers must disclose unfavorable news, they might aim to increase the complexity of the

communication to soften investors' reaction. While the impact on stock prices might be temporary, managers usually prefer a gradual decrease rather than a sharp drop in stock values (deHaan et al. 2015).

However, increasing complexity increases ambiguity and decreases transparency to investors. Given the negativity bias and ambiguity aversion, increasing complexity would increase the negative investor reaction to earnings downgrades, not lessen the impact. Bushee et al. (2009) suggests that extensive press coverage around earnings announcements can reduce information asymmetry. Additionally, Van Buskirk (2012) found that more detailed earnings press releases correlate with greater abnormal returns and volume around earnings announcements.

Thus, we propose that managers might employ multiple information release avenues to increase transparency, reduce ambiguity, and provide a positive tone. This can be done with less complex and positive language. Specifically, if companies need to report significant negative operational results in their 8-K reports (item 2.02), managers might counterbalance the negative aspects by infusing the reports with positive sentiment and providing a transparent conference call.

Our hypotheses, presented in an alternative format, are as follows:

H1: Companies with downgraded forecasts that use Form 8-K and conference calls to decrease uncertainty and ambiguity will experience a milder investor reaction.

H2: Companies with downgraded forecasts that use a positive managerial tone in Form 8-K and conference calls will experience a milder investor reaction.

Sample and Methodology

Our sample comprises 6,994 instances of downward earnings guidance issued by U.S. firms between 2005 and 2023. In accordance with SEC regulations, a Form 8-K must be filed when such guidance revisions meet the materiality threshold. Typically, the information is first communicated

via a press release and, where required, followed by an 8-K filing within four business days. Firms may also discuss the revised guidance during conference calls.

To illustrate, consider Macy's Inc. (formerly Federated Department Stores, Inc.) lower guidance in May 2007. On May 10, Macy's reported via press release that April sales had declined by 2.2% relative to the prior year, falling short of its guidance of 2.5–4% same-store sales growth:

“CINCINNATI--(BUSINESS WIRE)--May 10, 2007--Federated Department Stores, Inc. (NYSE:FD)(NYSE Arca:FD) today reported total sales of \$1.837 billion for the four weeks ended May 5, 2007, a decrease of 2.1 percent compared to total sales of \$1.875 billion in the same period last year. On a same-store basis, Federated's sales for April were down 2.2 percent. This compares with the company's guidance for a same-store sales increase of 2.5 percent to 4 percent in April.¹”

Six days later, on May 16, the firm issued another press release reporting diluted earnings per share of \$0.11 for Q1 2007, compared to a loss of \$0.13 per share in the prior year:

“CINCINNATI, Ohio, May 16, 2007 - Federated Department Stores, Inc. today reported diluted earnings per share from continuing operations of 11 cents for the first quarter of 2007, ended May 5, 2007. This compares with a loss of 13 cents per diluted share from continuing operations for the same 13-week period last year.²”

Both announcements triggered disclosure requirements under Items 2.02 (Results of Operations and Financial Conditions) and 9.01 (Financial Statements and Exhibits), leading Macy's to file Form 8-Ks on the same days as the press releases (May 10 and May 16). Because a quarterly earnings call was already scheduled for May 16, the company used that call to address both April sales results and quarterly earnings.

¹ <https://www.sec.gov/Archives/edgar/data/794367/000079436707000110/exhibit99051007.htm>

² <https://www.sec.gov/Archives/edgar/data/794367/000079436707000112/exhibit991051607.htm>

Firms have discretion in the timing and communication channels, which creates challenges in aligning announcements, filings, and conference calls. To address this, we matched Form 8-K filing dates with press release dates within a six-day window, consistent with the four-business-day filing requirement (e.g., a Friday announcement allows until the following Wednesday to file). We assume compliance given penalties for late filings. We then identified cases where multiple disclosure items were announced on the same day or discussed in a single call using the “mostimportantdateutc” variable and transcript data from Wharton Research Data Services (WRDS). If multiple items were announced but not discussed on a call, the announcement date was used as the most important date, with no transcript linked. If they were discussed during a call, the call date became the most important date, with transcripts attached.

Although not all Form 8-K announcements are followed by conference calls, when calls do occur, 99% are transcribed by Capital IQ (CIQ). In our sample, 5,007 cases, representing 71.6% of all downward guidance announcements, involve both a Form 8-K filing and a conference call. For these events, we conducted sentiment analysis using CIQ transcripts. Sentiment polarity was computed using *SpaCy* and *TextBlob*, two popular Python NLP libraries, which generate scores ranging from -1 (negative) to $+1$ (positive). Note that these libraries use pre-trained, general-purpose sentiment models, not domain-specific finance dictionaries. When multiple transcript versions were available for the same event, we averaged the sentiment values across versions.

Using Macy’s May 16, 2007, earnings call as an example (see Table 1), the negative revision prompted a Form 8-K filing. However, CFO Karen Hoguet’s opening statement exhibited a sentiment score of $+0.1236$, while analyst questions reflected more neutral to negative tones, ranging mostly between -0.05 and $+0.25$. The combined effect resulted in an overall call sentiment

score of +0.1140 as depicted in Figure 1. This example illustrates how managerial tone during conference calls may partially offset the negative implications of lowered earnings guidance.

[Insert Table 1]

[Insert Figure 1]

However, while the simple Bag of Words (BoW) approaches are straightforward to implement and interpret, it often fails to capture the nuance and context of a full sentence or conversation. Consider the following example:

Analyst: *"Are you not concerned about the rising interest rates impacting your debt servicing costs?"*

CFO: *"No, we're not concerned. We've already locked in our rates through 2027."*

Here, a BoW approach would emphasize negative terms (e.g., not, concerned, debt) and misclassify the CFO's reassurance as negative sentiment. Contextual models such as BERT or GPT better capture intent by linking the CFO's response to forward-looking risk management. To improve sentiment analysis, we supplement BoW with GPT-4o, as well as other large language models (LLMs) for robustness (GPT-5 and GPT-OSS-120b). Using a 1–10 scale, we evaluate three sentiment dimensions: aggressiveness, optimism, and evasiveness.

For each unique company event (defined by *"keydevid"*, *"companyid"*, *"mostimportantdateutc"*, *"transcriptid"*, *"headline"*, and *"keydeveventtypeid"*), we preprocess transcripts by concatenating speaker text in the format <Speaker Name>: <Transcript Text>, removing operator remarks and HTML tags. The processed transcripts are then batch-scored using GPT-4o. In cases where multiple transcripts represent the same event, whether across consecutive days or differing IDs, we average sentiment scores to generate final measures. The following system prompt was used:

You are a discerning AI assistant who is helping a user classifier the tone in business transcript. Give a transcript, output a score for aggressiveness, optimism, and evasiveness. Use the following to guide your response:

Aggressiveness

Rank on a scale from 1 to 10. 1 is very passive where the speaker is calm, cooperative, and deferential. They avoid confrontation, downplay issues, and use soft language. For example, "We understand the challenges and are working on improvements." 10 is highly aggressive where the speaker is confrontational, cutting off others, or responding sharply. They may challenge or attack the analysts' points, often sounding defensive or angry. For example, "That's completely inaccurate, and I'm surprised you'd suggest that."

Optimism

Rank on a scale from 1 to 10. 1 is very pessimistic where the speaker expresses strong doubts, focusing on challenges, risks, or negative outcomes. Little to no hope is conveyed. For example, "We're facing significant hurdles, and there's no clear path to improvement in the near future.". 10 is highly optimistic where the speaker is confident and enthusiastic about the future, focusing on opportunities and minimizing concerns. They express strong belief in positive outcomes. For example, "We're on track for remarkable growth, and we're very excited about the upcoming year."

Evasiveness

Rank on a scale from 1 to 10. 1 is highly transparent where the speaker is open, providing detailed answers and sharing comprehensive information. No attempt is

made to avoid difficult topics. For example, "Here are the full details of our strategy, including the risks and how we plan to address them.". 10 is highly evasive where the speaker actively avoids answering questions, changing topics or deflecting with unrelated information. There's a clear intent to avoid transparency. For example, "We're focused on other priorities right now and don't have anything further to add on that.

We further analyze the textual characteristics of Form 8-K filings themselves. Readability indices from WRDS include Loughran–McDonald (2001) positive and negative word proportions, word count, and the Gunning Fog index. Higher Gunning Fog values indicate greater complexity. Firm-level controls such as size and leverage are obtained from CIQ.

Descriptive Statistics

Table 2 presents the descriptive statistics for all key variables used in the empirical analyses, and all variable definitions are provided in the Appendix. The measures related to SEC Form 8-K filings show substantial variation across sentiment categories. The Loughran–McDonald negative word proportion has a mean of 1.37% with a median close to zero, indicating that many filings contain little explicitly negative terminology, but some filings contain noticeably higher concentrations of negative words. Positive and uncertainty word proportions exhibit similar patterns, with uncertainty showing the widest dispersion (ranging up to 5.26%), a finding consistent with the nature of downward guidance announcements where managers often emphasize uncertainty regarding future performance. Litigious terminology also varies widely (max = 9.43%), suggesting that some firms embed legal cautionary language more extensively than others.

For conference calls, the tone variables derived from AI-based classification show meaningful cross-sectional differences. Aggressiveness and evasiveness both cluster at relatively

low levels (means of 2.22 and 3.08, respectively), implying that most managers adopt a restrained, non-confrontational communication style even when delivering bad news. In contrast, optimism scores are substantially higher (mean = 6.87), suggesting that managers frequently seek to balance negative operational information with forward-looking positive framing. Readability and verbosity measures also reveal notable dispersion. The Gunning–Fog index for opening statements averages around 10.1, indicating moderately complex language typical of formal corporate communication. The file-size proxies show considerable variability in the length of presenter remarks, analyst questions, and managerial responses, suggesting differing levels of managerial transparency and engagement across calls.

Turning to firm-level control variables, the sample includes firms of varying size, leverage, and operational efficiency. The average firm size (log revenues = 3.26) reflects a mix of mid-sized and large firms. Leverage averages about 0.51, while asset turnover exhibits substantial heterogeneity, ranging from 0.008 to more than 8.4. Roughly 22% of firms report losses, and nearly 80% are audited by a Big Four auditor. About 8% of the sample consists of OTC-traded firms, consistent with the expectation that firms outside major exchanges may face higher information asymmetry and weaker market scrutiny. Overall, the descriptive statistics confirm that the dataset captures a diverse set of disclosure events and firm characteristics, allowing robust tests of how communication channels and tone affect market reactions.

[insert Table 2]

Analysis

To measure the impact of lowered guidance on expected returns, we estimate cumulative abnormal returns (CARs). CARs are computed using Fama–French three-factor model to estimate expected returns ten days before until 10 days after the downward guidance announcement. CARs are

averaged over the sample and shown in Table 3 as Cumulative average abnormal returns (CAARs). CAARs are -8.02% for firms using only a press release and -6.01% using all three information release channels. The difference is significant at the 1% level using a difference in means test.

[insert Table 3]

To estimate the effects of SEC Form 8-K filings and associated communication channels, we introduce dummy variables to represent each disclosure scenario. Our baseline specification is:

$$CAR = \beta_0 + \beta_1 D_j + \beta_2 Control + \epsilon, j \in \{PressOnly, PressCall, SEC8K, All\}, \quad (1)$$

where *PressOnly* indicates lowered guidance events disclosed solely through press releases; *PressCall* captures cases where both a press release and a conference call are used; *SEC8K* represents events disclosed only via SEC Form 8-K filings; and *All* denotes instances where all three channels (press release, SEC Form 8-K, and conference call) are employed. The Control vector includes firm-level characteristics.

The results in Table 4 show that the CARs are significantly negative for firms issuing a Press Release only (estimation 1). When firms use other channels, even multiple channels to communicate the information, estimates are either insignificant or positive (nonsignificant and significant). This suggests that using additional communication channels gives management the opportunity to reduce ambiguity and offer a positive tone. As for the control variables, the estimated coefficients are significant on Firm Size, Accruals, Asset Turnover, Big Four auditing, and firms trading over-the-counter. No matter which information channels are used, large firms and firms with Big Four auditors experience less negative CARs. This is likely because large firms have less information asymmetry. Also, firms with more accruals and those traded over-the-counter experience more negative CARs. These results are consistent throughout our analysis and thus we do not present them in the following analysis to conserve space.

[insert Table 4]

Ambiguity – Tests of Uncertainty and Transparency

We next examine the impact of sentiment and transparency in SEC Form 8-K filings on market reactions. Sentiment is captured using the Loughran–McDonald indices, including positive, negative, uncertainty, and litigious tones. The positive index is a list of words that generally convey a positive sentiment in a financial context. The number of positive words in 8-K filing is used to gauge management's optimism. The negative index contains words with negative sentiment, and a higher count of these words reflects negative sentiment. The uncertainty index includes words that emphasize imprecision or a general notion of risk (such as "risk," "unpredictable," or "volatility"). A higher frequency of uncertainty words may increase ambiguity to investors. The litigious index includes words that reflect a propensity for legal issues or a higher risk of lawsuits. This tone helps identify potential legal exposure that might not be captured by the other indexes. In addition, we also include the size of the 8-K filing as a proxy for transparency, where larger file size reflects greater disclosure. Our empirical model is:

$$CAR = \beta_0 + \beta_1 LM_i + \beta_2 SEC\ 8K\ file\ size + \beta_3 Control + \epsilon, \quad (2)$$

[insert Table 5]

Table 5 shows the results. Equation (2) is estimated with only one of the four indexes in columns (1) – (4). All four indexes are included in the estimated shown in column (5). Of the four Loughran–McDonald indices, only the uncertainty index coefficient is significant and is negative (see columns 3 and 5). The higher the uncertainty, the more negative are the associated CARs. In addition, the transparency proxy (8-K filing file size) coefficient is significantly positive in all five estimations, illustrating that higher transparency leads to smaller associated CARs. Together, these

results are consistent with Hypothesis 1 (H1) and show the importance of minimizing ambiguity by reducing uncertainty and increasing transparency.

Impact of Tone

A typical conference call consists of two stages. It begins with an opening statement by a company representative explaining the firm's performance and the circumstances surrounding the lowered guidance event, followed by a Q&A session where analysts pose questions and managers respond. Next, we estimate the impact of managerial *sentiment*, *aggressiveness*, *evasiveness*, and *optimism* on cumulative abnormal returns associated with conference calls.

First, we measure textual *sentiment* in earnings conference calls using a Bag-of-Words approach with the finance-specific word lists of Loughran and McDonald (2011). Our approach follows prior work in finance textual analysis (e.g., Tetlock, 2007; Tetlock et al., 2008; Loughran and McDonald, 2011) and prior research on conference call tone (Price et al., 2012; Blau et al., 2015). We also estimate managerial *aggressiveness*, *evasiveness*, and *optimism* using GPT-4o approach detailed above. Our estimation model is:

$$CAR = \beta_0 + \beta_1 Sentiment + \beta_2 Aggressiveness + \beta_3 Evasiveness + \beta_4 Optimism + \beta_5 Control + \epsilon. \quad (3)$$

Column (1) of Table 6 shows the results for the *sentiment* (Bag-of-Words) index in conference calls. The *sentiment* coefficient is not statistically significant. Columns (2) to (4) report the models including *aggressiveness*, *evasiveness*, and *optimism* indexes individually, while Column (5) shows the estimates with all three measures. Note that the coefficients for *aggressiveness* and *evasiveness* are significantly negative, which illustrates that greater aggressiveness and evasiveness in conference calls lead to a larger negative reaction to the downgrade. These results are consistent with H1. The coefficient for *optimism* is significantly

positive, which reduces the negative reaction to the downgrade. This result is consistent with Hypothesis 2 (H2) in that a more positive tone mitigates the negative investor reaction. When estimated together (Column 5), all three estimates remain significant and of the same sign.

[insert Table 6]

We next add measures of complexity in the conference calls. Following Bushee and Huang (2024), we use the Gunning Fog method to compute complexity, which is calculated from average sentence length and the percentage of complex words. Specifically, we use the method for computing complexity in the opening remarks in the conference call (*Opening Gunning*) and in the question and answer portion (*Q&A Gunning*). In addition, like Brockman et al. (2017), we also include the length of the opening presentation (*fsizepresent*), the questions (*Questions* file size), and the answers (*Answers* files size). Thus, in Table 7, we add these measures to Equation (3) and estimate the following regression for conference calls:

$$CAR = \beta_0 + \beta_1 Aggressiveness + \beta_2 Evasiveness + \beta_3 Optimism + \beta_4 fsizepresenter + \beta_5 Opening\ Gunning + \beta_6 Questions + \beta_7 Answers + \beta_8 Q\&A\ Gunning + \beta_9 Control + \epsilon. \quad (4)$$

[insert Table 7]

Note that the tone estimates (*aggressiveness*, *evasiveness*, and *optimism*) are very similar to those presented in Table 6 and are thus consistent with H1 and H2. For the added complexity variables, the coefficients for the Opening Gunning are negative and statistically negative for all regressions. The coefficients for the size of the Answers file are also significantly negative. These results suggest that when executives provide a more complex conference call opening and when they provide longer answers to questions, the magnitude of the negative CARs is larger. The coefficients for the size of the opening presentation, and the size of the questions are not

significant. Neither is the coefficient for the Q&A Gunning. These results are consistent with the notion that increasing ambiguity through evasiveness and complexity increases investor negativity bias as consistent with H1.

Management Sentiment and Tone

Next, we evaluate the combined effect of managerial sentiment and tone for firms issuing a SEC Form 8-K filings and providing a conference call on cumulative abnormal returns. Specifically, we combine (1) the Loughran-McDonald sentiment variables; (2) the aggressiveness, evasiveness, and optimism of management using GPT-4o variables; and (3) the complexity variables.

[insert Table 8]

Panel A of Table 8 shows the results for the conference call variables. The estimates are very similar to those in Table 7. Again, increasing ambiguity through evasiveness and complexity increases the investors' negative reaction. However, the results in Panel B for the SEC Form 8-K are substantially different than shown in Table 5, where the negative Loughran-McDonald *uncertainty* variable was the only significant sentiment variable. However, Panel B of Table 8 shows that variable is no longer statistically significant. It appears that the managerial tone variables from the associated conference call subsume the uncertainty variable from the 8-K. The Loughran-McDonald *positive* variable is now shown to be positive and significant in estimates (1) and (2). However, when the *optimism* variable is included (as in columns 3 and 4), the LM *positive* variable becomes insignificant. Thus, being positive and optimistic in the conference call or Form 8-K moderates the negative reaction of investors, which is consistent with H2.

Robustness Tests

In Table 9, we present robustness tests using alternative AI models to generate tone measures for *aggressiveness*, *evasiveness*, and *optimism*. In addition to GPT-4o, we also measure these variables using GPT-5 and GPT-OSS-120b. Column (1) repeats the conference call analysis of Table 6 using the mean tone variables across these three models. The estimated coefficients remain highly significant with signs consistent with our main results and the conclusion that higher aggressiveness and evasiveness continue to amplify negative market reactions, while optimism mitigates them. Column (2) extends this analysis by constructing principal components from the tone measures produced by the three AI models. The PCA-based factors yield nearly identical inferences, with *aggressiveness* and *evasiveness* loading negatively and *optimism* loading positively on cumulative abnormal returns. Together, these findings confirm that our results are not sensitive to the choice of AI model or measurement approach and that managerial tone has a robust and economically meaningful impact on investor responses.

[insert Table 9]

Conclusion

This study provides evidence that corporate communication strategy plays a critical role in shaping investor reactions to downward earnings guidance. Consistent with behavioral theories of negativity bias and ambiguity aversion, we find that the absence of contextual information, such as when firms release only terse press announcements, triggers disproportionately negative market responses. By contrast, firms that supplement the disclosure with Form 8-K filings and earnings conference calls experience significantly milder declines, suggesting that additional transparency mitigates investor uncertainty. Our results demonstrate that investors reward efforts to reduce ambiguity and interpret sparse disclosure as a potential signal of deeper problems.

Beyond disclosure channels, the tone and complexity of managerial communication substantially influence investor interpretation. Using advanced LLM-based tone assessments, we show that aggressiveness and evasiveness in conference calls amplify negative market reactions, while optimism alleviates them. These effects remain robust across multiple modeling approaches and alternative sentiment-scoring methods. Complexity, particularly in opening remarks and lengthy, non-transparent answers also predicts more negative returns. This reinforces the view that investors penalize ambiguity and interpret overly complicated language as a lack of managerial confidence. Together, these findings highlight that investors respond not only to the informational content of disclosures but also to the manner in which managers convey that information.

Our results have important implications for managers, regulators, and market participants. Managers delivering bad news can meaningfully influence investor reactions by providing transparent, timely, and optimistic explanations across multiple communication channels. Regulators may also consider these findings when evaluating the effectiveness of current disclosure requirements, especially the role of Form 8-K filings in promoting transparency. For investors and analysts, understanding the behavioral components of managerial communication can enhance interpretation of earnings guidance and improve assessments of firm value. Ultimately, this study underscores that strategic communication is a powerful tool in managing market perceptions during periods of unfavorable financial performance.

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Figure 1. Sentiment Analysis on Questions Asked by Investors at Macy's Inc.'s Q1 Earnings Call on May 16th, 2007.

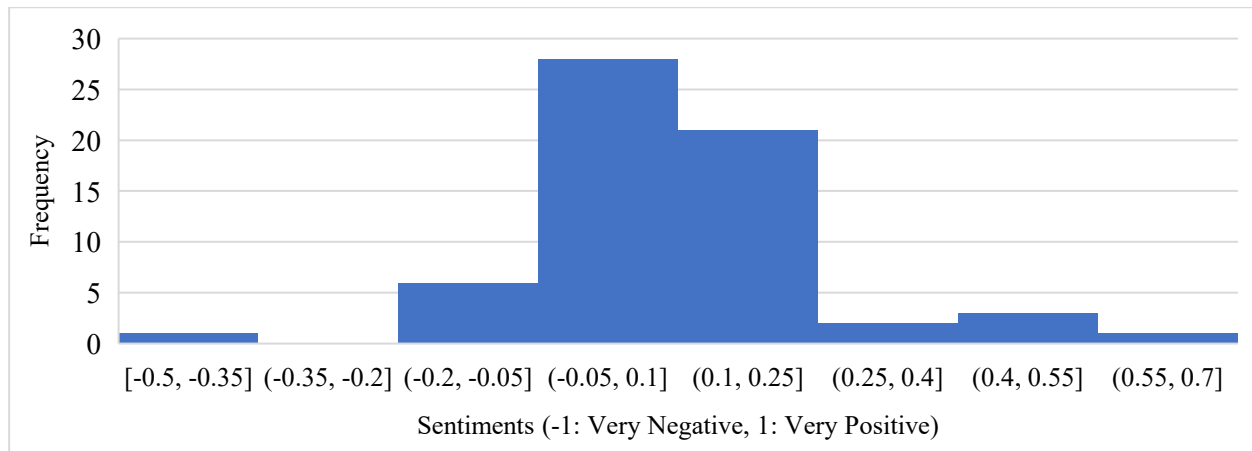


Table 1. Excerpts from the transcript of Macy's Inc.'s Q1 Earnings Call on May 16th, 2007.

Speaker Name	Transcript	Sentiment
Karen Hoguet (CFO)	Thank you. Good morning and welcome to Federated's call scheduled to discuss our first quarter earnings. I am Karen Hoguet, CFO of the company. Any transcription or other reproduction of the statements made in this call without our consent is prohibited. [...] This was a disappointing quarter, due to the weaker than expected sales. However, we were pleased that our earnings per share were within our guidance, in spite of the lower sales. [...] However, in April, the weakness was more widespread and included apparel areas in both the former May as well as the legacy Macy doors. It is hard to say how much of the April weakness in apparel was due to weather, but clearly it was a factor. [...] For the quarter as a whole, sales were \$5.9 billion versus our expected \$6 billion to \$6.1 billion. [...] We remain confident that our strategies are right and our execution is on track. [...] The average diluted share count in the quarter was 476 million shares. EPS, excluding the May-related integration costs on a diluted basis was \$0.16. This compares to \$0.01 per share a year ago on the same basis, and our guidance of \$0.15 to \$0.20 a share. Including the May-related integration costs, EPS from the continuing operations in the first quarter was \$0.11 per share versus a loss of \$0.13 per share a year ago. [...] So that's the summary of the highlights of our first quarter. As I started by saying, we were disappointed in our sales, particularly in the month of April. And given the sales performance, we were very pleased to have achieved earnings within our expected range of \$0.15 to \$0.20. Don't lose sight of the fact that this is only the first quarter, which, as you know, is the smallest quarter of the year from an earnings perspective. As we look forward, we are encouraged about our sales trends. First, with the warmer weather, trends have improved. Second, we are taking action. We are going to redirect more of our marketing to public media, which should help drive traffic, particularly to the former May doors. Three, the comparisons in the former May doors should get somewhat easier as we move through the second quarter. [...] Our research is showing that customers are both understanding and, more importantly, liking Macy's more and more. Our store associates in the converted doors are getting more comfortable with how we operate Macy's stores. [...]	0.1236
[...]	[...]	
Operator	Your next question comes from Dana Cohen - Bank of America Securities.	0.0000
Dana Cohen	First, on the second quarter, the guidance assumes no spread between comp and total. Why should that be, with the new stores coming on?	0.0966
Karen Hoguet	That's not true. I think it's rounding, Dana.	-0.1750
Dana Cohen	Just in terms of just going back on this SG&A, given the fourth quarter performance, you had the issue with the credit card in the fourth quarter. It would seem to me it has to be the other issues which are the delta coming into Q1. Is that a fair way to look at it?	0.1150
Karen Hoguet	I'm not sure I understand.	-0.2500
Dana Cohen	Well, if you sold the May card in the second half of last year, it would have hit you in Q3, it would have hit you in Q4, so that's not different.	-0.0417
Karen Hoguet	That's not an issue in the back half of the year. That's only an issue in the first half of the year. In the back half of the year, we had a spectacular	0.0058

	fourth quarter SG&A, and it's going to be hard to beat it.	
Dana Cohen	But what I'm saying is in Q4, your SG&A dollars were down \$275 million despite the May credit card issue. So the rate of change between Q4 2006 to Q1 2007 can't be the credit card; that's the same issue. It has to be incremental stores and all the other things you talked about. So, as we think now going into Q2, that has to be the same, plus it sounds like you are going to spend more on marketing.	0.0439
Karen Hoguet	I'm not following you with the fourth quarter to the first quarter; I'm not quite sure what you're saying. But factually, you're correct, the SG&A in the fourth quarter would have been negatively impacted by the credit sale, so that the performance was even stronger than what you might have thought, had you forgotten that.	0.0750
Dana Cohen	Then as we go Q1 to Q2, you don't have the expenses for the six new stores. But on the other hand, it sounds like you're going to be spending more on marketing.	0.1705
Karen Hoguet	At this point, I don't know if it's going to be incrementally more or covered elsewhere. That's potentially the case, but it's not huge dollars.	0.1000
Dana Cohen	Just help us think conceptually about what this new marketing means. It sounds like you want to drive sales, but on the other hand, is this going to be more promotional types of events than what you would have done with the credit cards? I just want to understand just conceptually how you're thinking this through.	0.1705
Karen Hoguet	Some events that might not have been with advertising on television will now have television. In other cases, it was going to be a proprietary cardholder event, which will now be public. Those would be the kinds of changes that would happen.	-0.0625
Dana Cohen	So does that mean that it's a more expensive type of event to the P&L?	-0.1042
Karen Hoguet	It depends on the sales. It depends on the incremental plus sales you generate.	0.0000
Dana Cohen	I'm talking on a rate basis. It sounds like it's probably a lower margin.	0.0000
Karen Hoguet	No, not necessarily. Again, it depends on how much incremental business you drive. Advertising more than covers itself; it's a question of to what degree. So you can't judge that until after the fact.	0.2333
Dana Cohen	You are not assuming in Q2 that gross margin is going to be down?	-0.0778
Karen Hoguet	I'm not assuming it's going to be up. We'll see as we get through the quarter.	0.0000
[...]	[...]	
Total sentiment		0.1140

Table 2: Descriptive Statistics

Variables	N	Mean	Median	Min	Max
SEC 8K					
Loughran-McDonald (negative)	5,007	1.3667	.0129	0	.0457
Loughran-McDonald (positive)	5,007	0.9299	0.8705	0	3.7500
Loughran-McDonald (uncertainty)	5,007	1.3228	1.2030	0	5.2632
Loughran-McDonald (litigious)	5,007	0.9486	0.7487	0	9.4308
Conference Calls					
Aggressiveness	3,941	2.215	2	1	5.25
Evasiveness	3,941	3.0831	3	0	8
Optimism	3,941	6.8657	7	0	9
fsizepresent	3,940	3.5009	3.511	1.7584	4.1396
opengunning	3,909	10.1255	10.1175	6.27	15.49
fsizequest	3,883	3.0406	3.0823	1.0792	3.6175
fsizeanswers	3,904	3.4639	3.5104	1	4.0122
qnagunning	3,909	10.1582	10.0776	4.2507	20.5209
fsizeanswers	3,904	3.4639	3.5104	1	4.0122
qnagunning	3,909	10.1582	10.0776	4.2507	20.5209
Sentiment (Bag of Words)	3,967	0.122	0.1214	-0.0013	0.2263
Control Variables					
Beta	6,994	1.1625	1.0995	-1.9875	4.6831
Accruals	6,994	-.0537	-.0456	-1.7527	1.3335
Big Four	6,994	.7948	1	0	1
Loss	6,994	.223	0	0	1
OTC	6,994	.0838	0	0	1
Selling, Gen & Admin expenses	6,994	.2477	.2143	-.157	.9925
Firm Size	6,994	3.2603	3.1755	.7312	7.8377
Leverage	6,994	.5084	.5219	.0201	.9995
Asset Turnover	6,994	1.0343	.8712	.0084	8.407
Free Cash Flows	6,913	.041	.0448	-.5655	.863

Table 3: Cumulative Average Abnormal Returns Press Releases versus All Channels

This Table shows the results of the cumulative average abnormal returns of press releases (only) and all channels using Fama-French three factor model.

Fama-French	Press Releases	All Channels	Differences in Means
CAAR [-10,+10]	-8.016	-6.011	-2.005***

Note: *** p<.01, ** p<.05, * p<.1.

Table 4: The Impact of Disclosure Channels on Cumulative Abnormal Returns

Variables	(1)	(2)	(3)	(4)	(5)
Press Release only	-1.9378*** (0.5938)	-	-	-	-
Press Release and Conference Call	-	-0.0939 (0.6522)	-	-	-
SEC 8-K only	-	-	1.4631*** (0.4751)	-	-
SEC 8-K and Conference Call	-	-	-	0.7931 (0.7063)	-
All (press, 8-k, conference call)	-	-	-	-	0.9135** (0.4361)
Firm Size	2.0856*** (0.2411)	2.0400*** (0.2405)	2.1470*** (0.2455)	2.0362*** (0.2401)	2.1101*** (0.2461)
Leverage	-1.5574 (1.1058)	-1.0940 (1.0979)	-1.6669 (1.1186)	-1.1497 (1.0981)	-1.3771 (1.1092)
Return on Assets	0.0271 (0.0656)	0.0236 (0.0658)	0.0248 (0.0656)	0.0252 (0.0658)	0.0224 (0.0656)
Beta	0.1811 (0.4212)	0.1878 (0.4213)	0.1538 (0.4210)	0.1836 (0.4214)	0.1741 (0.4210)
Market-to-Book ratio	0.0903 (0.1433)	0.0969 (0.1403)	0.0893 (0.1425)	0.0969 (0.1406)	0.0928 (0.1414)
Accruals	-10.9307*** (3.7374)	-10.6703*** (3.7461)	-10.9168*** (3.7407)	-10.7729*** (3.7504)	-10.7044*** (3.7368)
Selling, General & Adm exp	-1.4396 (1.6971)	-1.2385 (1.6928)	-1.6452 (1.6952)	-1.2728 (1.6946)	-1.4345 (1.6946)
Free Cash Flows	4.7143 (4.4304)	5.0136 (4.4416)	4.7892 (4.4198)	5.0277 (4.4460)	4.8514 (4.4335)
Asset Turnover	-1.2057*** (0.3197)	-1.2006*** (0.3203)	-1.2631*** (0.3205)	-1.2055*** (0.3196)	-1.2304*** (0.3211)
Losses	-1.5454* (0.8024)	-1.5420* (0.8030)	-1.5200* (0.8022)	-1.5387* (0.8037)	-1.5331* (0.8023)
Big Four	1.4941** (0.6229)	1.4998** (0.6238)	1.4041** (0.6245)	1.5134** (0.6236)	1.4302** (0.6255)
Over-the-counter	-4.3211*** (1.0290)	-4.4977*** (1.0249)	-4.2764*** (1.0328)	-4.4673*** (1.0229)	-4.4019*** (1.0305)
Observations	6,913	6,913	6,913	6,913	6,913
Adj R ²	0.0355	0.0341	0.0355	0.0342	0.0347
F-stat	16.9076***	16.2286***	16.8124***	16.3423***	16.4577***

*Robust standard errors are in parentheses *** $p < .01$, ** $p < .05$, * $p < .1$; Constant estimated but not reported.*

Table 5: The Impact of Sentiment in 8-Ks on Cumulative Abnormal Returns

Variables	(1)	(2)	(3)	(4)	(5)
Loughran-McDonald (negative)	-0.5067 (0.3999)	-	-	-	-0.3879 (0.4107)
Loughran-McDonald (positive)	-	3.4837 (55.8263)	-	-	-1.6984 (56.9638)
Loughran-McDonald (uncertainty)	-	-	-1.20.08*** (0.4004)	-	-1.1428*** (0.4113)
Loughran-McDonald (litigious)	-	-	-	0.1299 (0.3448)	0.0684 (0.3567)
SEC 8K file size	2.4154*** (0.3813)	2.3369*** (0.3859)	2.1395*** (0.3808)	2.3526*** (0.3816)	2.2139*** (0.3969)
Contra Variables	YES	YES	YES	YES	YES
Observations	4,972	4,972	4,972	4,972	4,972
Adj R ²	0.0471	0.0468	0.0484	0.0468	0.0480
F-stat	14.4502***	14.3847***	15.1083***	14.3507***	12.5525***

*Robust standard errors are in parentheses *** $p < .01$, ** $p < .05$, * $p < .1$; Constant estimated but not reported.*

Table 6: The Impact of Tone in Conference Calls on Cumulative Abnormal Returns

Variables	(1)	(2)	(3)	(4)	(5)
Sentiment (Bag-of-Words)	9.6626 (9.2166)	-	-	-	-
Aggressiveness	-	-4.3839*** (0.6701)	-	-	-1.9104*** (0.7147)
Evasiveness	-	-	-3.9828*** (0.4635)	-	-2.1520*** (0.5680)
Optimism	-	-	-	2.6627*** (0.2533)	1.7470*** (0.3034)
Control Variables	YES	YES	YES	YES	YES
Observations	3,950	3,924	3,924	3,924	3,924
Adj R ²	0.0239	0.0358	0.0507	0.0528	0.0621
F-stat	5.8429***	9.2812***	11.0650***	13.9942***	13.8946***

*Robust standard errors are in parentheses *** $p < .01$, ** $p < .05$, * $p < .1$; Constant estimated but not reported.*

Table 7: The Impact of Tone in Conference Calls on Cumulative Abnormal Returns

Variables	(1)	(2)	(3)	(4)
Aggressiveness	-4.4761*** (0.6789)	-	-	-1.8209** (0.7323)
Evasiveness	-	-4.2251*** (0.4834)	-	-2.2713*** (0.6143)
Optimism	-	-	2.8138*** (0.2573)	1.8167*** (0.3176)
fsizespresenter	1.0757 (1.6601)	-0.2820 (1.6946)	0.3155 (1.6244)	-0.1787 (1.6636)
Opening Gunning	-0.6692*** (0.2342)	-0.6546*** (0.2345)	-0.9255*** (0.2315)	-0.7970*** (0.2338)
Questions (file size)	1.4275 (1.7815)	2.2974 (1.7803)	2.6416 (1.8108)	2.9415 (1.8164)
Answers (file size)	-3.7657* (1.9685)	-5.7314*** (1.9551)	-5.5385*** (2.0147)	-5.7344*** (2.0025)
Q&A Gunning	0.1299 (0.1902)	0.1677 (0.1870)	0.1836 (0.1895)	0.1963 (0.1875)
Control Variables	YES	YES	YES	YES
Observations	3,859	3,859	3,859	3,859
Adj R ²	0.0409	0.0576	0.0597	0.0688
F-stat	7.9203***	9.7758***	11.9899***	11.9995***

*Robust standard errors are in parentheses *** $p < .01$, ** $p < .05$, * $p < .1$; Constant estimated but not reported*

Table 8: The Impact of Tone in Conference Calls and SEC Form 8Ks Simultaneously on Cumulative Abnormal Returns

Variables	(1)	(2)	(3)	(4)
Panel A: Conference Call				
Aggressiveness	-4.1902*** (0.7437)	-	-	-1.4115* (0.8227)
Evasiveness	-	-4.1966*** (0.5580)	-	-2.2157*** (0.7170)
Optimism	-	-	2.8948*** (0.2896)	1.9474*** (0.3608)
fsizerepresent	2.0256 (1.8267)	1.2122 (1.8540)	1.5182 (1.7775)	1.2169 (1.8136)
Opening Gunning	-0.8374*** (0.2522)	-0.7896*** (0.2525)	-1.0575*** (0.2498)	-0.9345*** (0.2535)
Questions (file size)	1.2200 (1.9955)	2.1367 (2.0001)	2.5286 (2.0111)	2.8365 (2.0315)
Answers (file size)	-3.9204* (2.2459)	-5.6632** (2.2323)	-5.3155** (2.2611)	-5.5677** (2.2663)
Q&A Gunning	0.0892 (0.2155)	0.1418 (0.2117)	0.1675 (0.2157)	0.1896 (0.2130)
Panel B: SEC form 8-K				
Loughran-McDonald (negative)	0.3587 (0.4767)	0.4014 (0.4758)	0.8695* (0.4817)	0.7692 (0.4778)
Loughran-McDonald (positive)	2.0447*** (0.7688)	1.6453** (0.7605)	1.0802 (0.7633)	1.1911 (0.7618)
Loughran-McDonald (uncertainty)	-0.5856 (0.6550)	-0.4214 (0.6473)	-0.7413 (0.6369)	-0.662 (0.6420)
Loughran-McDonald (litigious)	0.1283 (0.4906)	0.3545 (0.4896)	0.0021 (0.4905)	0.01753 (0.4918)
Control Variables	YES	YES	YES	YES
Observations	3,218	3,218	3,218	3,218
Adj R ²	0.0438	0.0609	0.0648	0.0721
F-stat	6.2797***	7.6461***	9.0752***	8.9744***

*Robust standard errors are in parentheses *** $p < .01$, ** $p < .05$, * $p < .1$; Constant estimated but not reported*

Table 9: Robustness tests

Variables	(1)	(2)
Aggressiveness (mean)	-4.4120*** (0.9925)	-
Evasiveness (mean)	-1.1023*** (0.3987)	-
Optimism (mean)	7.5224*** (1.2934)	-
Aggressiveness (pca)	-	-0.8513*** (0.2453)
Evasiveness (pca)	-	-0.4833** (0.2316)
Optimism (pca)	-	1.1983*** (0.1777)
Control Variables	YES	YES
Observations	3,924	3,924
Adj R ²	0.0486	0.0502
F-stat	10.4234***	11.6673***

*Robust standard errors are in parentheses *** $p < .01$, ** $p < .05$, * $p < .1$; Constant estimated but not reported*

Appendix A: Variable definitions

Aggressiveness	Aggressiveness is measured on a scale from 1 to 10, where 1 denotes a low level of aggressiveness and 10 reflects a highly aggressive tone expressed by management during the conference call.
Evasiveness	Evasiveness is measured on a scale from 1 to 10, where 1 denotes a low level of evasiveness and 10 reflects a highly evasive tone expressed by management during the conference call.
Optimism	Optimism is measured on a scale from 1 to 10, where 1 denotes a low level of optimism and 10 reflects a highly optimistic tone expressed by management during the conference call.
fsizepresent	Fsizepresent measures the length of the presenter's opening statement in the conference call transcript, calculated as the logarithm of the total number of words in that section.
Opening Gunning	Opening Gunning measures the readability of the opening remarks in the conference call transcript, calculated using the Gunning–Fog readability index.
Questions (file size)	Questions (file size) measures the length of the questions in the conference call transcript, calculated as the logarithm of the total number of words in the questions section.
Answers (file size)	Answers (file size) measures the length of the answers in the conference call transcript, calculated as the logarithm of the total number of words in the answers section.
Q&A Gunning	Q&A Gunning measures the readability of questions and answers in conference call transcripts using the Gunning–Fog Index.
Loughran-McDonald (negative)	The percentage of negative words contained in the SEC 8-K disclosure, computed using the Loughran–McDonald financial sentiment dictionary.
Loughran-McDonald (positive)	The percentage of positive words contained in the SEC 8-K disclosure, computed using the Loughran–McDonald financial sentiment dictionary.
Loughran-McDonald (uncertainty)	The percentage of words expressing uncertainty in the SEC 8-K disclosure, computed using the Loughran–McDonald financial sentiment dictionary.
Loughran-McDonald (litigious)	The percentage of words associated with litigation in the SEC 8-K disclosure, computed using the Loughran–McDonald financial sentiment dictionary.
Sentiment (Bag-of-Words)	Sentiment represents the linguistic tone of the entire conference call transcript, computed using the VADER bag-of-words sentiment analysis method. The score is derived from the relative frequency of positive and negative words in the text, providing an indicator of management's optimistic or pessimistic tone.
Firm Size	Firm Size is measured as the logarithm of total revenues.
Leverage	Leverage is defined as the ratio of total liabilities to total assets.
Return on Assets	Return on Assets (ROA) is defined as EBIT divided by total assets.
Beta	Beta represents systematic (market) risk and is estimated as the slope of a 52-week regression line relating the stock's weekly percentage price changes to those of its benchmark index.

Market-to-Book ratio	Market-to-Book ratio is defined as the ratio of market capitalization to total assets.
Accruals	Accruals are defined as net income minus cash flow from operations, divided by total assets.
Selling, General & Adm exp	Selling, General, and Administrative (SG&A) Expenses are defined as total SG&A expenses divided by total revenues.
Free Cash Flows	Free Cash Flow is calculated as after-tax EBIT less after-tax interest expense, plus total depreciation and amortization, plus (or minus) sales or purchases of intangible assets, minus capital expenditures, and adjusted for changes in net working capital.
Asset Turnover	Asset Turnover is defined as total revenues divided by total assets and represents the firm's operational efficiency.
Losses	Losses is a dummy variable equal to 1 if the firm reports negative net income, and 0 otherwise.
Big Four	Big Four is a dummy variable that equals one if the firm is audited by one of the Big Four accounting firms, and zero otherwise.
Over-the-counter	Over-the-Counter is a dummy variable that equals one if the company's stock is traded on an Over-the-Counter (OTC) market rather than on a major exchange such as the New York Stock Exchange or Nasdaq, and zero otherwise.
Press Release only	Press Release Only is a dummy variable that equals one if the firm issues only a press release regarding the earnings downgrade, and zero otherwise.
Press Release and Conference Call	Press Release and Conference Call is a dummy variable equal to 1 if the company issues a press release and holds a conference call, and 0 otherwise.
SEC 8-K only	SEC 8-K Only is a dummy variable equal to 1 if the company files an SEC Form 8-K only, and 0 otherwise.
SEC 8-K and Conference Call	SEC 8-K and Conference Call is a dummy variable equal to 1 if the company files an SEC Form 8-K and holds a conference call, and 0 otherwise.
All (press, 8-k, conference call)	All (Press, 8-K, Conference Call) is a dummy variable equal to 1 if the company issues a press release, files an SEC Form 8-K, and holds a conference call, and 0 otherwise.