

NBER WORKING PAPER SERIES

STRAIGHT TALKERS AND VAGUE TALKERS:  
THE EFFECTS OF MANAGERIAL STYLE IN EARNINGS CONFERENCE CALLS

Michał Dzielinski  
Alexander Wagner  
Richard J. Zeckhauser

Working Paper 23425  
<http://www.nber.org/papers/w23425>

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
May 2017

We thank Karthik Balakrishnan, Snehal Banerjee, Francois Brochet, Joey Engelberg, Thomas Hellmann, Samuli Knüpfer, Tim Loughran, Marina Niessner, Chris Parsons, Marta Serra-Garcia, Joel Sobel, David Solomon, Jared Stanfield, and Christian Wilk and seminar participants at Aarhus University, Copenhagen Business School, Stockholm School of Economics, Stockholm University, UC San Diego, the University of Hamburg, and the University of Nottingham as well as conference participants at the 2017 AFA Meetings, the 2016 EFA Meetings, the 2016 EFMA Meetings, the 2017 European Winter Finance Summit, the 2016 FMA Meetings, the 2016 FMA Asia-Pacific Meetings, the 2016 SFI Gerzensee Research Days, the 2016 SFS Cavalcade, the Textual Analysis in Economics and Finance workshop, and the 2016 Young Scholars Nordic Finance Workshop for valuable comments. We thank the Swiss Finance Institute and the NCCR FINRISK and the UZH Research Priority Program Financial Market Regulation for support. We thank Maxim Litvak and Denis Petrov for excellent programming. Ivan Petzev has provided outstanding research assistance. This paper was previously circulated under the title: “In no (un)certain terms: Managerial style in communicating earnings news.” The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

At least one co-author has disclosed a financial relationship of potential relevance for this research. Further information is available online at <http://www.nber.org/papers/w23425.ack>

NBER working papers are circulated for discussion and comment purposes. They have not been peer-reviewed or been subject to the review by the NBER Board of Directors that accompanies official NBER publications.

© 2017 by Michał Dzielinski, Alexander Wagner, and Richard J. Zeckhauser. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Straight Talkers and Vague Talkers: The Effects of Managerial Style in Earnings Conference Calls

Michał Dzielinski, Alexander Wagner, and Richard J. Zeckhauser

NBER Working Paper No. 23425

May 2017

JEL No. G14,G30

**ABSTRACT**

Managers conducting earnings conference calls display distinctive styles in their word choice. Some CEOs and CFOs are straight talkers. Others, by contrast, are vague talkers. Vague talkers routinely use qualifying words indicating uncertainty, such as “approximately”, “probably”, or “maybe”. Analysts and the stock market attend to the style of managerial talk. They find earnings news less informative when managers are vague; they respond less and more slowly as a result. Thus, quantitative information and straightforward contextual information prove to be complements. Vague communications have the potential benefit of tamping down over-optimistic analysts expectations.

Michał Dzielinski  
Stockholm University  
Stockholm Business School  
Kräftriket 7  
106 91 Stockholm  
Sweden  
mdz@sbs.su.se

Richard J. Zeckhauser  
John F. Kennedy School of Government  
Harvard University  
79 John F. Kennedy Street  
Cambridge, MA 02138  
and NBER  
richard\_zeckhauser@harvard.edu

Alexander Wagner  
University of Zurich - Swiss Finance Institute  
Department of Banking and Finance  
Plattenstrasse 14  
CH-8032 Zurich, Switzerland  
and CEPR  
alexander.wagner@bf.uzh.ch

# 1 Introduction

Graham and Dodd (1934), the pioneers of value investing, introduced the idea that investors should pay attention to the hard facts when analyzing the value of a company. The hardest of hard in their analysis was the price/earnings ratio. As has been known for at least half a century, investors indeed attend strongly to earnings announcements (Beaver, 1968). Moreover, CFOs consider earnings to be the most important numbers they communicate externally (Graham, Harvey, and Rajgopal, 2005). Although the disclosure of corporate financials has become fairly standardized and fancy models are often used to process the numbers, many practitioners emphasize that assessment by humans still plays an important role in interpreting earnings news. Survey evidence shows that analysts regard private phone calls with management and the Q&A session of earnings conference calls as particularly important for generating earnings forecasts (Brown, Call, Clement, and Sharp, 2015). Fund managers, interviewed by Barker, Hendry, Roberts, and Sanderson (2012) state that *“building up an understanding of the company”* is one of the main motives for systematic personal interactions with top company executives.

Importantly, different managers employ very different phraseology when communicating with market participants. This paper sheds light on one important aspect of this variation: whether managers are vague or straight-talking when discussing earnings information. We hypothesize that clearer, i.e., less vague, communication from managers should enable analysts and investors to better understand the company. This in turn should enhance the ability of these participants to interpret newly revealed information, such as earnings, and to incorporate it into forecasts and stock prices. Thus, we ask: How, if at all, does the vagueness in managerial communication affect analyst and investor responses to earnings news? Are some managers straight talkers and others vague talkers, and if so, does the market care?

To answer these questions, we employ information available from earnings conference calls of public US companies from 2003 to 2015. Every quarter managers conduct such calls to discuss recent financial results and the outlook for their company. They begin with a prepared presentation. They follow this with a question and answer (Q&A) session with the security analysts attending the call. These calls are routinely led by the company’s top executives. CFOs participate actively alongside the CEOs, as CFOs also play an important role transmitting value-relevant information from companies to markets. In particular,

markets use the information discussed on the conference call to complement and interpret the hard earnings numbers.

We focus on the use of uncertain words such as “approximately”, “probably” or “maybe” (as compiled in the Loughran and McDonald (2011) uncertainty wordlist). Such words introduce vagueness and cloud communication. Hence, the frequency of such words in total words spoken by a manager on a call is our measure of vagueness. For each call, we compute, separately for CEOs and CFOs, the percentage of uncertain words they used in the presentation and the Q&A part of the call. As discussed further below, prior work on disclosure has focused on written communication, highlighting, for example, the important role of readability. Yet very little evidence is available on the use and role of vagueness, uncertain or qualifying statements, in spoken communication.

Our first result is that when managers talk more vaguely on an earnings conference call, the earnings response coefficient (ERC) is smaller, that is, stock prices react less to an earnings surprise (a deviation of the earnings from the analyst consensus). Interestingly, vagueness in answers drives this result more than vagueness in presentations. This is robust to controlling for other important determinants of stock price reactions to conference calls, such as linguistic tone, the negativity and vagueness of analyst questions, the use of numbers in the call, length of sentences, and whether a firm provides earnings guidance.

The logical next question is why vagueness dampens the market response. Each of three factors could be at play. Vaguer language may reflect: (1) a manager’s consistent style, (2) persistent firm characteristics related to its communication culture or indeed its business model, or (3) current conditions. We argue that our analysis offers an important new angle on the market’s response to corporate communication, as the conference call setting allows us to separate out company-specific and manager-specific elements of communication. In particular, the presentation part of each call is carefully prepared, often with guidance from the investor relations department, arguably to be consistent with the communication culture of the firm. The Q&A part of the conference call, while also prepared and rehearsed to the extent possible, requires managers to speak comparatively extemporaneously. Indeed, at times, they must respond to questions that they did not anticipate.

We can thus simultaneously observe the same person delivering a fully scripted (presentation) and a necessarily somewhat more improvised (Q&A session) message about the same firm, under the same business conditions. This enables us to powerfully control for both

firm culture and time-varying uncertainty in the company’s operations. Thus, comparing presentations and answers enables us to extract the personal communication styles of the CEOs and CFOs. We note that this method could still yield insights even if answers were not completely ad hoc. It would only require that company-related factors influence presentations more than answers. We can also benchmark linguistic patterns in the conference call to the earnings press releases (EPR), which are not communicated by specific people and hence are even more likely to reflect firm characteristics.

To illustrate the adequacy of our approach, we compare the language of the EPR, of the conference call presentation, and the answers on the call, respectively, both before and after a change in management. Two findings are noteworthy: First, the language of answers changes much more strongly when the specific person speaking changes than does the language of the presentation, while the language in the earnings press release is hardly affected. Second, tracking the same manager switching from one firm to another, we find the language of answers is much more consistent between the manager’s old and new firm than is the language of the presentation or the EPR. Hence, as long as the person delivering information does not change, linguistic patterns regarding the use of uncertain words remain quite stable in the answers, even when that person switches firms. These results clearly point to the existence of personal *style*.

We next decompose the vagueness of each manager when answering analyst questions explicitly into several parts. Specifically, we regress our measure of vagueness on (1) the manager’s fixed effect (which thus represents her vagueness style), (2) her own vagueness in the presentation (to control unobservable firm-level factors that influence uncertainty at the time of the call), and (3) other features of manager and analyst speech as well as firm characteristics. Finally, (4) there remains an unexplained residual vagueness in manager answers during each call. Crucially, we find that managers differ substantially in their style of vagueness.

Since building up an understanding of a company and its managers is a process that requires repeated interactions, we expect the persistent vagueness style to matter most. And that is what we find. By contrast, residual vagueness explains little of the ERC. Interestingly, the effect of the CEO vagueness style is substantially stronger among S&P500 companies than in smaller firms. When CEO vagueness is one standard deviation above the mean, the ERC in an S&P500 firm is lower by 13%, a sizable difference. The firm size

is even more relevant when it comes to CFOs: CFO vagueness only significantly affects ERCs of S&P500 companies. These results hold also in the sample of firms that experience managerial turnover (which allows us to control for firm fixed effects). For CFOs, we also have enough cases of “movers”, that is, managers who switch from being CFO at one firm to being CFO at another firm. Even when restricting attention to this sample of movers, we find that CFO vagueness dampens the earnings response.

One explanation of these results is that vague managers convey less than the full amount of information but a conceivable alternative explanation is that in a second-best fashion vague style in fact corrects for the otherwise prevalent overconfidence of managers. If that were true, stock returns would revert after the initial stronger reaction to straight-talking CEOs’ earnings surprises. As a third alternative, investors could underreact to vague information. If that were true, there would be a stronger post-call drift for vaguer CEOs. In fact, post-call drift differs little between straight talker and vague talker CEOs.

These results show that earnings (“hard information”) and straightforward managerial explanations surrounding this information (“soft information”) are complements, not substitutes. Specifically, if earnings and contextual language were substitutes, investors would pay more, not less, attention to the quantitative information (such as earnings surprises) when faced with vague managers. We find the opposite: vagueness in the “soft” explanatory component leads to greater discounting of the earnings surprise itself.

Interestingly, in companies with a larger share of transient investors – investors seeking to exploit any edge of information they can obtain – manager vagueness does not dampen the initial response, and there is less drift. In sum, earnings communicated by vaguer managers are indeed less informative, but skilled investors can pierce through the veil of vagueness.

Next, we explore further consequences of vagueness. Three sets of results emerge. First, the market overall reacts less to earnings announcements of companies run by vague managers. This is illustrated, for example, by trading volume during the two days surrounding conference calls. It increases by 55% for calls hosted by highly vague CEOs (those in the top quintile of the vagueness distribution), compared to an average increase of 64% and 72% for particularly straight-talking CEOs (those in the bottom quintile of vagueness).

Second, analysts take longer to adjust their estimates to earnings news when faced with vague managers. Fewer of them react within three days of the call. Furthermore, analyst uncertainty, as indicated by the revision frequency of their forecasts after the call until the

next call, tends to be magnified by managerial vagueness.

In sum, managerial vagueness substantially affects how market participants respond to earnings conference calls, in ways that make the response less efficient. However, our final result highlights potential benefits of vagueness: firms with vaguer CEOs are more likely to exceed than undershoot analyst expectations, that is, vague communication appears to help steer analysts away from making overly optimistic predictions for future earnings.

Our study lies at the intersection of three literatures. First, a substantial body of research discusses how the presentation of disclosures affects firm value.<sup>1</sup> Several papers have studied the ease with which *written text* in corporate disclosure documents can be processed. For example, Loughran and McDonald (2014) show that firms whose 10-K documents are less easily readable experience higher stock return volatility, greater analyst dispersion, and larger absolute earnings surprises, and Hwang and Kim (2016) show that closed-end funds whose reports are less readable suffer higher discounts.<sup>2</sup> The use of uncertain words in written communication was studied by Loughran and McDonald (2013), who show that a high fraction of uncertain words (as well as negative words and weak modal words) in IPO prospectuses produce higher first-day IPO returns and larger volatility<sup>3</sup>, and Ertugrul, Lei, Qiu, and Wan (2016), who show that firms with larger 10-K file sizes and a higher proportion of uncertain and weak modal words in 10-Ks have stricter loan contract terms and greater future stock price crash risk. Most closely related to our work, Demers and Vega (2011) find that greater linguistic certainty in written earnings announcements leads to a stronger immediate response to earnings news and less drift.

Our work differs on three important dimensions from all these studies: 1. We focus on spoken words, not on written reports. 2. We study how the vagueness of individual managers matters, rather than overall company documents. 3. We examine to what extent any effects found are due to consistent style vs. time-varying residual vagueness. In doing so, we highlight the result that the relatively more improvised answers section of the conference

---

<sup>1</sup>See, e.g., Fields, Lys, and Vincent (2001), Healy and Palepu (2001), Botosan (2006), Beyer, Cohen, Lys, and Walther (2010) for reviews.

<sup>2</sup>Other examples linking opaqueness in language to investor reactions and/or firm outcomes include Li (2008), Miller (2010), Lehavy, Li, and Merkeley (2011), Rennekamp (2012), and You and Zhang (2009); see Loughran and McDonald (2016) for a survey. In addition to the choice of language, the use of investor relations firms can influence investors' access to and processing of information (Solomon, 2012).

<sup>3</sup>While Loughran and McDonald (2013, p. 308) are careful to note that their findings from IPOs do not necessarily mean that uncertain words are important also for large, established firms, we find that, in fact, managerial vagueness has particularly pronounced effects at large companies.

call, rather than the prepared remarks, helps to explain the market response. Because we can control for the vagueness of the presentation, while assessing the impact of the manager’s answers, we are simultaneously controlling for other, potentially unobserved and hard-(or impossible)-to-measure factors that are correlated with the firm’s reporting style on a call. This allows us to conclude that personal vagueness style of managers is the main driver.

Second, we add to the literature on earnings conference calls. The vast majority of existing papers focus on the linguistic tone of managers’ and analysts’ language on these calls (see Henry and Leone (2016) and Loughran and McDonald (2016) for surveys). We use tone as a control variable. A number of papers have analyzed managerial tactics on conference calls. For example, Mayew (2008) and Cohen, Lou, and Malloy (2013) demonstrate that managers strategically call on analysts to prevent bad news from being revealed on conference calls. Hollander, Pronk, and Roelofsen (2010) study managerial attempts to dodge questions. Larcker and Zakolyukina (2012) find that the presence of words related to deception predicts future accounting problems. Zhou (2014) documents managers’ attempts to shift blame to external factors. Allee and DeAngelis (2015) find that managers structure their linguistic tone as part of their overall narrative on the call. Lee (2016) measures the stylistic similarity between the presentation and answers, based on the use of so-called function words, to detect managers’ use of scripted language in the latter part. He finds that markets react negatively to scripted answers. Bushee, Gow, and Taylor (2016) show that linguistic complexity (as measured by the Gunning fog index) diminishes information uncertainty when it is driven by the need to convey complex information, but enhances it when it indicates possible obfuscatory tactics of managers.

To our knowledge, the use of uncertain words – albeit a simple and intuitive measure of vague communication – has not been explored systematically in the context of conference calls.<sup>4</sup> Interestingly, we find that the fixed component of vagueness, rather than the time-varying, potentially strategic component, most strongly affects market reactions. This is consistent with the observation that managers, analysts, and investors also interact in many other settings, such as private meetings, private phone calls, broker-hosted investor

---

<sup>4</sup>In their analysis of the predictive power of managerial tone Druz, Petzev, Wagner, and Zeckhauser (2016) control for the frequency of uncertain words and other evasive tactics (such as the use of “atypical” tenses), but they do not explore the potential of vagueness to slow down the incorporation of news in prices. Moreover, they control for firm/CEO fixed effects and thus focus on the time-varying components of tone, uncertainty, and other speech variables, rather than the stable communication style of managers.



conferences, and analyst/investor-days (Green, Jame, Markov, and Subasi, 2014; Soltes, 2014; Solomon and Soltes, 2015; Kirk and Markov, 2017).

Our study explicitly contrasts the (relatively) scripted presentation and the (relatively) extemporaneous answers part of the call to measure the same linguistic feature, vague talk. Other papers also focus on answers, because less scripted language is likely to be used there. In addition to the managerial tactics papers mentioned above, for example, Green, Jame, and Lock (2015) use a variety of speech markers to infer managers' extraversion from their answers to analyst questions and subsequently show that extraversion improves career outcomes. Gow, Kaplan, Larcker, and Zakolyukina (2016) use a large number of linguistic features from answers of managers on conference calls to construct proxies for personality traits, and they then show that these personality traits correlate with firm policy choices. Brochet, Naranjo, Miller, and Yu (2017) study international conference calls, documenting, among other things, that managers from a more individualistic culture use a more optimistic tone in answers but not in presentations, and Brochet, Naranjo, and Yu (2016) study language barriers. Our study contributes with a formal decomposition of vagueness in answers into a systematic ("style") and a time-varying residual component. We show that the former matters most for earnings responses.

Finally, our study adds to the literature on manager style. Existing studies evidence the role of style by the statistical significance of manager fixed effects in variables related to firm policy. Such analyses encounter difficulties separating manager style from the effects of firm organization or culture, since both the manager and the firm are observed simultaneously. The identification strategy spearheaded by Bertrand and Schoar (2003) relies on managers who transition from one firm to another during the sample period. Using this strategy, researchers have studied the role of manager style for accounting practices (Ge, Matsumoto, and Zhang, 2011), tax avoidance (Dyreng, Hanlon, and Maydew, 2010) as well as the provision, intensity and accuracy of earnings guidance (Bamber, Jiang, and Wang, 2010; Brochet, Faurel, and McVay, 2011; Yang, 2012). In a recent study, most closely related to this work, Davis, Ge, Matsumoto, and Zhang (2015) find a significant manager-specific fixed effect in the tone of earnings conference calls. However, this moving-managers approach to the style issue has been criticized by Fee, Hadlock, and Pierce (2013), who argue that endogenous reasons are likely to simultaneously produce both a manager transition and a shift in company policies. Our analysis shows that dimensions of style reflected in speech patterns

can be identified by contrasting relatively unscripted answers and formal presentations on earnings conference calls. In contrast to the usual approach of estimating manager fixed effects directly in corporate outcomes, we can test directional predictions about the economic effects of vagueness, and we can draw conclusions about the quantitative importance of style. We discuss this contribution in more detail in Section 4.

The paper proceeds as follows. Section 2 discusses the conference call data and other measure of vagueness. Section 3 presents evidence on the economic importance of vagueness for the earnings response. Section 4 assesses how to parse the roles of firm characteristics and managerial style in explaining word choice in presentation and Q&A parts of the call. Section 5 further explores the relation of managerial vagueness style and analyst and market responses. Section 6 summarizes the results for CFOs. Section 7 concludes.

## 2 Measuring vagueness and other speech characteristics on conference calls

Table 1 presents summary statistics of our data. Table A.1 in the Appendix contains an overview of variable definitions. This section focuses on our key explanatory variable, vagueness, and other speech characteristics we extract from earnings conference calls.

### 2.1 Conference call transcripts

Like the vast majority of the literature, we rely on transcripts of quarterly earnings conference calls for publicly listed US companies from 2003 through 2015, which we obtain from Thomson Reuters Street Events.<sup>5</sup> We begin with the full sample, which consists of 122,160 calls for 5,095 distinct firms. For the average firm, we have about 24 conference calls, corresponding to an observation period of 6 years.

The transcript of each call contains, at the top, a list of conference call participants, divided into corporate participants and analysts. We use a Python script to capture the words spoken by each company participant, and thus create our textual variables of interest (see below) for both the overall call and for each manager separately. We first extract names

---

<sup>5</sup>Mayew and Venkatachalam (2012) demonstrate that in addition vocal cues, indicating managers' affective states during the call, provide useful information about future firm performance.

and the titles of the call participants. We then search in the “title” field for keywords such as “CEO”, “Chief Executive”, “CFO”, “Chief Financ” to identify the two respective executives. We complement and verify our identification of job titles by matching executives’ names to Execucomp. Based on this procedure, we find that the CEO and CFO are present in more than 93% and 92% of the calls respectively, confirming that it is usual procedure to have the two top executives involved. We identify 9,859 CEOs and 11,098 CFOs.

[Table 1 about here]

The estimation of manager vagueness style, performed later in this analysis separately for CEOs and CFOs, requires a certain minimum number of observations for each manager. Hence, for the CEO sample we only retain transcripts of conference calls featuring CEOs who over their combined tenure (possibly at more than one firm) have participated in at least 5 such calls. This eliminates 8,664 calls in which a CEO was at all present and 3,802 distinct CEOs, most of whom participated in at most 2 calls. This leaves 6,057 CEOs, for whom we can estimate style. As Table 1 shows, the CEO sample is similar to the full sample, in particular with regard to firm characteristics and outcomes.<sup>6</sup>

Applying the same filter of at least 5 calls to CFOs removes 10,396 calls (of those in which the CFO was at all present) for 4,727 distinct managers. Here too, the restricted sample with 6,371 CFOs appears much the same as the full sample with respect to all relevant variables. This gives us confidence that the technical restrictions we impose in order to more reliably estimate manager style are not likely to affect our results.

The average call consists of almost 6,000 words, roughly equally split between the presentation and answers. This provides ample material for the linguistic analysis of each part. The average CEO speaks 1,363 words during the presentation and 1,886 words answering analyst questions.<sup>7</sup> The CFOs speak slightly less in the presentation (1,153 words); they are also less involved in answering questions on average (819 words). Relating these numbers to the total length of conference calls reveals that on average CEOs are responsible for 46% of the words in the presentation and 61% in the answers part. The respective shares for the

---

<sup>6</sup>The average number of calls per CEO is, by construction, higher in the CEO sample than in the full sample.

<sup>7</sup>The numbers we quote for CEOs refer to the CEO sample and those for CFOs to the CFO sample. Table 1 also provides those numbers for the full sample. The numbers for our sample and the full sample are similar, except the average number of calls per manager.

CFOs are 39% and 26.5%. Hence, between them the CEO and CFO are responsible for the vast majority of the content in both parts.

## 2.2 Vagueness

Our main variable of interest is manager vagueness on the call. We proxy vagueness by the use of “uncertain” words like “approximately”, “probably”, or “maybe”. The full list, based on Loughran and McDonald (2011), contains 297 such words.<sup>8</sup> A subset of this list are 27 “weak modal” words, and we obtain similar results with this list of “weasel” words.

An important step suggested by Loughran and McDonald (2016) when applying word counts in a new context is to investigate which words occur most frequently, because according to Zipf’s law, they will have an outsized influence on any measure constructed from those counts. In Figure 1 we plot the frequencies of the 25 most popular uncertain words, based on conference call presentations and answers for the overall management team. The obtained list is intuitive and suggests that no “patently misclassified” (Loughran and McDonald, 2016) words are driving the results. Rather, many of the top uncertain words are qualifiers reflecting the probabilities and confidence intervals associated with statements made by managers on conference calls. In this sense, vagueness could entail a loss of information but it could also reflect uncertainty inherent in speaking about future prospects. As we discuss below, we try to disentangle these different interpretations by comparing how vagueness affects short- versus long-run responses to earnings.

[Figure 1 about here]

Loughran and McDonald (2016) find that 1% of the negative words account for about 44% of the negative word count in 10-K/Q-type SEC filings. For uncertain words in conference calls we find a similar ratio. Across all presentation sections, the top 3 of the 297 uncertain words - “approximately”, “believe” and “may” - account for 38% of the uncertain word count. Across all answers, the top 3 words are “probably”, “could” and “believe”: together they account for 35% of the uncertain word count. Overall, the top 25 uncertain words (about 8.4% of 297) make up 80% of the total uncertain word count.

We calculate the percentage of uncertain words in all words spoken by the management

---

<sup>8</sup>We use the August 2014 version from [http://www3.nd.edu/~mcdonald/Word\\_Lists.html](http://www3.nd.edu/~mcdonald/Word_Lists.html)

team<sup>9</sup> (T), CEO or CFO, respectively, separately during the presentation part and when answering questions from analysts:

$$\%Unct_{T/CEO/CFO}Pres = \frac{Uncertain\_words_{T/CEO/CFO}(Pres)}{Total\_words_{T/CEO/CFO}(Pres)} \quad (1)$$

$$\%Unct_{T/CEO/CFO}Answ = \frac{Uncertain\_words_{T/CEO/CFO}(Answ)}{Total\_words_{T/CEO/CFO}(Answ)} \quad (2)$$

The typical conference call contains 0.84% uncertain words in presentations and answers combined (counting CEO, CFO and other management team members). CEOs appear less vague than CFOs: Their presentations typically contain 0.67% uncertain words and the average for answers is 0.80%, whereas for the CFO the respective numbers are 0.86% and 0.88%. Importantly, there is considerable variation in  $\%Unct_{CEO/CFO}Answ$ , as evidenced by the standard deviation, which is high relative to the mean value for both CEOs and CFOs. Such variation is essential to our study, which employs it to distinguish straight from vague talkers. Also important is the fact that the correlation between  $\%UnctPres$  and  $\%UnctAnsw$  is only modestly positive (0.22 for CEOs and 0.07 for CFOs). This suggests that the language of answers is far from a mere reflection of the presentation part.<sup>10</sup>

Figure 2 plots the time series of CEO and CFO vagueness in presentations and answers. Intuitively, vagueness increased in the financial crisis. There is a minor downward trend in vagueness in answers since the crisis. We include year fixed effects in all regressions to control for common time trends. Throughout the sample period, CEOs (but not CFOs) speak more vaguely in answers than in presentations.

[Figure 2 about here]

To provide a complete picture of earnings communication we also collect earnings press releases (EPRs) from the SEC's EDGAR system and, similarly to what we do for the conference calls, measure the frequency of uncertain words contained in them ( $\%UnctEPR$ ). The average EPR contains 1.11% of uncertain words.

---

<sup>9</sup>This includes the CEO, CFO, and other managers present on the call.

<sup>10</sup>In Figure B.1 of the Internet Appendix we provide illustrative examples of the additional insights available from analyzing presentations and answers separately. We elaborate further on this point in Section 4.

## 2.3 Other speech characteristics

Separately, we calculate negativity based on the Loughran and McDonald (2011) list of negative words. We define %*Neg* as the ratio of negative words to total words, separately for CEOs and CFOs and for both presentations and answers.<sup>11</sup> We also calculate %*Neg* for analyst questions and find that it is on average higher (1.23%) than in manager answers (0.76% for the CEO and 0.77% for the CFO). This indicates that manager answers are typically more upbeat than the questions that solicited them, which is consistent with the results in Brockman, Li, and Price (2015).

The uncertainty and negative wordlists overlap to some extent. Specifically, of the 297 uncertain words, 40 are also listed as negative.<sup>12</sup> However, since none of these “overlap” words are used very frequently, they only account for 2.26%, 2.50% and 1.11% of uncertain word *occurrences* in presentations, answers and analyst questions respectively. Such minor mechanical commonality is unlikely to introduce any bias when we control for negativity in our regressions.

We count the frequency of numbers in presentations and answers of management. Numbers include dollar amounts, percentages, etc. (Numbers are recorded in numeric form in the transcripts.) We pay special attention to numbers reported with decimals and to numbers containing commas denoting thousands, to avoid counting them as two numbers. Thus, “60 basis points”, “35.3%”, “\$8 million”, “22,200” are each counted as one number.<sup>13</sup>

%*Numbers* is the number of numbers per 100 words. Overall, for each 100 words spoken, on average 1.9 numbers appear on a conference call. This is broadly in line with what Zhou

---

<sup>11</sup>Loughran and McDonald (2016) caution against the use of positive tone or net tone because positive words too often are used to frame a negative statement. On the other hand, a measure such as  $\frac{\text{negative} - \text{positive}}{\text{negative} + \text{positive}}$ , used, for example, in Price, Doran, Peterson, and Bliss (2012), has the advantage that it adjusts for a manager’s tendency to just use more positive and negative words overall. In the main results, we use the frequency of only negative words, but the results are robust when using a net tone measure. We have also computed versions of the negativity measures altering the word list. For example, as in Allee and DeAngelis (2015), we eliminated the word “question” from the list of negative words (though the frequent use of this word may indicate more intense questioning of management by analysts), and we did not count the (otherwise negative) word “closing” when it is followed by “remark” or “remarks”. The negativity measures are highly correlated and exhibit similar relation to stock market responses.

<sup>12</sup>Some examples are “confusing,” “doubt” and “risky.”

<sup>13</sup>Careful review of a number of transcripts suggests that although our algorithm works well, it is not perfect. For example, a reference to “the Boeing 737 and the A 320” would be counted as two numbers. We believe the imprecision such cases introduce is likely to be small, and any systematic variation in the usage of product numbering would presumably be picked up by industry fixed effects and other company characteristics.

(2016) reports for his sample. Presentations are more number-intensive than answers: 4.3 vs 1.4 for each 100 words, respectively. Intuitively, CFOs use many more numbers: For each 100 words in the presentation, 7 numbers are stated by the average CFO, whereas the CEO highlights 2.8 numbers per 100 words. Both managers state far fewer numbers in the Q&A part, consistent with the idea that in this part both the CEO and the CFO convey important qualitative information.

Moreover, we compute the average sentence length to serve a simple measure of *Complexity*.<sup>14</sup> The average sentence is somewhat longer in presentations than in answers.

### 3 The economic effects of vagueness: Earnings responses

Our over-arching hypothesis is that earnings news communicated by vague managers is harder to interpret in terms of implications for firm value and hence, less informative. In Section 3.2 we first test this hypothesis by looking at the role of overall managerial vagueness on earnings conference calls. Later, in Section 4 we will decompose CEO and CFO vagueness into manager-specific “vagueness style” and residual vagueness.

#### 3.1 Empirical strategy

The key driver of investor reactions to earnings is the difference between the actually announced number and prior expectations, i.e., the earnings surprise. Given the unexpected nature of surprises, it is likely that investors will be particularly sensitive to how the managers explain them. We expect earnings surprises accompanied by vague explanations to be less informative. Difficulties in interpreting earnings information are likely to make investors less willing to act on it. Hence, our first hypothesis states:

**Hypothesis 1:** Vagueness dampens the short-run stock price reaction to earnings, that is, the earnings response coefficient (ERC).

---

<sup>14</sup>Loughran and McDonald (2016) highlight that the parsing of business documents into sentences is error prone. This is a somewhat smaller danger in the context of conference calls, which, for example, do not contain tables. We pay special attention not to count decimal dots as sentence-ending periods. In robustness checks, we also compute the Gunning fog index, and our results are robust to controlling for this index instead. This fog index also uses the average sentence length, but also includes complex words. Such words – words with more than two syllables – appear very frequently in a business context, making the measure hard to interpret. See Loughran and McDonald (2014) for a critique.

Our hypothesis implies that earnings numbers (“hard information”) and managerial explanations (“soft information”) are complements. Testing this hypothesis is important because an alternative story for how vagueness might affect short-run earnings response is also plausible: Suppose that “hard” and “soft” information were in fact substitutes, not complements. Then, in the presence of vague managerial communication, rational investors would pay *more* not less attention to earnings numbers and we would observe greater ERCs.

To test Hypothesis 1, we estimate variations of the following panel regression, which includes Fama-French 48 industry and year fixed effects:

$$CAR01_{i,t} = \alpha_i + \beta_1 \cdot SurpDec_{i,t} + \beta_2 \cdot \%Unct_{i,t} + \beta_3 \cdot \%Unct_{i,t} \cdot SurpDec_{i,t} + \beta_k \cdot Controls_{i,t}^k + FF48_i + Year_t + \epsilon_{i,t} \quad (3)$$

To ease interpretation, we standardize all explanatory variables (except *SurpDec* and *Guidance*) using their full-sample means and standard deviations. The main variables of interest are the interaction terms of vagueness and earnings surprise. Hypothesis 1 predicts  $\beta_3 < 0$ .

The sample for these regressions consists of all calls, in which at least one question was asked by an analyst and for firms with enough accounting information to calculate daily abnormal stock returns following Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW). We apply their methodology to daily returns to compute DGTW characteristic-adjusted stock returns and express such returns in percent.<sup>15</sup> Our dependent variable cumulates returns over day 0 (the call date) and the following trading day. Price and returns data are taken from CRSP.

We consider  $\%Unct$  for either management Team (T) or CEO or CFO. We run separate regressions for CEOs and CFOs to determine whose vagueness, if at all, has a bigger effect.

We employ analyst data from IBES and accounting data from Compustat to measure a range of earnings and firm characteristics. We calculate earnings surprise as a percentage of the share price. It is the difference between actual and consensus forecast earnings, divided

---

<sup>15</sup>From each stock return we subtract the return on a portfolio of all CRSP firms matched on quintiles of market equity, book-to-market, and prior 1-year return (thus producing a total of 125 matching portfolios). Each of these 125 portfolios is reformed each year at the end of June based on the market equity and prior year return (skipping one month) from the end of June of the same year, and book-to-market from the fiscal period end of the preceding year. Book-value of equity is furthermore adjusted using the 48 industry classifications available from Kenneth Frenchs website. The portfolios are value-weighted.



by the share price 5 trading days before the announcement in quarter  $t$ , multiplied by 100. Firms performing above (below) expectations experience a positive (negative) surprise. Subsequently, firms are grouped by earnings surprise decile ( $SurpDec$ ), from 5 to 1 from largest positive to smallest positive surprise, then 0 for zero surprises, and then from -1 (for the smallest negative surprises) through -5 (for the largest negative surprises). This generates equally sized surprise quintiles on either side of zero but, because there are more positive than negative surprises overall, causes the unconditional mean of  $SurpDec$  to be positive (around 0.85). This approach follows Hirshleifer, Lim, and Teoh (2009) and DellaVigna and Pollet (2009) who show that these earnings quantiles exhibit an approximately linear relationship with CAR01. The relationship between the earnings surprise itself and the immediate stock response, by contrast, is monotonic but highly nonlinear (Kothari, 2001).

We control for  $\%UnctAnaly_{i,t}$ ,  $\%NegMGRAnsw_{i,t}$ ,  $\%NegAnaly_{i,t}$ ,  $\%Numbers$ , and  $Complexity$ . This allows us to account for other important information contained in the linguistic features of the call that in turn proxy for differences among companies' (and perhaps managers') communication. Moreover, the main specifications also include a binary indicator for whether the firm provides *Guidance* for a given quarter (either as a point estimate or as a range). Finally, in the full specification, all communication variables are interacted with the earnings surprise.

The matrix  $Controls^k$  contains further control variables. The stock return ( $StockRet$ ) in quarter  $t$  is the firm's share-price appreciation in the elapsed quarter, that is, the difference between the share price 5 days before the earnings announcement for quarter  $t$  and the share price 5 days after the earnings announcement for quarter  $t - 1$ , expressed as the percentage of the stock price 5 days after the earnings announcement for quarter  $t - 1$ . Market return ( $MarketRet$ ) is the percent value-weighted market return for the period starting 5 days after an earnings announcement for the quarter  $t - 1$  and ending 5 days prior to the earnings announcement for the quarter  $t$ . Daily volatility ( $DailyVola$ ) of each stock is the standard deviation of daily returns over the previous quarter. *EPS growth* is the fraction by which earnings in a quarter exceed earnings in the same quarter in the prior year. Finally, we include the natural logarithm of total assets  $ln(Assets)$  and *Tobin's Q*, which is the ratio of the market value of assets to their book value.

In all regressions, to account for the interdependence between observations, we cluster standard errors by firm or by manager.

## 3.2 Results

Table 2 presents the results. Column (1) shows that higher frequency of uncertain words in the management’s communication on the conference call overall dampens the earnings response, as hypothesized. Column (2) highlights that vagueness in answers in particular reduces the earnings response.

[Table 2 about here]

It is potentially important to control for the negativity and vagueness of analysts’ questions, as well as for features of the presentation. For example, it might be that analysts follow up particularly clear presentations with more speculative, harder-to-answer questions. We would expect that such questions themselves contain more uncertain words, which then may elicit greater vagueness in managers’ answers. Similarly, managers may tend to answer more negative questions more vaguely. Column (2) controls for these factors. We do not find any significant effect for  $\%UnctAnaly$  but negativity, both in analysts’ questions and managers’ presentations and answers, significantly reduces short-term CARs.

Columns (3) and (4) show that the dampening effect of vagueness on the earnings response is robust to including a broader set of speech characteristics, as well as their interactions with the earnings surprise. Longer presentations, but also longer Q&A sequences signal difficulties and are associated with negative short-term responses, though a long Q&A part is beneficial when there is a positive earnings surprise, as seen in the significantly positive interaction of  $WordsAnsw$  and the earnings surprise. More numbers in the presentation are associated with a higher immediate stock price reaction (and somewhat more so when paired with a positive earnings surprise), while more numbers in the Q&A part have a negative effect (and this effect is especially pronounced when there is a positive earnings surprise).<sup>16</sup> Sentence length (complexity) offers no explanatory power for short-term CARs. Finally, firms which report disappointing earnings despite providing guidance get punished more severely than non-guiding firms. This effect is so strong that firms that had provided guidance have on average lower returns to conference calls. In robustness checks available on request, we find that the results continue to hold when other firm characteristics (such as the number of analysts that cover the company) are included.

---

<sup>16</sup>Zhou (2016) also finds a positive response to quantitative information in the presentation part, though he does not consider an interaction with the earnings surprise.

Next, columns (5) to (7) study the role of vague communication by the CEO and the CFO separately. In the full sample, the interaction term of  $\%UnctAnsw$  and the earnings surprise is negative and significant only for the CEO. However, column (7) shows that CFO vagueness in S&P500 firms reduces the earnings response, consistent with CFOs playing a more important role for large firms.

In sum, the baseline findings in Table 2 substantially support Hypothesis 1 that vagueness in managerial communication dampens earnings responses.

## 4 Do managers have different styles of vagueness?

The findings so far leave open some important questions. Our basic conception is that the way a manager speaks during a specific call is driven by (1) the “style” of the manager (if it exists), (2) the company’s “culture” and business model, and (3) the manager’s incidental, quarter-specific use of uncertain words. The incidental usage can depend on many factors beyond random variation. One relevant factor is current business conditions. In turbulent times it might simply be harder to make any definite statements about the future. Our regressions thus far address differences among firms by including a large set of control variables. In what follows, we aim to tease apart the three listed factors more explicitly.

Specifically, we hypothesize that overall managerial style will be the most important determinant of market and analyst responses. Stock market reactions to current earnings require interpretation within the broader context. Indeed, managers, analysts, and investors interact in settings other than conference calls. Solomon and Soltes (2015) cite survey evidence showing that 97% of CEOs of publicly traded firms meet privately with investors. Private conversations of analysts and management are also frequent (Green, Jame, Markov, and Subasi, 2014; Soltes, 2014). Soltes (2014) concludes that analysts mainly seek to use the meetings to provide access to management for their clients. The large-sample evidence in Green, Jame, Markov, and Subasi (2014) shows that brokerage research itself benefits from access to management through broker-hosted investor conferences. Even more intense interactions occur at longer analyst/investor days (Kirk and Markov, 2017).

To the extent that we in fact can identify a stable manner of managerial communication, this vagueness style may also govern communication in these additional settings, making it difficult for analysts and, consequently, other market participants to obtain precise in-

formation. If, by contrast, information is only provided through earnings conference calls, we should find that residual vagueness is the centrally important factor. Our next task, therefore, is to provide a method for extracting each manager’s vagueness style.

Section 4.1 discusses existing approaches to accounting for managerial style and motivates our approach. Section 4.2 develops an intuitive argument for the existence of managerial vagueness style. Section 4.3 gives details of how we extract vagueness style from answers. Section 4.4 tests whether vagueness style or residual vagueness plays a more important role dampening earnings responses.

## 4.1 Prior work on managerial style

In existing empirical studies, style is made evident by the importance of a manager fixed effect in variables related to firm policy. The main challenge in such analyses lies in separating manager style from the effects of firm organization or culture, since both the manager and the firm are observed simultaneously. The identification strategy spearheaded by Bertrand and Schoar (2003) relies on managers who transition from one firm to another during the sample period. In such cases, firm fixed effects can be included when regressing the variables, which style is expected to influence, on manager fixed effects. The significance of manager fixed effects indicates that the outcome variable includes a component unique to a given manager that s/he carries over when moving across firms. It shows that style matters. Their seminal findings show that such a component can be identified for various measures of investment and financial policy, firm performance, and M&A activity, and have spurred broad further inquiries using the same methodology.

Fee, Hadlock, and Pierce (2013) argue that endogenous factors are likely to simultaneously produce both a manager transition and a shift in company policies. In support of their argument, they find no evidence of significant changes in asset growth, capital expenditure or leverage in cases of exogenous turnover, due to death, health issues or retirement. On the other hand, they find that these policies do change if the previous CEO was forced out, suggesting that boards are selecting managers, perhaps equipped with a certain “style”, to execute a turnaround. This discussion highlights the difficulties of measuring manager style from observables, which are also affected by other important stakeholders.

We offer a methodological and a substantive contribution to this literature. We introduce a proxy for firm culture by observing the same manager in both a well-prepared setting, the

formal presentation, and an at least partially improvised setting, answers to questions, on a conference call.<sup>17</sup> This approach enables us to avoid the (limited) occurrence of manager transitions. We confirm our results in a sample of firms that did experience managerial turnover, in the spirit of Bertrand and Schoar (2003).

## 4.2 Conference call vagueness around managerial turnover events

In this section we make the case for using  $\%UnctAnsw$  to extract each manager’s personal style of vagueness, while controlling for vagueness related to the specificities of the firm’s business model, or communication “culture”, with  $\%UnctPres$ . We do so by examining the effect of manager turnover on those two parts of earnings conference calls. We exploit two types of turnover events.

The first type is associated with *firms that replace their CEO or CFO*, thus enabling us to compare the vagueness of the call under the old manager and the new one. The second type of turnover is based on *managers who move between firms* in our sample (“mover” CEOs or CFOs), so we can compare the vagueness of the same person on conference calls at two different firms. If that vagueness persists, we have a good measure of personal style.

Two different managers at the same firm: We begin by comparing the vagueness of calls under the old CEO and the new one. If the vagueness of answers to analyst questions is specific to the person, we would expect the  $\%UnctAnsw$  under the old and new CEO to differ, because even if the firm searches for a CEO whose style is similar, the replacement will be imperfect. By contrast, if the language of the presentation part is a firm-characteristic rather than a manager-characteristic, we would expect the  $\%UnctPres$  to remain rather stable despite the turnover. Two additional measures fine-tune the analysis. First, given that managers may use more similar language in scripted than non-scripted communication, greater similarity in  $\%UnctPres$  under the old and the new manager is to be expected, independent of corporate culture. To address this conjecture, we compare turnover firms to similar control firms without turnover. For these “without” control firms, if we find both  $\%UnctPres$  and  $\%UnctAnsw$  to be stable over time, that would reassure us that the

---

<sup>17</sup>Dikolli, Keusch, Mayew, and Steffen (2016) capture a proxy for CEO integrity from language in CEO shareholder letters, controlling for 10-K disclosures. In our setting, we observe the same person speaking at the same time, once in a more prepared and well-rehearsed, once in a more improvised form.

effect on  $\%UnctAnsw$  observed among turnover firms is indeed due to CEO replacement and not merely the general lower persistence of unscripted communication.<sup>18</sup> Thus, for each firm experiencing turnover we select one control firm from the same Fama-French 17 industry group that best matches it in the observation period. The matching factors, all measured in averages, are total assets,  $\%Unct_{CEO}Pres$  and average  $\%Unct_{CEO}Answ$  over the “old” period corresponding to the tenure of the outgoing CEO of the turnover firm. In the majority of cases, we are able to obtain close matches.

Second, firms that change their CEOs may disproportionately lack a stable culture. Therefore, we also look at the language of the earnings press release,  $\%UnctEPR$ , as the piece of earnings communication arguably most removed from the specific person in charge. If strong similarities are found in the wording of EPRs under the old and new CEO, that would indicate a persistent communication culture even for a turnover firm.

We focus on turnovers with at least 5 quarters of data for the old and new CEO, so that for each turnover firm we have sufficient observations to calculate average  $\%Unct_{OldM}$  and  $\%Unct_{NewM}$  for the EPR as well as the presentation and answers part of conference call.  $\overline{\%Unct}_{OldM}$  corresponds to the outgoing CEO and  $\overline{\%Unct}_{NewM}$  to the incoming one, at the same turnover firm. For “without” control firms, the old and new period is artificially constructed using the CEO replacement date from the matching turnover firm. This ensures that calculations for control firms are based on similar numbers of observations and calendar periods as for turnover firms.

In the last step, we calculate the correlation between  $\overline{\%Unct}_{OldM}EPR$  and  $\overline{\%Unct}_{NewM}EPR$  across all CEO turnover and control firms, which we denote  $\rho_{OldM/NewM}EPR$ . In analogous fashion, we calculate  $\rho_{OldM/NewM}Pres$  and  $\rho_{OldM/NewM}Answ$ . We expect  $\rho_{OldM/NewM}EPR$  to be high in the cross-section of turnover firms. Continuing in this vein, we expect  $\rho_{OldM/NewM}Pres$  to also be rather high and finally we expect  $\rho_{OldM/NewM}Answ$  to be low. Such a finding would be consistent with our previous argument that the language of answers more accurately reflects the style of the particular CEO.

[Table 3 about here]

The results in Panel (a) in Table 3 support our conjectures. Among control firms, we

---

<sup>18</sup>As an alternative benchmark we also use the other executive of the same company, who was not replaced. For instance, in case of a CEO turnover, we construct before-after correlations for the CFO. We obtain similarly strong results with this specification.

observe high  $\rho_{OldM/NewM}$  for all three pieces of earnings communication (0.74, 0.65, and 0.70, respectively). In particular, high  $\rho_{OldM/NewM}Answ$  provides evidence that patterns in oral unscripted communication can be equally stable as in the scripted or written counterpart as long as the person answering the questions is kept constant.

Among the 1,578 CEO turnover firms,  $\rho_{OldM/NewM}Answ$  is low (=0.26), much lower than among control firms (diff=-0.44). By contrast, in the presentation part the old-new correlation is rather high ( $\rho_{OldM/NewM}Pres=0.46$ ). Finally,  $\rho_{OldM/NewM}EPR$  among turnover firms is high (=0.66) and only weakly different from control firms (diff=-0.08). Given the large sample, all these differences are significantly different from zero statistically but their economic significance varies greatly. Similar results obtain for the 1,665 CFO turnovers ( $\rho_{OldM/NewM}Answ=0.22$ ,  $\rho_{OldM/NewM}Pres=0.51$ ,  $\rho_{OldM/NewM}EPR=0.69$ ).

In sum, these results confirm three things. First, turnover firms still appear to have a stable culture. Second, the language of the scripted part of the call is less sensitive to a CEO/CFO turnover and hence more specific to the firm, than to a particular person in charge. Third, and most important, answers seem to reflect the language of individual CEOs/CFOs.

Same manager at two different firms: Panel (b) of Table 3 provides a complementary analysis by following the same manager (a “mover”) from one firm to another. In this case, the correlations we calculate,  $\rho_{OldF/NewF}$ , are based on the average frequency of uncertain words in EPR, presentations and answers during the periods that the “mover” was in charge at her old and new firm.<sup>19</sup> Here, we would expect  $\%UnctAnsw$  to be similar at the old firm and the new (since it is the same person speaking), while  $\%UnctPres$  and  $\%UnctEPR$  might well differ. The results support this idea. The correlation for the EPR,  $\rho_{OldF/NewF}EPR$ , is only 0.15 in the case of moving CEOs, meaning that these CEOs do not bring the EPR style of their prior firm with them, and  $\rho_{OldF/NewF}Pres$  is also low (=0.22). By contrast,  $\rho_{OldF/NewF}Answ=0.43$ , suggesting that answers style travels with the CEO. Similar results obtain for mover CFO.

Overall, the analysis in this section supports our strategy of extracting manager style from  $\%UnctAnsw$  using  $\%UnctPres$  and other factors to control for firm effects. The next section develops the estimation procedure in more detail.

---

<sup>19</sup>The control sample for this test consists of those firms without manager turnover, which are most similar to the firm at which the “mover” worked in after the move.

### 4.3 Estimating manager style of vagueness

We identify manager style of vagueness with the systematic component of the frequency of uncertain words in answers. We estimate it as the fixed effect from the following regression, separately for CEOs and CFOs (and so MGR can be either CEO or CFO):

$$\begin{aligned} \%Unct_{MGR}Answ_{i,t} = & \sum_{i=1}^{N_{MGR}} \gamma_i \cdot MGR_{i,t} + \beta_1 \cdot \%Unct_{MGR}Pres_{i,t} + \beta_2 \cdot \%UnctAnaly_{i,t} + \\ & + \beta_3 \cdot Neg_{MGR}Answ_{i,t} + \beta_4 \cdot NegAnaly_{i,t} + \beta_k \cdot Controls_{j,t}^k + \alpha + \epsilon_{i,t} \end{aligned} \quad (4)$$

Manager-specific vagueness (her style) is captured by the  $\gamma_{1,\dots,N_{MGR}}$  coefficients on the fixed effects and denoted  $Vague_{MGR}Style$ . The residuals,  $\epsilon_{i,t}$ , which we later denote  $Vague_{MGR}Resids$ , can be interpreted as deviations from style, not explained by any of control variables included in the regression.

We control for both linguistic markers in the call itself and a range of firm characteristics. The matrix  $Controls^k$  is composed of the following variables: total assets, EPS growth from same quarter the previous year, stock return over the previous quarter, daily volatility as well as the earnings surprise and also includes the market return in each quarter. In terms of language-related controls, we include the negativity of answers, since vagueness can be related to the nature of news, whether it is positive or negative. To account for the fact that the language of an answer might also depend on the wording of the question, we include the frequency of uncertain and negative words used by analysts participating in the call.

Importantly, based on insights from the previous section, we control for  $\%Unct_{MGR}Pres$ , the frequency of uncertain words in presentation. This variable combines both the systematic (“culture”) and the time-varying (momentary business conditions) component of firm-related vagueness.<sup>20</sup> As such, we would expect it to correlate with certain observable firm characteristics, which themselves indicate uncertainty. Results available on request show that  $\%Unct_{MGR}Pres$ , both for CEOs and CFOs, increases markedly with volatil-

---

<sup>20</sup>In unreported results, we experiment with separating the two components by regressing  $\%UnctPres$  on firm fixed effects and recording both the coefficients on each fixed effect (the vagueness “culture” of each firm) as well as the residuals (time-varying factors). The conclusions under this alternative approach remain fundamentally unchanged from those reported below.



ity and decreases with stock- and market-level returns. Furthermore,  $\%Unct_{CEO}Pres$  also decreases with earnings surprise and earnings growth, suggesting that presentations employ more straightforward language when earnings were (unexpectedly) good. However, we note the rather low explanatory power of these observables, which we take as evidence that  $\%Unct_{MGR}Pres$  also captures *unobservable* firm-specific factors affecting vagueness of communication. This makes it a useful control when extracting manager style.

While the main specification shown in Table 4 captures many key determinants of vagueness in answers (and, by including vagueness in presentations also captures common determinants, even time-varying ones, that are unobservable to the researcher), it is interesting to examine some other specifications. These are summarized in Appendix Table A.2 and are discussed further below.

[Table 4 about here]

We first estimate Equation 4 leaving aside manager fixed effects to gauge how much of the heterogeneity in  $\%UnctAnsw$  can be explained with observable characteristics alone. The results are reported in column (1) for CEOs and column (3) for CFOs. Answers at larger firms exhibit a lower frequency of uncertain words. Overall, none of the firm characteristics matter strongly, which we treat as another indication that the language of this part of conference calls is more driven by personal than corporate features.

Linguistic markers of the call are significant and have the expected effects on the frequency of uncertain words in answers. Vagueness of managers in the presentation as well as of analysts, and negative linguistic tone of managers in the answers is each highly significantly associated with the frequency of uncertain words in manager answers. Analyst negativity enters with a negative sign (significant only for the CEO), but the magnitude of the coefficient is very small compared to that of negativity in answers. The  $R^2$  of 6.9% / 1.0% in columns (1) / (3) indicates that the control variables explain little.

After CEO/CFO fixed effects are included, the  $R^2$  increases to 33.6% / 22.3%, as shown in columns (2) / (4). Thus, the key message is that fixed effects dominate, even though we include a large set of control variables that are tightly related to our variable of interest.

Table B.1 in the Internet Appendix compares CEO style estimates from several alternative specifications. Specifications (1) and (2) use fewer variables than our baseline specification (3). In specification (4), we add  $\%Neg_{CEO}Pres$ . Finally, recall that in our

main specification, when examining  $\%Unct_{CEO}Answ$ , we only consider  $\%Unct_{Pres}$  based on the words the CEOs themselves spoke in the presentation. In specifications (5) to (8), we also allow for vagueness “spillovers” between the CEO and CFO, whenever both are present in a call. In specification (6), we additionally control for frequency of uncertain words in the earnings press release. Specification (7) adds analyst forecast dispersion before the call. Specification (8) also includes the *change* in  $\%Unct_{CEO}Pres$  from one call to the next.

While some of these variables provide additional explanatory power for  $\%Unct_{CEO}Answ$ , the main conclusion is that the fixed effects under these various specifications are very highly correlated with the ones estimated under Equation 4. A disadvantage of the larger specifications is that the number of observations is notably reduced. Given the similar findings, we chose to proceed with the more parsimonious Equation 4 in order to retain the highest possible number of observations for further analysis.

To get a sense of the heterogeneity in manager style, we construct histograms of the coefficients on individual manager fixed effects estimated from Equation 4. As Figure 3 shows, the heterogeneity is substantial for both CEOs and CFOs but somewhat more pronounced for the latter (the 10th-90th percentile range is 0.57 for CEOs and 0.91 for CFOs).

[Figure 3 about here]

Moreover, the CFO distribution is also slightly shifted to the right relative to the CEO distribution, meaning CFOs are somewhat vaguer overall. We note that no clear outliers appear in either distribution. That is, vague style appears to progress along a continuum, as opposed to being concentrated in two or more discrete clusters. There is an asymmetry in the distributions however, with both exhibiting a fatter right tail, which means that particularly vague-talking managers are more frequent than particularly straight-talking ones. In the regressions that follow, we use a standardized version of  $Vague_{MGR}Style$ , thus producing mean style of 0 and standard deviation of 1.

Additional analysis shown in Figures B.2 and B.3 in the Internet Appendix confirms that heterogeneity in style of vagueness is not driven by industry or cohort effects. There is some tendency for older CEOs and CFOs, as well as those in riskier industries, like finance and oil, to speak in vaguer terms. However, differences within industries and age cohorts dwarf those across such groupings.

In sum, this section shows that managerial style of vagueness exists; managers differ

substantially from each other with respect to vagueness. Moreover, these differences cannot easily be explained by either systematic or time-varying characteristics of the firms for which they work. We now turn to examine how managerial style of vagueness influences participants in the investment community. For ease of exposition, we discuss results only for CEOs first and refer to Table 9 for an examination of CFO style.

#### 4.4 Earnings response coefficients with style

Style could matter most directly by influencing stock price reactions to information. We are now in a position to refine the test of Hypothesis 1. Specifically, we now estimate:

$$\begin{aligned}
 CAR01_{i,t} = & \alpha_i + \beta_1 \cdot SurpDec_{i,t} + \beta_2 \cdot Vague_{MGR}Style_i + \beta_3 \cdot Vague_{MGR}Style_i \cdot SurpDec_{i,t} + \\
 & + \beta_4 \cdot Vague_{MGR}Resids_{i,t} + \beta_5 \cdot Vague_{MGR}Resids_{i,t} \cdot SurpDec_{i,t} + \\
 & + \beta_k \cdot Controls_{i,t}^k + FF48_i + Year_t + \epsilon_{i,t}
 \end{aligned}
 \tag{5}$$

$Vague_{MGR}Style$ , is the manager’s style of vagueness estimated from the language of her answers to analyst questions during earnings calls, according to Equation 4, and  $Vague_{MGR}Resids$  represents the residuals from that equation, i.e. deviations from style. The main variables of interest are the two interaction terms between vague style / residual vagueness and the earnings surprise. We standardize vague style and residual vagueness to mean zero and standard deviation of one.

Table 5 reports the results. As can be seen in the significantly negative coefficient on the interaction term of  $Vague_{MGR}Style$  with the earnings surprise in column (1), we find substantial support for the hypothesis that a more vague style is associated with a weaker response to earnings. Column (2) shows the results separately for S&P500 companies. Clearly, CEO vagueness matters more in large firms. A possible interpretation is that a single earnings number is less representative of the entire performance of a large firm, which increases the importance of additional information communicated by the managers.

How big are these effects? To answer that important question, note that in the regression  $Vague_{MGR}Style$  is standardized, so the interpretation of the coefficient on  $SurpDec$  is that moving to the next higher decile of earnings surprise increases short-term CAR by 78 basis

points, for CEOs at the average style of vagueness. If the CEO is straight-talking, i.e. one standard deviations below the mean for vagueness style, CAR increases by a further 4.5 basis points for each surprise decile increment. When focusing on S&P500 firms, the effect of a straight-talking CEO is more pronounced: close to 9 basis points for each surprise decile increment, which equates to a roughly 13% higher earnings response coefficient (-0.086/0.661). Overall, these results confirm our conjecture that managerial vagueness style (which may also govern managerial communication in other settings), rather than residual, quarter-specific vagueness, is the key determinant of stock market responses.

[Table 5 about here]

At first glance, it might seem puzzling that  $Vague_{CEO}Style$  has a positive *unconditional* effect on short-term CAR. To understand why this occurs, note that “just-meeting” earnings ( $SurpDec = 0$ ) appears, in fact, to disappoint the market on average: The short-term CAR is minus 1.08 percent on average for these “just-meeting” firms. The actual mean surprise in the sample is positive. Thus, the coefficient on  $Vague_{CEO}Style$  does not give the effect of vagueness at the mean surprise, but at a value somewhat below the mean surprise. Vague CEO style cushions the otherwise negative impact of zero-surprises, consistent with how vagueness otherwise reduces earnings response.

To zoom in on the personal aspect of style, we estimate Equation 5 in two subsamples:

1. firms with manager turnover during the sample period, including firms linked by a manager switching jobs (*turnover sample*)
2. only firms linked by a manager switching jobs (*mover sample*)

The *mover sample* is equivalent to the approach used in Bertrand and Schoar (2003), thus we need to observe a manager at Firm A, who later moves on to Firm B, where both firms are part of the sample. Unfortunately, in our case this investigation is only possible for CFOs, since we simply do not observe enough CEO movers.<sup>21</sup> The *turnover sample* is substantially broader, because we can also consider outgoing managers, who leave the sample and new hires who join it. Bertrand and Schoar (2003) refrain from using this broader pool of turnovers, because they worry it might capture a firm-period effect rather

---

<sup>21</sup>We present CFO mover results in Table 9 in Section 6.

than a manager effect. We believe this is a lesser concern in our setting, where we define style with respect to words that a manager speaks individually during earnings conference calls. The key feature of both samples is that they allow firm fixed effects to be included alongside style of vagueness (thus making industry fixed effects redundant). The interpretation of the coefficient on  $Vague_{CEO}Style$  is now the impact of the *difference* in style between a given CEO and the average style of all CEOs that have worked for that firm during the sample period. In other words, the focus is on within-firm variation in style, while effectively controlling for any unobserved between-firm heterogeneity.

Columns (3) and (4) of Table 5 show that the results for the full sample continue to hold in the turnover sample: CEO style of vagueness continues to be an important determinant of short-term earnings responses in all firms, though especially in the largest firms.

In sum, we document that vagueness of managers reduces the short-run reaction to earnings. It is in particular the consistent style of vagueness that plays the key role. The results provide strong evidence that the effects of vague style are not driven by unobserved firm heterogeneity; rather they are tied to specific persons in charge.

## 5 Interpreting the evidence

We have established that vague speech style by managers significantly reduces the immediate market reaction to earnings announcements. This section considers several additional insights emerging from that finding. It presents tests that address the reasons for this weaker response, the informativeness of earnings news, analyst responses, and whether there are potential benefits of vague communications.

### 5.1 Why is there less immediate response?

The results so far strongly support Hypothesis 1. They are also consistent with the idea that earnings communicated by vague managers prove in some fundamental way to be less informative. If in fact they are, we would expect the weaker immediate response to be permanent, i.e., neither increased nor reverted in the post-earnings period. But there are two alternative possibilities, also consistent with Hypothesis 1: On the one hand, one could imagine that earnings information from vague managers is more difficult to interpret in

the short term but, given enough time, investors are able to figure it out. The underlying explanation would be that, deep inside, earnings communicated by vague and straight managers are equally informative, but investors under-react to vague earnings, due to e.g. ambiguity aversion. Thus, the weaker immediate response should be followed up by more pronounced post-earnings drift. Alternatively, it is conceivable that investors in fact over-react to straight-talking managers initially. Thus, it could be that vagueness is, in fact, a factor that corrects the tendency of managers to be overconfident.

To test these competing explanations we examine the cumulative abnormal returns between 2 and 60 days following the conference call, CAR260. Thus, we conduct a regression analogous to Equation 5, but with CAR260 as the dependent variable.

$$\begin{aligned}
 CAR260_{i,t} = & \alpha_i + \beta_1 \cdot SurpDec_{i,t} + \beta_2 \cdot Vague_{MGR}Style_i + \beta_3 \cdot Vague_{MGR}Style_i \cdot SurpDec_{i,t} + \\
 & + \beta_4 \cdot Vague_{MGR}Resids_{i,t} + \beta_5 \cdot Vague_{MGR}Resids_{i,t} \cdot SurpDec_{i,t} + \\
 & + \beta_k \cdot Controls_{i,t}^k + FF48_i + Year_t + \epsilon_{i,t}
 \end{aligned}
 \tag{6}$$

If earnings coming from vague managers are fundamentally less informative, then  $\beta_3$  would be insignificant. If the under-reaction explanation applies,  $\beta_3$  in that regression will be positive and significant, meaning more pronounced drift for vague managers. If  $\beta_3$  is very large and positive, then it is conceivable that the initial reaction reverts for straight-talking managers, which would support the vagueness-as-a-second-best-corrective explanation. Results in column (2) of Table 6 suggest the first explanation is true. In general, we find post-earnings drift (significantly positive coefficient on *SurpDec*), consistent with a large literature on the subject, but it does not depend on the style of vagueness of the CEO, as evidenced by the insignificant interaction of *SurpDec* with *Vague\_{CEO}Style*. Thus, the impact of vague style on the immediate earnings response is sustained, but neither expanded nor reduced.

The findings above apply to the average firm. A finer test takes into account the possibility that the shareholder base across firms may well differ with respect to investment approach and skill. Bushee (2001) and Bushee and Noe (2000) develop a methodology for classifying institutional shareholders (defined as those filing forms 13-F), based on the breadth and dynamics of their holdings. In particular, they differentiate between *dedicated*

investors, who are loyal to a small number of firms and hence exhibit low diversification and low turnover; *quasi-indexers* who follow a well-diversified buy-and-hold strategy with low turnover; and finally *transient* investors, who frequently trade in and out of a large number of firms. These transient investors might merit the label “fervent.” They are interested in whatever pieces of information they can uncover about companies; their fierce hunt makes them best equipped to correctly interpret such information. Collins, Gong, and Hribar (2003) find that transient investors are best able to correctly price the accruals anomaly. In our context, we would expect them to be most apt in reading the tea leaves presented in vague managerial talk.<sup>22</sup>

Accordingly, we match firms in our sample to the investor classification data we obtain from the website of Brian Bushee, and we sort firms into terciles of the transient share, defined as the ratio of shares held by transient investors in a given quarter to total shares outstanding.<sup>23</sup> The average transient shares in the three terciles are 8%, 15% and 27% respectively. Clearly fervent investors are a minority. Furthermore, transient share and  $Vague_{CEO}Style$  are only very weakly correlated ( $\rho=-0.034$ ).

In columns (3) to (6) of Table 6 we present the results of estimating Equation 5 (using both CAR01 and CAR260 as dependent variable) in the lower and upper terciles, respectively, of transient shares. Comparing first the coefficients on  $SurpDec$ , it is apparent that stock prices of firms with a larger share of transient investors respond more strongly to earnings in the short run, column (3) vs. (5). They also have weaker post-earnings drift, column (4) vs. (6). This is suggestive evidence that transient investors pay greater attention to company earnings and are able to price them faster and more accurately, a finding that could be explored in other contexts. Turning to the coefficient on the interaction between  $SurpDec$  and  $Vague_{CEO}Style$  in the CAR01 regressions shows that it is significantly negative only among firms with a low share of transient investors. The same interaction in the CAR260 regressions is insignificant, suggesting the initial muted response is sustained also among firms with a low share of transient investors.

Overall, these results suggest that earnings from vague managers are indeed fundamen-

---

<sup>22</sup>Blau, DeLisle, and Price (2015) find that compared to investors at large, short sellers more skillfully exploit information contained in deviations in net positive tone between the presentation and the questions and answers parts of conference calls.

<sup>23</sup>Since transient and quasi-indexer shares are positively correlated, we orthogonalize the transient terciles by first forming them within each tercile of quasi-indexers share. The overall lower tercile of transient share contains companies with the lowest transient share in each quasi-indexer tercile and so on.

tally less informative and cloudy, which stems from the fact that relatively few investors are skilled at uncovering the true meaning behind such communication.

## 5.2 Informativeness of earnings calls

We use two standard measures of the overall informativeness of earnings calls: First, we use the *absolute* cumulative abnormal return (ACAR01) on the conference call date plus one day. Second, we calculate abnormal trading volume by dividing the cumulative trading volume of a firm on the call date and the subsequent trading day<sup>24</sup> by two times its daily pre-call average, calculated over a window starting 45 days and ending 6 days before each call date. To reduce skewness, we take the logarithm of the resulting ratio:

$$AbnVol = \log \left( \frac{TrdVol_{j,t:t+1}}{2 \times avg(TrdVol_{i,t-45} : TrdVol_{i,t-5})} \right)$$

On average, relevant information is transmitted on conference calls (Frankel, Johnson, and Skinner, 1999). However, our second hypothesis posits a negative link between manager vagueness and the amount of information entering the market around the conference call:

**Hypothesis 2:** Vagueness makes earnings news less informative.

We test this hypothesis by estimating the following panel regression. Hypothesis 2 predicts  $\beta_2 < 0$  and  $\beta_3 < 0$ :

$$\begin{aligned} \begin{bmatrix} ACAR01_{i,t} \\ AbnVol_{i,t} \end{bmatrix} &= \alpha_i + \beta_1 \cdot |SurpDec_{i,t}| + \beta_2 \cdot Vague_{MGRStyle_i} + \\ &+ \beta_3 \cdot Vague_{MGRResids_{i,t}} + \beta_k \cdot Controls_{i,t}^k + FF48_i + Year_t + \epsilon_{i,t} \end{aligned} \quad (7)$$

Again, the alternative hypothesis holds that the provision of earnings numbers and managerial communication style are, in fact, substitutes. If that were the case, investors would find earnings announcements particularly informative (and react more strongly) for firms where managers otherwise communicate vaguely.

---

<sup>24</sup>We cumulate call-date and next day volume, since we do not know the exact timing of the call, in particular whether it occurred before or after market close.



The results presented in column (1) of Table 7 show a negative effect of  $Vague_{CEOStyle}$  on the price response to earnings conference calls, as expected. The effect is sizable economically - an increase in  $Vague_{CEOStyle}$  of one standard deviation cuts 11 basis points from the ACAR.

[Table 7 about here]

To further illustrate the effect of vagueness the informativeness of earnings in the short run, we plot abnormal trading volume over the 11-day period surrounding the call. For this purpose, we summarize the unconditional effect of vagueness by averaging abnormal trading volume across all calls in the sample, irrespective of the magnitude of the earnings surprise.

[Figure 4 about here]

As can be seen in Figure 4, abnormal trading volume generally spikes on days 0 and 1 relative to the call. However, the increase in trading volume is markedly smaller around calls involving vague managers (those in the top quintile of the distribution of vagueness), represented by the solid line in Figure 4, as opposed to straight-talking ones (those in the bottom quintile, dotted line). For vague CEOs, trading volume increases by 53%, compared to 71% straight-talking ones. The resulting difference of 18% (percentage points) is highly statistically significant ( $t = 20.9$ ). Importantly, there is no systematic difference in abnormal trading volume further out in the event window, which suggests the impact is indeed coming from vague communication during the earnings conference calls.

In a multivariate setting, controlling for the magnitude of the earnings surprise in particular, the effect of  $Vague_{CEOStyle}$  on abnormal volume remains significantly negative, as shown in column (2) of Table 7.

In sum, these results show that investors are less willing to trade on earnings news when the communications from managers accompanying this news is vague.

### 5.3 Analyst reactions to vaguely communicated earnings

Security analysts are the direct consumers of earnings conference calls. We next examine whether they also find vaguely communicated earnings less informative. We expect analysts covering firms with vague managers to be more uncertain about both the value of the

company and the precision of their own previous forecasts. Significant findings in this regard would be quite telling, since analysts are paid for processing information provided by companies and issuing forecasts based on it. We construct two measures of analyst reactions, one related to the timeframe and one to confidence in their forecasts.

The first measure is *ShareAnalPost*, defined as the fraction of all analysts following a firm, who update their forecasts within 3 days of the earnings conference call. In our data, roughly half of all analysts who revise following the call do so in the first 3 days. The second measure, post-announcement revision frequency, is the number of revisions after the conference call of quarter  $t$  up to the earnings announcement of quarter  $t+1$ , divided by the number of analysts following the firm. With respect to these two measures, our third hypothesis states that:

**Hypothesis 3:** Vague style reduces the share of analysts who respond within the first 3 days of the conference call. Forecast revision frequency is higher following calls hosted by vague managers.

We relate analyst variables to vagueness in a regression analogous to Equation 7. In line with Hypothesis 3, we expect  $\beta_2, \beta_3 < 0$  for *ShareAnalPost* but  $\beta_2, \beta_3 > 0$  *RevFreqPost*. Column (3) of Table 7 shows the share of analysts revising their forecasts in the first 3 days following the call is indeed lower for calls attended by vague CEOs. Finally, column (4) of Table 7 shows that CEO style of vagueness increases the frequency with which analysts revise their forecasts in the following quarter.

In sum, these results support Hypothesis 3. They suggest that the negative effect of managerial vagueness on the informativeness of the earnings surprise for stock market participants goes hand-in-hand with lower confidence among analysts, too.

## 5.4 Are there benefits of vague managers?

So far we have established that earnings communicated by vague managers delay the responses of analysts and increase their uncertainty; they also cloud the picture for the majority of investors. These are major consequences but they do not explain why firms might hire vague managers. Could vague talk bring any benefits? The answer is “yes” in a second-best world where managers’ statements that prove to be excessive after the fact get punished. Arguably, this issue would be more pronounced for positive statements, if things later take

a turn for the worse. This is especially relevant given the general tendency of analysts to issue overly optimistic forecasts (Hong and Kubik, 2003). Hence, if vague style indeed helps tone down positive expectations, we would expect to see fewer (or less) negative earnings surprises for vague managers.

We test this conjecture by regressing next quarter’s earnings surprise on style of vagueness, residual vagueness, and the same set of control variables and fixed effects as in Table 7.

$$\begin{aligned} SurpDec_{i,t+1} = & \alpha_i + \beta_1 \cdot Vague_{MGR}Style_i + \beta_2 \cdot Vague_{MGR}Resids_{i,t} + \\ & + \beta_k \cdot Controls_{i,t}^k + FF48_i + Year_t + \epsilon_{i,t} \end{aligned} \quad (8)$$

In column (1) of Table 8, we do indeed find that  $Vague_{CEO}Style$  bears a positive relationship with earnings surprise, which suggests that firms with vaguer CEOs are more likely to exceed than undershoot analyst expectations. An alternative explanation could be that vague CEOs fall below expectations just as often but disappoint by *less* (and/or exceed expectations by *more*), compared to straight-talking CEOs. In other words, the results could be driven by different magnitudes of surprises, rather than the frequency of disappointment.

[Table 8 about here]

To obtain deeper insights, we calculate for each CEO the median earnings surprise decile across all quarters she was in charge. A higher (positive) median surprise indicates that a given CEO is more likely to exceed analyst expectations (whereas a higher average surprise could be a mix of a few large positive and many small negative surprises). We then regress the median surprise on the CEO’s style of vagueness (and control variables averaged across each CEO’s tenure). In column (3) of Table 8 we again find a positive coefficient on  $Vague_{CEO}Style$ .

To illustrate these results, we repeat the cross-sectional regression without  $Vague_{CEO}Style$  and examine the residuals. Specifically, we divide CEOs into five groups based on their style of vagueness and consider those in the bottom quintile as straight-talkers and those in the top quintile as vague-talkers. Finally, we draw a histogram of the regression residuals for vague- and straight-talking CEOs separately. This gives us a distribution of the median earnings surprise among vague- and straight-talking CEOs, after taking into account industry effects and other explanatory variables included in the regression.

[Figure 5 about here]

As can be seen from Figure 5, vague CEOs cluster around small positive surprises. By contrast, more of the straight talking CEOs find themselves falling just short of analyst expectations. However, vague communication implies a modestly lower likelihood of delivering a large positive surprise. Taken together, Figure 5 would suggest that vaguer managers have *smaller* absolute surprises. As columns (2) and (4) of Table 8 show, there is indeed a significantly negative link between *VagueStyle* and absolute surprises. Our results are consistent with vagueness being used as a tool to manage expectations.

Overall, vague communication appears to help steer analysts away from making overly optimistic predictions for future earnings, which is their natural tendency since they are overwhelmingly on the sell side. In this respect, it serves a similar function as providing earnings guidance. The price of vagueness, however, is that it lowers the earnings response that we have documented.

## 6 The role of CFO style

Table 9 presents summary results for the role of CFO style. Panel A considers earnings response coefficients. Consistent with the results in Table 2, column (1) of Table 9 shows that CFO vagueness does not affect the earnings response in the full sample. However, restricting attention to the S&P500 companies, where the CFO arguably plays a more powerful role in overall company strategy and management than in smaller firms, CFO vagueness does induce smaller earnings responses; see column (2). This also proves true in the turnover sample (columns 3 and 4). Finally, columns (5) and (6) consider the Bertrand and Schoar (2003) approach, which substantially reduces the observations available for estimation. In exchange, however, it produces the strongest test. That test shows that when a vague manager moves from Firm A to Firm B, the ERC of the latter drops, even after controlling for all differences between them, both observable and unobservable (i.e. for firm fixed effects). For the sample of mover CFOs, we obtain significance for the interaction term between *Vague<sub>CFO</sub>Style* and earnings surprise even among all firms, though the effect is still much more pronounced among S&P500 firms.

Panel B considers other consequences of vague CFOs. Columns (7) to (10) show that, much like for CEOs, greater CFO vagueness is associated with less informative earnings

calls, with less pronounced analyst responses, and with higher revision frequency. Finally, we find directionally consistent results regarding the impact of  $Vague_{CFO}Style$  on the future earnings surprise, though they are significant only for the absolute surprise.

## 7 Conclusions

A corporation's earnings report needs to be interpreted and digested by both analysts and the market. The conference call accompanying the reports release, predominantly conducted by the CEO and CFO, conveys valuable information that facilitates this process. Word choice by managers affects information processing. In particular the use of uncertain words, such as "probably" and "maybe", induces investors to respond less to earnings surprises. That is especially true for managers answers to analyst questions.

The structure of conference calls - a scripted presentation followed by a much more improvised question and answer session - enables us to identify manager fixed effects in the use of uncertain words, thus setting to the side explanations based on company culture and current conditions. Managers definitely have distinctive styles. Some are straight talkers, and are thus quite informative. Others are vague talkers, using uncertain words much more often than their straight-talking peers. Vague talkers cloud the message. Analysts and the stock market struggle to incorporate earnings news, respectively into earnings forecasts and stock prices, when faced with vague talkers. A benefit of vague communication is that it helps tamp down analyst expectations. When hiring a CEO, boards should be aware that their decision will include the consequential choice of a particular communication style.

These results raise matters for further study. We mention two sample questions that are the subject of ongoing research. 1. Do managers tilt to vagueness when they have reason to do so, for example to cushion disappointing earnings when her options are coming due? 2. Our method for identifying style can be employed to study other speech characteristics. For instance, do managers differ in their propensity to use positive/negative, quantitative/qualitative, or other types of statements, and what are the capital market effects, if any, of such style differences that are identified?

## References

- Allee, Kristian D., and Matthew D. DeAngelis, 2015, The structure of voluntary disclosure narratives: Evidence from tone dispersion, *Journal of Accounting Research* 53, 241–274.
- Bamber, Linda Smith, John Jiang, and Isabel Yanyan Wang, 2010, What’s my style? The influence of top managers on voluntary corporate financial disclosure., *The Accounting Review* 85, 1131–1162.
- Barker, Richard, John Hendry, John Roberts, and Paul Sanderson, 2012, Can company-fund manager meetings convey informational benefits? Exploring the rationalisation of equity investment decision making by UK fund managers, *Accounting, Organizations and Society* 37, 207–222.
- Beaver, William H., 1968, The information content of annual earnings announcements, *Journal of Accounting Research* (Supplement), 67–92.
- Bertrand, Marianne, and Antoinette Schoar, 2003, Managing with Style: The Effect of Managers on Firm Policies, *Quarterly Journal of Economics* 118, 1169–1208.
- Beyer, Anne, Daniel A. Cohen, Thomas Z. Lys, and Beverly R. Walther, 2010, The financial reporting environment: Review of the recent literature, *Journal of Accounting and Economic* 50, 296–343.
- Blau, Benjamin M., R. Jared DeLisle, and S. McKay Price, 2015, Do Sophisticated Investors Interpret Earnings Conference Call Tone Differently than Investors at Large, *Journal of Corporate Finance* 31, 203–219.
- Botosan, Christine A., 2006, Disclosure and the cost of capital: What do we know?, *Accounting and Business Research* 36, 31–40.
- Brochet, Francois, Lucile Faurel, and Sarah McVay, 2011, Manager-specific effects on earnings guidance: An analysis of top executive turnovers., *Journal of Accounting Research* 49, 1123–1162.
- Brochet, Francois, Patricia Naranjo, Gregory S. Miller, and Gwen Yu, 2017, Managers’ Cultural Background and Disclosure Attributes, *Working paper*.
- Brochet, Francois, Patricia Naranjo, and Gwen Yu, 2016, The capital market consequences of language barriers in the conference calls of non-U.S. firms, *The Accounting Review* 91, 1023–1049.

- Brockman, Paul, Xu Li, and S. McKay Price, 2015, Differences in Conference Call Tones: Managers versus Analysts, *Financial Analysts Journal* 71, 24–42.
- Brown, Lawrence D., Andrew C. Call, Michael B. Clement, and Nathan Y. Sharp, 2015, Inside the Black Box of Sell-Side Financial Analysts, *Journal of Accounting Research* 53, 1–47.
- Bushee, Brian, 2001, Do institutional investors prefer near-term earnings over long-run value?, *Contemporary Accounting Research* 18, 207–246.
- Bushee, Brian, Ian D. Gow, and Daniel J. Taylor, 2016, Linguistic Complexity in Firm Disclosures: Obfuscation or Information?, *Working Paper*.
- Bushee, Brian, and Christopher Noe, 2000, Corporate disclosure practices, institutional investors and stock return volatility, *Journal of Accounting Research* 38, 171–202.
- Cohen, Lauren, Dong Lou, and Christopher Malloy, 2013, Playing Favorites: How Firms Prevent the Revelation of Bad News, *Working paper*.
- Collins, Daniel W., Guojin Gong, and Paul Hribar, 2003, Investor Sophistication and the Mispricing of Accruals, *Review of Accounting Studies* 8, 251–276.
- Daniel, K., M. Grinblatt, S. Titman, and R. Wermers, 1997, Measuring mutual fund performance with characteristics-based benchmarks, *Journal of Finance* 52, 1035–1058.
- Davis, Angela K., Weili Ge, Dawn Matsumoto, and Jenny Li Zhang, 2015, The effect of manager-specific optimism on the tone of earnings conference calls, *Review of Accounting Studies* 20, 639–673.
- DellaVigna, Stefano, and Joshua M. Pollet, 2009, Investor Inattention and Friday Earnings Announcements, *Journal of Finance* 64, 709–749.
- Demers, Elisabeth, and Clara Vega, 2011, Linguistic Tone in Earnings Press Releases: News or Noise?, *Working Paper*.
- Dikolli, Shane S., Thomas Keusch, William J. Mayew, and Thomas D. Steffen, 2016, Using shareholder letters to measure CEO integrity, *Working Paper*.
- Druz, Marina, Ivan Petzev, Alexander Wagner, and Richard Zeckhauser, 2016, Reading Managerial Tone: How Analysts and the Market Respond to Conference Calls, *Working Paper*.
- Dyreng, Scott D., Michelle Hanlon, and Edward L. Maydew, 2010, The effects of executives on corporate tax avoidance, *The Accounting Review* 85, 1163–1189.

- Ertugrul, Mine, Jin Lei, Jiaping Qiu, and Chi Wan, 2016, Annual report readability, tone ambiguity, and the cost of borrowing, *Journal of Financial and Quantitative Analysis* forthcoming.
- Fee, C. Edward, Charles J. Hadlock, and Joshua R. Pierce, 2013, Managers with and without Style: Evidence Using Exogenous Variation., *Review of Financial Studies* 26, 567–601.
- Fields, Thomas D., Thomas Z. Lys, and Linda Vincent, 2001, Empirical research on accounting choice, *Journal of Accounting and Economics* 31, 255–307.
- Frankel, Richard M., Marilyn F. Johnson, and Douglas J. Skinner, 1999, An Empirical Examination of Conference Calls as a Voluntary Disclosure Medium, *Journal of Accounting Research* 37, 133–150.
- Ge, Weili, Dawn Matsumoto, and Jenny L. Zhang, 2011, Do CFOs Have Style? An Empirical Investigation of the Effect of Individual CFOs on Accounting Practices, *Contemporary Accounting Research* 28, 1141–1179.
- Gow, Ian D., Steven Kaplan, David E. Larcker, and Anastasia A. Zakolyukina, 2016, CEO Personality and Firm Policies, *Working paper*.
- Graham, Benjamin, and Davis Dodd, 1934, *Security Analysis*. (Whittlesey House New York and London).
- Graham, John R., Campbell R. Harvey, and Shiva Rajgopal, 2005, The economic implications of corporate financial reporting, *Journal of Accounting and Economics* 40, 3–73.
- Green, T. Clifton, Russell Jame, and Brandon Lock, 2015, It Pays to be Extraverted: Executive Personality and Career Outcomes, *Working Paper*.
- Green, T. Clifton, Russell Jame, Stanimir Markov, and Musa Subasi, 2014, Access to management and the informativeness of analyst research, *Journal of Financial Economics* 114, 239–255.
- Healy, Paul M., and Krishna G. Palepu, 2001, Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature, *Journal of Accounting and Economics* 31, 405–440.
- Henry, Elaine, and Andrew J. Leone, 2016, Measuring qualitative information in capital markets research: Comparison of alternative methodologies to measure disclosure tone, *The Accounting Review* 91, 153–178.
- Hirshleifer, David, Sonya S. Lim, and Siew Hong Teoh, 2009, Driven to Distraction: Extraneous Events and Underreaction to Earnings News, *Journal of Finance* 64, 2289–2325.

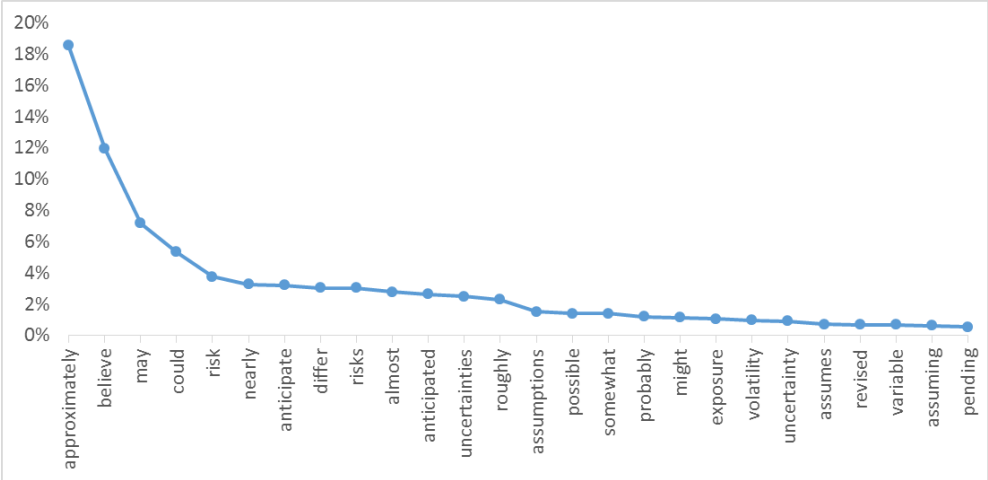


- Hollander, Stephen, Maarten Pronk, and Erik Roelofsen, 2010, Does Silence Speak? An Empirical Analysis of Disclosure Choices during Conference Calls, *Journal of Accounting Research* 48, 531–563.
- Hong, Harrison, and Jeffrey D. Kubik, 2003, Analyzing the Analysts: Career Concerns and Biased Earnings Forecasts, *Journal of Finance* 58, 313–351.
- Hwang, Byoung-Hyoun, and Hugh Hoikwang Kim, 2016, It pays to write well, *Journal of Financial Economics* forthcoming.
- Kirk, Marcus, and Stanimir Markov, 2017, Come on Over: Analyst/Investor Days as a Disclosure Medium, *The Accounting Review* forthcoming.
- Kothari, S. P., 2001, Capital markets research in accounting, *Journal of Accounting and Economics* 31, 105–231.
- Larcker, David F., and Anastasia A. Zakolyukina, 2012, Detecting Deceptive Discussions in Conference Calls, *Journal of Accounting Research* 50, 495–540.
- Lee, Joshua, 2016, Can Investors Detect Managers Lack of Spontaneity? Adherence to Pre-determined Scripts during Earnings Conference Calls, *The Accounting Review* 91, 229–250.
- Lehavy, R., Feng Li, and K. Merkeley, 2011, The effect of annual report readability on analyst following and the properties of their earnings forecasts, *The Accounting Review* 86, 1087–1115.
- Li, Feng, 2008, Annual report readability, current earnings, and earnings persistence, *Journal of Accounting and Economics* 45, 221–247.
- Loughran, Tim, and Bill McDonald, 2011, When is a Liability not a Liability? Textual Analysis, Dictionaries, and 10-Ks, *Journal of Finance* 66, 35–65.
- Loughran, Tim, and Bill McDonald, 2013, IPO first-day returns, offer price revisions, volatility, and form S-1 language, *Journal of Financial Economics* 109, 307–326.
- Loughran, Tim, and Bill McDonald, 2014, Measuring Readability in Financial Disclosures, *Journal of Finance* 69, 1643–1671.
- Loughran, Tim, and Bill McDonald, 2016, Textual Analysis in Finance and Accounting: A Survey, *Journal of Accounting Research* 54, 1187–1230.
- Mayew, William J., 2008, Evidence of Management Discrimination Among Analysts during Earnings Conference Calls, *Journal of Accounting Research* 46, 627–659.

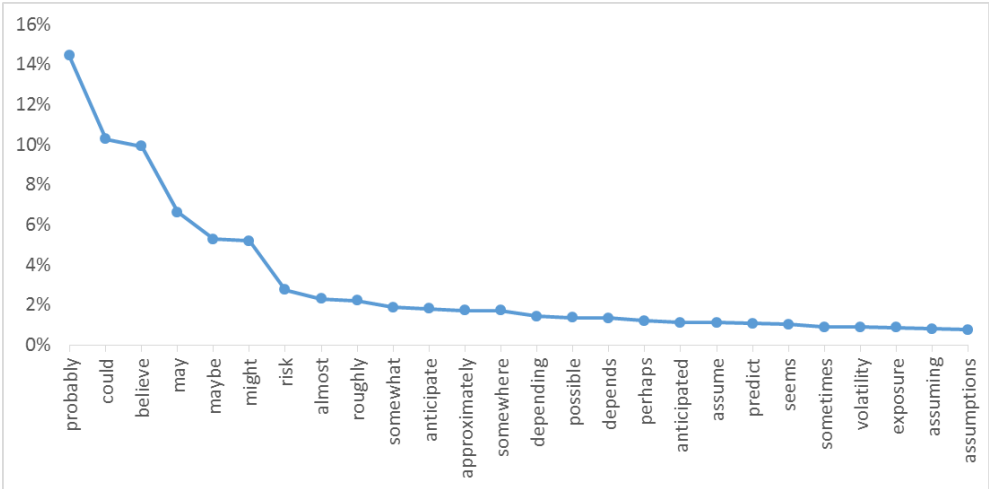
- Mayew, William J., and Mohan Venkatachalam, 2012, The Power of Voice: Managerial Affective States and Future Firm Performance, *Journal of Finance* 67, 1–43.
- Miller, B.P., 2010, The effects of reporting complexity on small and large investor trading, *The Accounting Review* 85, 2107–2143.
- Price, S. McKay, James S. Doran, David R. Peterson, and Barbara A. Bliss, 2012, Earnings conference calls and stock returns: The incremental informativeness of textual tone, *Journal of Banking and Finance* 36, 992–1011.
- Rennekamp, K., 2012, Processing fluency and investors reactions to disclosure readability, *Journal of Accounting Research* 50, 1319–1354.
- Solomon, David H., 2012, Selective publicity and stock prices, *Journal of Finance* 67, 599–638.
- Solomon, David H., and Eugene Soltes, 2015, What Are We Meeting For? The Consequences of Private Meetings with Investors, *Journal of Law and Economics* 58, 325–355.
- Soltes, Eugene, 2014, Private interaction between firm management and sell-side analysts, *Journal of Accounting Research* 52, 245–272.
- Yang, Holly I., 2012, Capital market consequences of managers’ voluntary disclosure styles, *Journal of Accounting and Economics* 53, 167–184.
- You, H., and X. Zhang, 2009, Financial reporting complexity and investor underreaction to 10-K information, *Review of Accounting Studies* 14, 559–586.
- Zhou, Dexin, 2014, The blame game, *Working Paper*.
- Zhou, Dexin, 2016, Good news in numbers, *Working Paper*.

Figure 1: Top 25 most frequently occurring uncertain words in presentations and answers

(a) Presentations



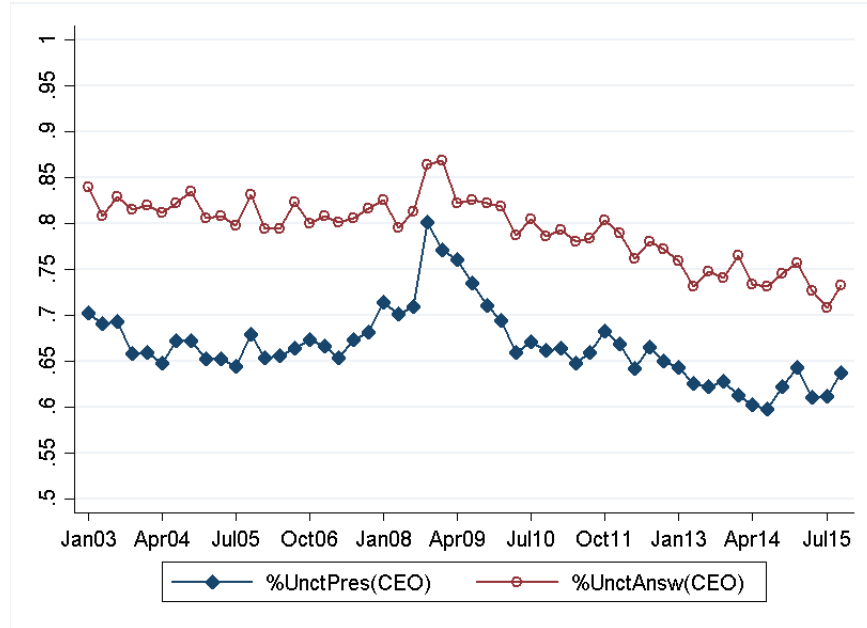
(b) Answers



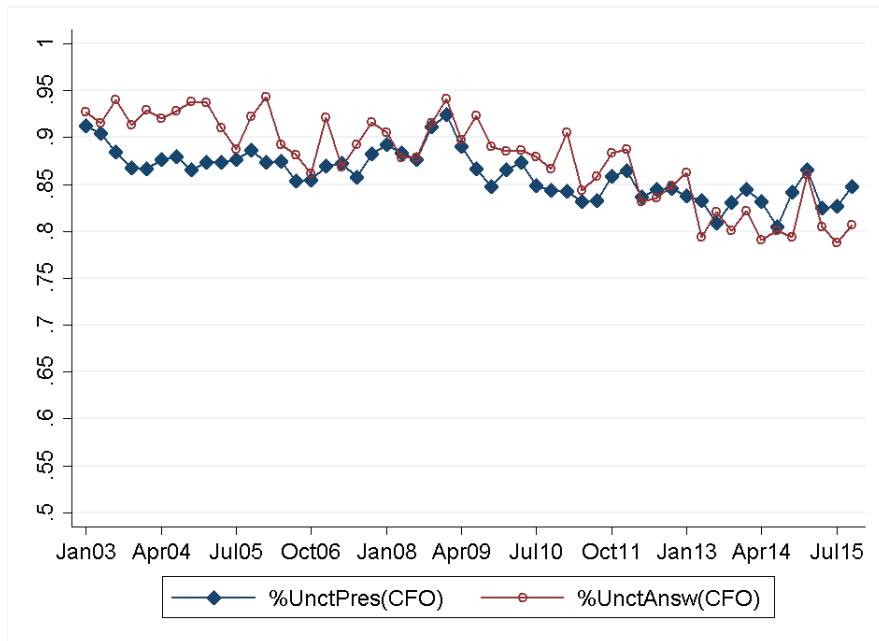
This figure plots the frequencies of the 25 most popular uncertain words occurring in conference calls in our sample. Words used in presentations are shown in Panel (a) and words used in answers are shown in Panel (b). The denominator is the count of all uncertain words across all conference call presentations or answers, respectively.

Figure 2: Frequency of uncertain words in presentations and answers over time

(a) CEOs



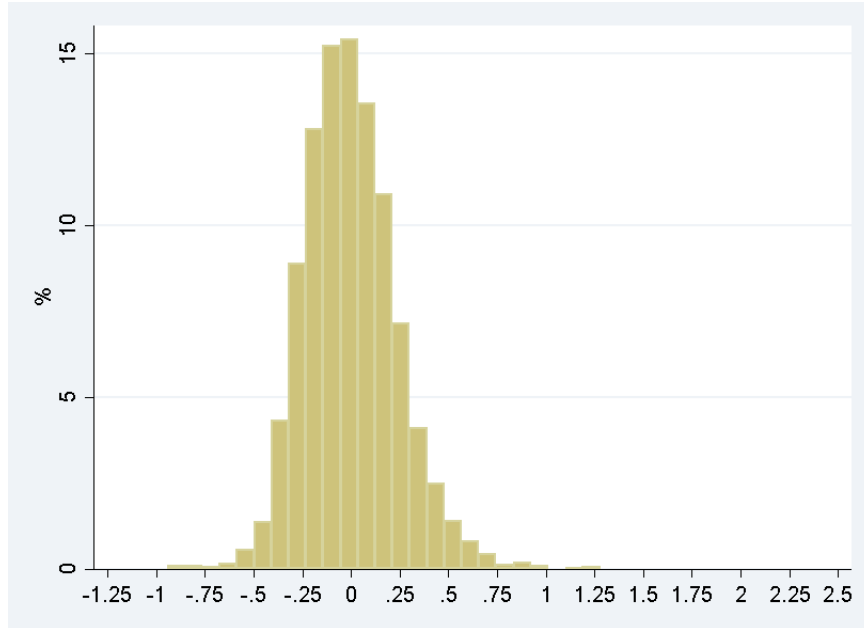
(b) CFOs



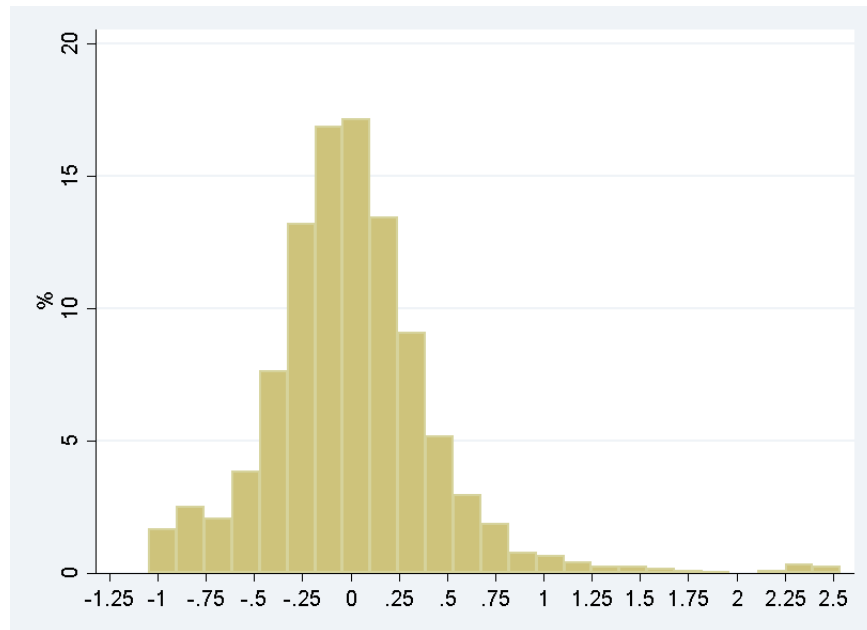
This figure plots  $\%Unct$ , the frequency of uncertain in total words spoken in conference calls over time. It shows results separately for presentations and answers. Panels (a) and (b) focus on CEOs and CFOs, respectively.

Figure 3: Distribution of manager style

(a) CEOs (N=5,982)

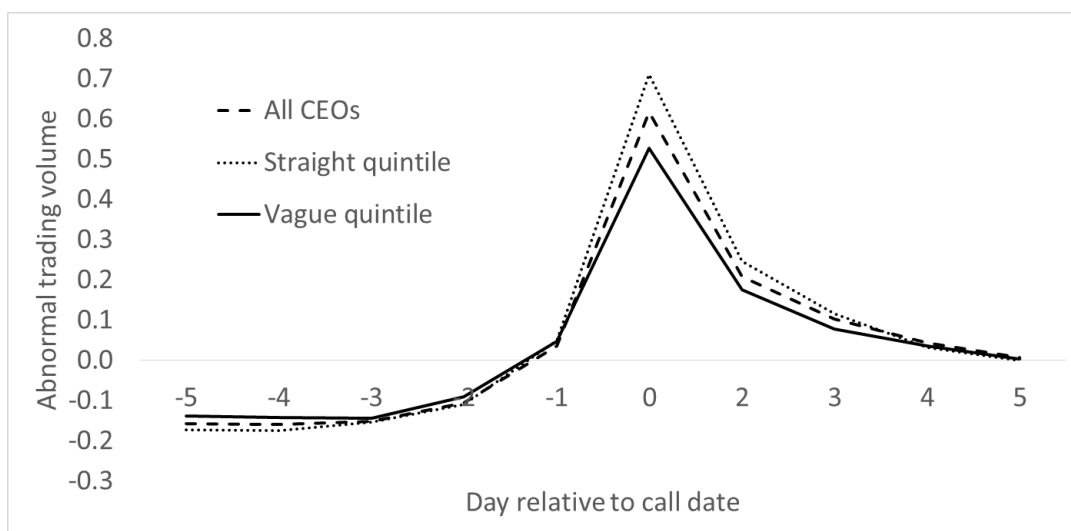


(b) CFOs (N=6,177)



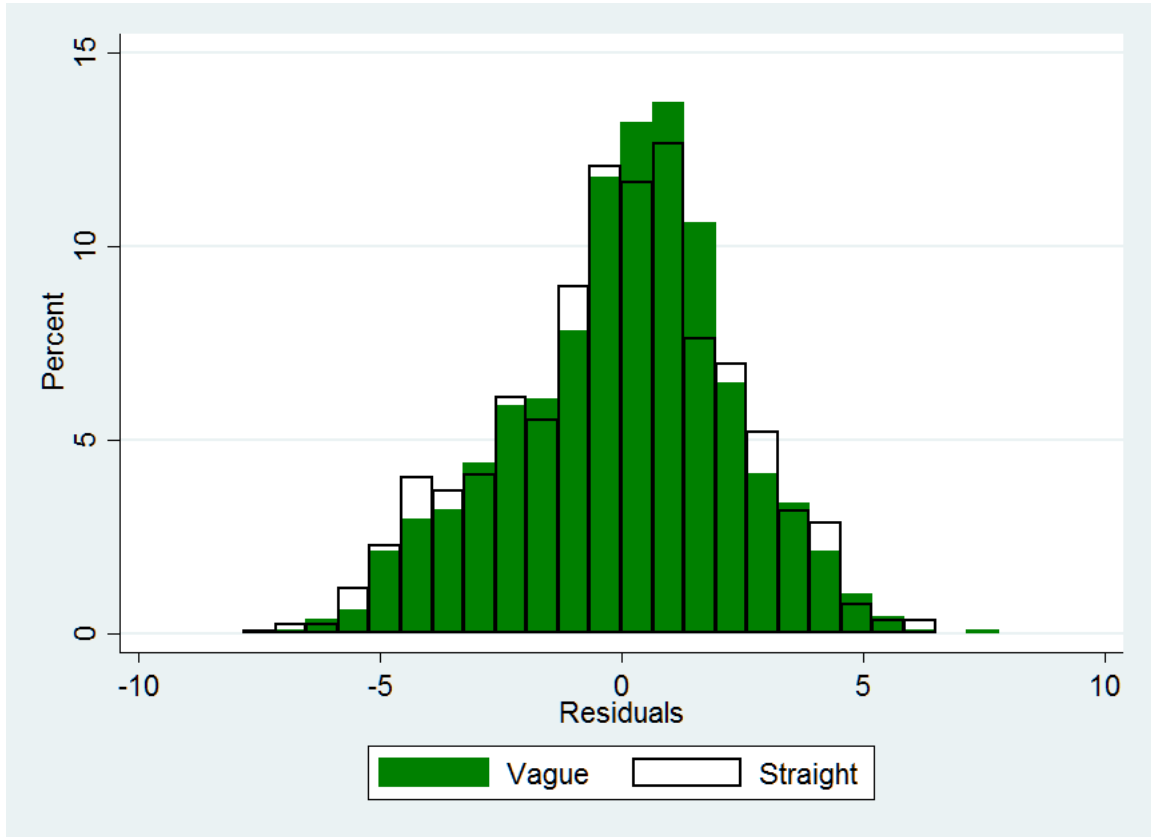
This figure shows the distribution of individual manager fixed effects estimated according to Equation 4, Section 4.3, which represent the different styles of vagueness among managers. In total, 5,982 CEOs (upper panel) and 6,177 CFOs (lower panel) are included. The range of the X-axis is aligned in Panels (a) and (b) for ease of interpretation.

Figure 4: CEO vagueness and trading around the call date



This figure illustrates the daily abnormal trading volume, taken to indicate the amount of information entering the market, around earnings calls attended by CEOs with different levels of vague style, estimated according to Equation 4. Abnormal trading volume is defined as the natural logarithm of the ratio of daily trading volume (in shares) to its daily pre-event average, calculated over a window starting 45 days and ending 6 days before each call. Since we do not know the exact timing of the call, in particular whether it occurred before or after market close, we report the average of event days 0 and 1, rather than each of them separately. The x-axis shows the corresponding average on day 0 (and, therefore, then shows day 2 next). The dashed line is the average for all CEOs. The solid (dotted) line is the average for CEOs in the top (bottom) quintile of vague style.

Figure 5: Distribution of median earnings surprise for straight- and vague-talking CEOs.



This figure presents a histogram of residuals from a cross-sectional regression of the median earnings surprise decile on various speech characteristics and control variables listed in column (3) of Table 8, except  $Vague_{CEOStyle}$ . The residuals are plotted for straight- and vague-talking CEOs separately. A CEO is considered straight-talking if her style of vagueness is in the bottom quintile of the distribution among all CEOs and vague-talking if she falls into the top quintile.

Table 1: Conference-call sample summary

	Full sample			CEO sample			CFO sample		
	N	mean	stdev	N	mean	stdev	N	mean	stdev
N calls	122,160			105,626			102,675		
N firms / Calls per firm	5,096 /	23.97	17.99	4,095 /	28.86	16.48	4,044 /	29.05	16.54
WordsCall		5,931	2,156		6,013	2,086		6,044	2,094
%UnctCall		0.844	0.263		0.846	0.258		0.843	0.257
WordsPres		2,888	1,335		2,941	1,297		2,961	1,302
%UnctPres		0.863	0.336		0.867	0.335		0.864	0.333
WordsAnsw		3,043	1,611		3,072	1,540		3,083	1,542
%UnctAnsw		0.823	0.319		0.825	0.316		0.824	0.315
N calls (CEO present)	114,290			105,626					
N CEOs / Calls per CEO	9,859 /	11.59	11.78	6,057 /	17.56	11.52			
Words <sub>CEO</sub> Pres		1,354	833.3		1,363	833.4			
%Unct <sub>CEO</sub> Pres		0.666	0.391		0.668	0.392			
%Neg <sub>CEO</sub> Pres		0.863	0.555		0.865	0.556			
%Numb <sub>CEO</sub> Pres		2.819	1.608		2.840	1.609			
Complex <sub>CEO</sub> Pres		20.61	5.469		20.64	5.403			
Words <sub>CEO</sub> Answ		1,852	1,258		1,886	1,261			
%Unct <sub>CEO</sub> Answ		0.790	0.405		0.793	0.402			
%Neg <sub>CEO</sub> Answ		0.758	0.412		0.758	0.407			
%Numb <sub>CEO</sub> Answ		1.073	0.744		1.077	0.739			
Complex <sub>CEO</sub> Answ		19.07	4.741		19.12	4.668			
N calls (CFO present)	113,071						102,675		
N CFOs / Calls per CFO	11,098 /	10.19	10.83				6,371 /	16.24	10.84
Words <sub>CFO</sub> Pres		1,134	732.1					1,153	735.9
%Unct <sub>CFO</sub> Pres		0.860	0.557					0.862	0.554
%Neg <sub>CFO</sub> Pres		0.913	0.584					0.910	0.583
%Numb <sub>CFO</sub> Pres		6.922	6.253					6.997	6.289
Complex <sub>CFO</sub> Pres		20.24	6.776					20.31	6.688
Words <sub>CFO</sub> Answ		796.5	794.2					818.9	801.3
%Unct <sub>CFO</sub> Answ		0.874	0.635					0.877	0.628
%Neg <sub>CFO</sub> Answ		0.720	0.568					0.720	0.561
%Numb <sub>CFO</sub> Answ		1.563	3.066					1.585	3.072
Complex <sub>CFO</sub> Answ		17.40	6.382					17.58	6.205
Other language variables									
AnalyWords		1,274	832.0		1,262	707.3		1,276	718.9
%UnctAnaly	118,848	1.282	0.454	103,300	1.288	0.449	100,354	1.290	0.447
%NegAnaly		1.255	0.467		1.251	0.461		1.252	0.458
%UnctEPR		1.228	0.554		1.231	0.548		1.229	0.547
Firm characteristics									
ln(Assets)		7.343	1.874		7.336	1.806		7.412	1.834
DailyVola		0.405	0.271		0.399	0.262		0.395	0.259
EPS growth (yoy)		-0.0274	1.784		-0.0245	1.772		-0.0176	1.759
Guidance		0.175	0.380		0.180	0.384		0.183	0.387
ShrTra		0.162	0.107		0.163	0.105		0.163	0.105
StockRet		2.191	20.19		2.540	19.84		2.556	19.58
SurpDec		0.852	3.162		0.881	3.123		0.906	3.101
Tobin's Q		1.947	1.339		1.947	1.334		1.942	1.327
MarketRet		0.0192	0.0838	105,626	0.0213	0.0838	102,675	0.0213	0.0839
Outcomes									
AbnVol	121,877	0.622	0.631	105,517	0.635	0.620	102,574	0.639	0.613
CAR01(%)	98,770	0.0608	7.041	86,174	0.113	7.065	84,427	0.115	7.018
ACAR01 (%)	98,770	5.217	4.730	86,174	5.251	4.728	84,427	5.205	4.708



Table 1 – continued

	Full sample			CEO sample			CFO sample		
	N	mean	stdev	N	mean	stdev	N	mean	stdev
CAR260 (%)	96,300	0.140	15.07	84,634	0.177	14.92	82,978	0.203	14.78
RevFreqPost	118,683	0.287	0.372	103,219	0.285	0.368	100,420	0.287	0.367
ShareAnalyPost	122,160	0.499	0.317	105,626	0.505	0.313	102,675	0.506	0.311

Summary statistics are presented for three samples relevant to our analysis. The full sample contains all conference calls for US public firms from 2003 to 2015, obtained from Thomson Reuters Street Events. The CEO/CFO samples reflect the data we later use to estimate CEO/CFO style. To qualify for the CEO/CFO sample, the manager must have participated (either as CEO or as CFO) in at least 5 calls during her combined tenure (possibly at more than one firm). Firm-level call characteristics are calculated for all participating company representatives combined. At the CEO/CFO level, the same statistics refer to the specific manager speaking. Detailed definitions of all variables are provided in Table A.1 of the Appendix.

Table 2: Manager vagueness and immediate earnings response: Testing Hypothesis 1

	Team vagueness				CEO	CFO	
	all (1)	all (2)	all (3)	all (4)	all (5)	all (6)	SP500 (7)
SurpDec	0.765*** (73.12)	0.763*** (72.90)	0.760*** (72.80)	1.024*** (10.60)	0.773*** (68.13)	0.817*** (61.77)	0.678*** (19.67)
%UnctCall	-0.056* (-1.93)						
%UnctCall × SurpDec	-0.034*** (-3.60)						
%UnctPres		-0.078*** (-2.73)	-0.079*** (-2.76)	-0.083*** (-2.89)	-0.054* (-1.90)	-0.062** (-2.01)	0.025 (0.37)
%UnctPres × SurpDec		-0.005 (-0.54)	-0.006 (-0.59)	0.001 (0.08)	-0.008 (-0.85)	-0.013 (-1.29)	0.005 (0.15)
%UnctAnsw		0.009 (0.36)	0.013 (0.51)	0.009 (0.33)	0.020 (0.74)	0.074*** (2.66)	0.065 (1.13)
%UnctAnsw × SurpDec		-0.025*** (-2.98)	-0.026*** (-3.10)	-0.017** (-2.06)	-0.023*** (-2.80)	-0.000 (-0.05)	-0.058*** (-2.60)
%UnctAnaly	0.024 (1.04)	0.023 (0.98)	0.023 (1.01)	0.036 (1.47)	0.024 (0.95)	0.025 (0.86)	0.036 (0.60)
%UnctAnaly × SurpDec				-0.012 (-1.46)	-0.014* (-1.70)	-0.017* (-1.87)	-0.043* (-1.83)
%NegCall	-1.746*** (-18.93)						
%NegPres		-0.967*** (-14.44)	-0.961*** (-14.33)	-0.846*** (-12.30)	-0.325*** (-10.84)	-0.107*** (-11.06)	-0.024 (-1.08)
%NegPres × SurpDec				-0.148*** (-7.32)	-0.022** (-2.44)	-0.102*** (-3.58)	-0.050 (-0.87)
%NegAnsw		-0.712*** (-8.70)	-0.731*** (-8.93)	-0.762*** (-8.98)	-0.199*** (-7.25)	0.003 (0.37)	-0.020 (-0.88)
%NegAnsw × SurpDec				0.036 (1.33)	0.009 (0.98)	-0.063 (-1.62)	-0.007 (-0.13)
%NegAnaly	-0.339*** (-13.16)	-0.340*** (-13.13)	-0.341*** (-13.16)	-0.325*** (-12.12)	-0.379*** (-13.69)	-0.440*** (-14.27)	-0.402*** (-6.48)
%NegAnaly × SurpDec				-0.019** (-2.29)	-0.028*** (-3.22)	-0.013 (-1.37)	-0.014 (-0.57)
WordsPres			-0.110*** (-3.68)	-0.094*** (-2.98)	-0.083*** (-2.62)	-0.063 (-1.62)	-0.007 (-0.13)
WordsPres × SurpDec				-0.011 (-1.04)	-0.008 (-0.81)	0.002 (0.15)	-0.028 (-1.23)
WordsAnsw			-0.153*** (-3.89)	-0.172*** (-4.09)	-0.074** (-2.02)	-0.096** (-2.23)	-0.150** (-2.51)
WordsAnsw × SurpDec				0.031** (2.03)	0.054*** (4.20)	0.018 (1.14)	0.049* (1.90)
WordsAnaly			-0.085* (-1.74)	-0.138** (-2.53)	-0.232*** (-4.47)	-0.216*** (-3.89)	-0.073 (-0.76)
WordsAnaly × SurpDec				0.071*** (3.85)	0.069*** (4.14)	0.070*** (3.95)	-0.015 (-0.36)
%NumbersPres			0.108*** (5.85)	0.091*** (4.74)	0.235*** (8.09)	0.084** (2.55)	0.074 (1.42)
%NumbersPres × SurpDec				0.015** (2.25)	-0.015 (-1.53)	0.019* (1.80)	-0.008 (-0.33)
%NumbersAnsw			-0.078** (-2.03)	-0.019 (-0.49)	-0.080*** (-2.80)	0.062** (2.07)	0.072 (1.42)

Table 2 – continued

	Team vagueness				CEO	CFO	
	all (1)	all (2)	all (3)	all (4)	all (5)	all (6)	SP500 (7)
%NumbersAnsw × SurpDec				-0.060*** (-4.51)	-0.018* (-1.89)	-0.042*** (-4.23)	-0.089*** (-4.73)
ComplexityPres			-0.013 (-1.16)	-0.009 (-0.80)	-0.045 (-0.90)	-0.045 (-0.70)	-0.051 (-0.44)
ComplexityPres × SurpDec				-0.004 (-0.97)	-0.027* (-1.65)	-0.027 (-1.25)	0.031 (0.62)
ComplexityAnsw			-0.009 (-1.18)	-0.006 (-0.73)	-0.020 (-0.61)	-0.059 (-1.58)	0.038 (0.50)
ComplexityAnsw × SurpDec				-0.003 (-1.17)	-0.016 (-1.50)	0.004 (0.28)	0.027 (0.86)
Guidance			-0.453*** (-5.89)	-0.772*** (-9.01)	-0.729*** (-8.13)	-0.724*** (-7.72)	-0.349** (-2.36)
Guidance × SurpDec				0.223*** (7.26)	0.224*** (7.24)	0.211*** (6.54)	0.230*** (3.34)
StockRet	-0.198*** (-6.64)	-0.197*** (-6.58)	-0.209*** (-6.98)	-0.213*** (-7.12)	-0.219*** (-6.93)	-0.204*** (-5.91)	-0.142 (-1.60)
EPS growth (yoy)	0.064** (2.30)	0.062** (2.26)	0.057** (2.07)	0.051* (1.84)	0.068** (2.34)	0.071** (2.25)	0.136* (1.79)
DailyVola	0.049 (1.13)	0.043 (1.00)	0.046 (1.08)	0.025 (0.59)	0.007 (0.17)	0.017 (0.36)	0.255** (2.19)
ln(Assets)	-0.061* (-1.65)	-0.054 (-1.47)	0.103** (2.50)	0.103** (2.50)	0.034 (0.78)	0.070 (1.49)	0.148* (1.81)
Tobin's Q	-0.266*** (-7.20)	-0.262*** (-7.09)	-0.213*** (-5.69)	-0.202*** (-5.41)	-0.178*** (-4.69)	-0.124*** (-3.22)	0.089 (1.26)
MarketRet	-0.044 (-1.44)	-0.044 (-1.44)	-0.044 (-1.44)	-0.042 (-1.39)	-0.046 (-1.42)	-0.038 (-1.09)	-0.141** (-2.16)
N Obs	91,528	91,528	91,528	91,528	83,751	71,093	14,953
Year f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry f.e.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.120	0.120	0.121	0.124	0.124	0.128	0.117

This table presents panel regressions of the cumulative abnormal returns (CAR) over [0:1] days relative to the call date on vagueness, the earnings surprise, and control variables. Abnormal stock returns are computed following Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW); see Section 3.2 for details. In columns (1) to (4), the measure of vagueness is the frequency on uncertain words in all words spoken jointly by management (CEOs, CFOs, and other managers) during each conference call. In the following columns, we differentiate between presentation and answers vagueness, as well as CEO and CFO vagueness. The other speech characteristics are also measured on either the management, or CEO, or CFO level, depending on the regression. The effect of vagueness on the earnings response coefficient is modeled as an interaction term with the earnings surprise. All explanatory variables are standardized (except SurpDec and Guidance) and defined in Table A.1 in the Appendix. The sample comprises all US public companies from 2003 to 2015. Column (7) uses the S&P500 companies. t-statistics shown in parentheses are based on standard errors clustered by firm in columns (2) to (4), by CEO in column (5), and by CFO in columns (6) and (7). Significance levels: \* - 10%, \*\* - 5%, \*\*\* - 1%

Table 3: Managerial turnover and the language of earnings conference calls

	Panel (a): Correlation $\rho_{OldM/NewM}$ Two different managers at the same firm			Panel (b): Correlation $\rho_{OldF/NewF}$ Same manager at two different firms		
	Control (1)	Turnover firms (2)	Difference (3)	Control (4)	Movers (5)	Difference (6)
CEOs		N= 1,578			N= 68	
%UnctEPR	0.74	0.66	-0.09 *** ( -4.80 )	0.82	0.15	0.67 *** ( 5.68 )
%Unct <sub>CEO</sub> Pres	0.65	0.46	-0.19 *** ( -7.80 )	0.61	0.22	0.39 *** ( 2.78 )
%Unct <sub>CEO</sub> Answ	0.70	0.26	-0.44 *** ( -16.86 )	0.69	0.43	0.26 *** ( 2.20 )
CFOs		N= 1,665			N= 279	
%UnctEPR	0.76	0.69	-0.07 *** ( -4.25 )	0.80	0.12	0.68 *** ( 11.60 )
%Unct <sub>CFO</sub> Pres	0.76	0.51	-0.25 *** ( -12.72 )	0.80	0.19	0.61 *** ( 10.79 )
%Unct <sub>CFO</sub> Answ	0.54	0.22	-0.32 *** ( -10.95 )	0.45	0.41	0.04 ( 0.58 )

Panel (a) shows correlations ( $\rho_{OldM/NewM}$ ) between average frequency of uncertain words in the earnings press release (EPR) as well as the presentation and answers parts, across all “turnover” firms, where we observe two different managers (CEOs or CFOs) working in succession at the same firm. *OldM* corresponds to the outgoing manager and *NewM* to the incoming one. For each “turnover” firm, a matching “control” firm from the same Fama-French 17 industry is identified, which did not experience a manager turnover. The matching is based on similarity of observation period, average assets as well as %Unct words spoken by the CEO or CFO in the presentation and answers part during the pre-turnover period. Average frequency of uncertain words for each “control” firm is calculated using the same periods that the old and new manager was in charge at the matching “turnover” firm. Only manager turnovers with at least five quarters of data available for the old and new manager are considered. Panel (b) provides a complementary analysis by following the same manager (a “mover”) from one firm to another. In this case, the correlation ( $\rho_{OldF/NewF}$ ) is calculated between the average frequency of uncertain words in the EPR, presentation and answers at the old and new firm connected by the mover. Control firms in Panel (b) are matched to the firm at which the “mover” worked in after the move. Significance testing of the differences is based on Fisher transformations of the correlation coefficients, according to:

$$z = \frac{F(\rho_1) - F(\rho_2)}{\sqrt{\frac{1}{(N_1-3)} + \frac{1}{(N_2-3)}}}$$

Significance levels: \* - 10%, \*\* - 5%, \*\*\* - 1%

Table 4: Estimating vagueness at the manager level

	CEO		CFO	
	(1)	(2)	(3)	(4)
%UnctPres	0.207*** (63.50)	0.095*** (25.08)	0.086*** (22.23)	0.059*** (10.15)
%UnctAnaly	0.054*** (19.04)	0.046*** (17.31)	0.055*** (11.42)	0.045*** (9.10)
%NegAnsw	0.108*** (32.81)	0.068*** (20.76)	0.038*** (9.73)	0.028*** (7.05)
%NegAnaly	-0.012*** (-4.17)	-0.008*** (-2.68)	-0.004 (-0.80)	-0.004 (-0.78)
SurpDec	0.003 (0.08)	0.055 (1.42)	0.013 (0.18)	0.081 (1.14)
StockRet	0.012* (1.77)	-0.010 (-1.57)	0.008 (0.72)	0.000 (0.01)
EPS growth (yoy)	0.047 (0.66)	-0.022 (-0.33)	-0.118 (-0.98)	-0.136 (-1.13)
DailyVola	0.012** (2.11)	0.026*** (4.53)	0.000 (0.00)	0.022** (2.03)
ln(Assets)	-0.004*** (-4.97)	-0.021*** (-7.11)	-0.012*** (-9.52)	-0.024*** (-4.50)
MarketRet	-0.013 (-0.80)	-0.022 (-1.47)	-0.011 (-0.38)	-0.010 (-0.35)
Nobs	94,341	94,341	87,183	87,183
Manager f.e.	No	Yes	No	Yes
R <sup>2</sup>	0.064	0.336	0.010	0.223

The dependent variable in columns (1) and (2) is the call-level vagueness in CEO answers ( $\%Unct_{CEO}Answ$ ). In columns (3) and (4) it is the call-level vagueness in CFO answers ( $\%Unct_{CFO}Answ$ ). Columns (1) and (3) are estimated using OLS, columns (2) and (4) additionally include CEO and CFO fixed effects, respectively.  $\%Unct_{MGR}Pres$  controls for vagueness in communication resulting from persistent firm characteristics (such as firm culture) and time-varying business conditions. Other explanatory variables include negativity in answers (measured separately for CEO and CFO), negativity and the frequency of uncertain words in analyst questions as well as various firm characteristics. All variables are defined in Table A.1 in the Appendix. Summary results of variants of these regressions using fewer/more/different control variables are presented in Table B.1 in the Appendix.  $t$ -statistics shown in parentheses are clustered by manager. Significance levels: \* - 10%, \*\* - 5%, \*\*\* - 1%

Table 5: CEO vagueness style and immediate earnings response: Refining Hypothesis 1

	all CEOs		turnover CEOs	
	all firms (1)	SP500 (2)	all firms (3)	SP500 (4)
SurpDec	0.785*** (66.46)	0.661*** (23.83)	0.818*** (47.89)	0.685*** (19.00)
VagueStyle	0.125*** (3.89)	0.125** (2.11)	0.175*** (3.54)	0.152* (1.80)
VagueStyle $\times$ SurpDec	-0.044*** (-4.10)	-0.086*** (-3.56)	-0.061*** (-3.90)	-0.103*** (-3.61)
VagueResid	-0.022 (-0.87)	-0.088* (-1.73)	-0.043 (-1.22)	-0.097 (-1.46)
VagueResid $\times$ SurpDec	-0.003 (-0.35)	0.029 (1.41)	-0.011 (-1.05)	0.022 (0.85)
%UnctPres	-0.079*** (-2.73)	-0.035 (-0.66)	-0.120*** (-2.69)	-0.084 (-1.09)
%UnctPres $\times$ SurpDec	0.000 (0.04)	0.026 (1.14)	0.005 (0.35)	0.017 (0.60)
%UnctAnaly	0.022 (0.84)	0.037 (0.65)	0.007 (0.18)	0.033 (0.43)
%UnctAnaly $\times$ SurpDec	-0.013 (-1.52)	-0.044** (-2.04)	-0.021* (-1.69)	-0.027 (-0.95)
N Obs	78,740	16,367	39,156	10,286
Other speech (+ int.)	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes
Industry f.e.	Yes	Yes	No	No
Firm f.e.	No	No	Yes	Yes
R <sup>2</sup>	0.126	0.119	0.112	0.107

This table presents panel regressions of the cumulative abnormal return (CAR) over [0:1] days relative to the call date on vagueness, the earnings surprise, and control variables. Columns (1) and (2) use the full sample of CEOs of all US public companies and S&P500 firms, respectively, from 2003 to 2015. Columns (3) and (4) focus on those firms, among all or from the S&P500 universe, which experienced a CEO turnover during the sample period. Abnormal stock returns are computed following Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW); see Section 3.2 for details. The effect of vagueness on the earnings response coefficient is modeled as an interaction term of *VagueStyle* with the earnings surprise (and *VagueResids* with the earnings surprise). *VagueStyle* is the CEO's style of vagueness estimated from the language of her answers to analyst questions during earnings conference calls, according to Equation 4. *VagueResids* represents the residuals from Equation 4, i.e., deviations from style. In addition to the variables shown, all regressions control, as indicated at the bottom of the table, for the same controls as Table 2, column (5). All explanatory variables are standardized (except SurpDec and Guidance) and defined in Table A.1 in the Appendix. t-statistics shown in parentheses are based on standard errors clustered by manager. Significance levels: \* - 10%, \*\* - 5%, \*\*\* - 1%.

Table 6: CEO vagueness style, immediate earnings response, and post-call drift: The role of investor base

	all firms		Low transient investor share		High transient investor share	
	CAR01 (1)	CAR260 (2)	CAR01 (3)	CAR260 (4)	CAR01 (5)	CAR260 (6)
SurpDec	0.785*** (66.46)	0.126*** (5.27)	0.786*** (37.87)	0.178*** (3.97)	0.844*** (34.00)	0.088* (1.69)
VagueStyle	0.125*** (3.89)	-0.023 (-0.30)	0.228*** (3.94)	-0.024 (-0.18)	0.051 (0.76)	-0.030 (-0.21)
VagueStyle $\times$ SurpDec	-0.044*** (-4.10)	0.010 (0.46)	-0.052*** (-2.95)	0.033 (0.77)	-0.019 (-0.83)	-0.016 (-0.35)
VagueResid	-0.022 (-0.87)	0.030 (0.50)	0.047 (1.16)	0.003 (0.03)	-0.071 (-1.18)	0.109 (0.82)
VagueResid $\times$ SurpDec	-0.003 (-0.35)	0.026 (1.28)	0.007 (0.51)	0.071** (1.96)	0.006 (0.33)	0.050 (1.12)
%UnctPres	-0.079*** (-2.73)	-0.024 (-0.35)	-0.023 (-0.45)	-0.077 (-0.63)	-0.001 (-0.02)	0.135 (0.97)
%UnctPres $\times$ SurpDec	0.000 (0.04)	-0.001 (-0.05)	0.026 (1.48)	-0.057 (-1.40)	-0.027 (-1.33)	0.024 (0.52)
%UnctAnaly	0.022 (0.84)	0.157** (2.53)	-0.008 (-0.17)	0.201* (1.86)	0.025 (0.41)	0.148 (1.07)
%UnctAnaly $\times$ SurpDec	-0.013 (-1.52)	-0.046** (-2.22)	-0.005 (-0.32)	-0.104*** (-2.82)	-0.016 (-0.82)	0.052 (1.20)
N Obs	78,740	75,953	19,567	19,567	19,853	19,853
Other speech (+ int.)	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Industry f.e.	Yes	Yes	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.126	0.00376	0.148	0.0146	0.123	0.00785

This table presents panel regressions of the cumulative abnormal return (CAR) over [0:1] days relative to the call date in columns (1), (3), and (5) as well as cumulative abnormal returns (CAR) over [2:60] days relative to the call date in columns (2), (4), and (6) on vagueness, the earnings surprise, and control variables. Columns (1) and (2) use all US public companies from 2003 to 2015. Columns (3) and (4) focus on firms with a low share of transient investors, following the classification of Bushee (2001). Lastly, columns (5) and (6) deal with firms with a high share of such investors. Investor classification data are available until 2013. Abnormal stock returns are computed following Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW); see Section 3.2 for details. The effect of vagueness on the earnings response coefficient is modeled as an interaction term of *VagueStyle* with the earnings surprise (and *VagueResids* with the earnings surprise). *VagueStyle* is the CEO's style of vagueness estimated from the language of her answers to analyst questions during earnings conference calls, according to Equation 4. *VagueResids* represents the residuals from Equation 4, i.e., deviations from style. In addition to the variables shown, all regressions control, as indicated at the bottom of the table, for the same controls as Table 2, columns (5)-(7), respectively. All explanatory variables are standardized (except SurpDec and Guidance) and defined in Table A.1 in the Appendix. t-statistics shown in parentheses are based on standard errors clustered by manager. Significance levels: \* - 10%, \*\* - 5%, \*\*\* - 1%

Table 7: CEO vagueness style and earnings informativeness: Testing Hypotheses 2 and 3

	ACAR01 (1)	AbnVol (2)	ShareAnalyPost (3)	RevFreqPost (4)
VagueStyle	-0.111*** (-4.46)	-0.012*** (-3.52)	-0.006*** (-2.78)	0.005** (2.27)
VagueResid	-0.012 (-0.77)	-0.002 (-1.13)	0.000 (0.55)	0.001 (1.21)
%UnctPres	0.018 (0.94)	0.009*** (4.14)	0.000 (0.31)	0.003** (2.19)
%UnctAnaly	0.002 (0.10)	0.005*** (2.69)	0.001 (1.08)	0.002 (1.39)
Guidance	0.212*** (3.67)	0.045*** (6.29)	0.067*** (15.79)	-0.016*** (-3.64)
SurpDecAbs	0.436*** (31.07)	0.047*** (31.83)	0.008*** (10.26)	-0.001 (-0.74)
N Obs	78,740	92,684	94,319	92,256
Other speech	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes
Industry f.e.	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.125	0.139	0.152	0.226

This table presents panel regressions. In column (1), the dependent variable is the absolute cumulative abnormal return (ACAR) over [0:1] days relative to the call date. Abnormal stock returns are computed following Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW); see Section 3.2 for details. In column (2), the dependent variable is the abnormal trading volume; see Section 5.2 for details. In column (3), the dependent variable is ShareAnalyPost, which is the share of analysts that revises their forecasts within 3 days of the conference call. In column (4), the dependent variable is post-announcement revision frequency, the number of revisions after the conference call of quarter  $t$  up to the earnings announcement of quarter  $t+1$  divided by the number of analysts. *VagueStyle* is the CEO's style of vagueness estimated from the language of her answers to analyst questions during earnings conference calls, according to Equation 4. *VagueResids* represents the residuals from Equation 4, i.e., deviations from style. In addition to the variables shown, all regressions control, as indicated at the bottom of the table, for the same controls as Table 2, column (5). (Interactions are not included in this table.) All explanatory variables are standardized (except SurpDec and Guidance) and defined in Table A.1 in the Appendix.  $t$ -statistics shown in parentheses are clustered by manager. Significance levels: \* - 10%, \*\* - 5%, \*\*\* - 1%



Table 8: Benefits of CEO vague style

	Firm-quarter		Cross-sectional	
	SurpDec (1)	SurpDecAbs (2)	MedSurpDec (3)	MedSurpDecAbs (4)
VagueStyle	0.037** (1.98)	-0.019** (-2.12)	0.076** (2.07)	-0.027** (-2.01)
VagueResid	-0.014 (-1.30)	-0.003 (-0.78)		
%UnctPres	0.021 (1.54)	0.007 (1.32)	-0.014 (-0.35)	-0.012 (-0.77)
%UnctAnaly	0.008 (0.65)	-0.013*** (-2.72)	0.057 (1.08)	-0.055*** (-2.82)
Guidance	0.445*** (12.30)	-0.233*** (-12.37)	0.387*** (13.81)	-0.157*** (-11.73)
N Obs	83,162	83,162	5,975	5,975
Other speech	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	-	-
Industry f.e.	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.0278	0.173	0.105	0.439

This table presents panel regressions in columns (1) and (2) and cross-sectional regressions in columns (3) and (4). The dependent variable in column (1) is the earnings surprise decile next quarter and in column (2) it is the absolute value of the earnings surprise decile next quarter. The dependent variable in column (3) is the median earnings surprise calculated over the tenure of each manager. The dependent variable in column (4) is the absolute value of the median earnings surprise. *VagueStyle* is the CEO's style of vagueness estimated from the language of her answers to analyst questions during earnings conference calls, according to Equation 4. All control variables are averaged over each manager's tenure. In addition to the variables shown, all regressions control, as indicated at the bottom of the table, for the same controls as Table 2, column (5). (Interactions are not included in this table.) All explanatory variables are standardized (except SurpDec and Guidance) and defined in Table A.1 in the Appendix. *t*-statistics shown in parentheses are clustered by manager in columns (1) and (2) and by Fama-French 48 industries in columns (3) and (4). Significance levels: \* - 10%, \*\* - 5%, \*\*\* - 1%

Table 9: The importance of CFO vagueness style

Panel A: Immediate earnings response, CAR01						
	all CFOs		turnover CFOs		mover CFOs	
	all firms (1)	SP500 (2)	all firms (3)	SP500 (4)	all firms (5)	SP500 (6)
SurpDec	0.821*** (60.51)	0.693*** (19.19)	0.861*** (43.94)	0.703*** (17.13)	0.892*** (23.55)	0.736*** (9.11)
VagueStyle	0.003 (0.08)	0.148* (1.94)	0.036 (0.66)	0.196* (1.80)	0.137 (1.20)	0.605*** (2.86)
VagueStyle × SurpDec	-0.002 (-0.21)	-0.076*** (-2.66)	-0.016 (-0.83)	-0.119*** (-3.34)	-0.091** (-2.39)	-0.241*** (-3.29)
VagueResid	0.094*** (3.39)	0.079 (1.45)	0.107*** (2.78)	0.050 (0.75)	0.069 (0.80)	0.009 (0.06)
VagueResid × SurpDec	-0.003 (-0.38)	-0.047** (-2.24)	-0.020 (-1.56)	-0.059** (-2.27)	0.002 (0.06)	-0.122** (-2.30)
N Obs	67,689	14,250	34,617	10,449	9,554	3,207
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Industry f.e.	Yes	Yes	No	No	No	No
Firm f.e.	No	No	Yes	Yes	Yes	Yes
R <sup>2</sup>	0.128	0.118	0.0850	0.0797	0.0984	0.0880

Panel B: Informativeness and earnings surprises, all CFOs, all firms						
	ACAR01 (7)	AbnVol (8)	ShareAnalyPost (9)	RevFreqPost (10)	SurpDec (11)	SurpDecAbs (12)
VagueStyle	-0.087*** (-3.42)	-0.014*** (-4.54)	-0.004** (-2.39)	0.003 (1.50)	0.015 (0.80)	-0.018** (-2.13)
VagueResid	-0.024 (-1.37)	-0.000 (-0.03)	-0.001 (-0.69)	0.001 (0.54)	-0.002 (-0.19)	0.007 (1.57)
SurpDecAbs	0.439*** (28.92)	0.048*** (30.73)	0.008*** (9.18)	-0.000 (-0.15)		
N Obs	67,689	79,117	80,469	78,818	71,041	71,041
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Industry f.e.	Yes	Yes	Yes	Yes	Yes	Yes
Firm f.e.	No	No	No	No	No	No
R <sup>2</sup>	0.124	0.141	0.159	0.205	0.0289	0.182

This table presents panel regressions focusing on CFOs. *VagueStyle* is now the CFO's style of vagueness estimated from the language of her answers to analyst questions during earnings conference calls, according to Equation 4. *VagueResids* represents the residuals from Equation 4, i.e., deviations from style. The dependent variable in columns (1) - (6) is the abnormal return (CAR) over [0:1] days relative to the call date. Abnormal stock returns are computed following Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW); see Section 3.2 for details. Columns (1) and (2) use the full sample of CFOs of all US public companies or S&P500 firms, respectively, from 2003 to 2015. Columns (3) and (4) focus on those firms, which experienced a CFO turnover during the sample period. Columns (5) and (6) deal with instances, in which the CFO of one firm moves to another firm (within the full universe or just S&P500 firms), which is equivalent to the approach in Bertrand and Schoar (2003). Columns (7) - (12) use the full sample of CFOs of all US public companies. In columns (7) - (10), the dependent variables are the same as in Table 7. In columns (11) and (12) the dependent variable is the earnings surprise decile and the absolute value of the earnings surprise decile, respectively. In addition to the variables shown, all regressions control for the same controls as Table 2, column (6). (Interactions are included in columns (1) - (6) only.) All explanatory variables are standardized (except SurpDec and Guidance) and defined in Table A.1 in the Appendix. *t*-statistics shown in parentheses are clustered by manager. Significance levels: \* - 10%, \*\* - 5%, \*\*\* - 1%

# A Appendix

Table A.1: Definitions of variables

---

<b>Outcome variables (sorted alphabetically)</b>	
AbnVol	Abnormal trading volume measured as the log ratio of trading volume over [0:1] days relative to the call divided by (two times) the average daily trading volume over the 40 day-period ending 5 days before the call
(A)CAR01	(Absolute) Cumulative Abnormal Return over [0:1] days relative to the call. Abnormal stock returns are computed following Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW); see Section 3.2 for details
CAR260	Cumulative Abnormal Return over [2:60] days relative to the call. Abnormal stock returns are computed following Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW); see Section 3.2 for details.
MedSurpDec(Abs)	Median value of SurpDec calculated over each manager’s tenure. MedSurpDecAbs is the absolute value of MedSurpDec.
SurpDec(Abs)	Deciles of percentage earnings surprise, which is itself the difference between actual and consensus forecast earnings, divided by the share price 5 trading days before the announcement in quarter $t$ , multiplied by 100. Specifically, SurpDec is obtained by grouping firms into five equally sized bins of positive surprise (numbered from 5 to 1, from largest positive to smallest positive surprise), then 0 for zero surprises, and then five equally sized bins of negative surprise from -1 (for the smallest negative surprises) through -5 (for the largest negative surprises). SurpDecAbs is the absolute value of SurpDec.
RevFreqPost	Post-announcement revision frequency, number of revisions after the conference call of quarter $t$ up to the earnings announcement of quarter $t+1$ , divided by the number of analysts.
ShareAnalyPost	The share of analysts that revises their forecasts within 3 days of the conference call
<b>Style variables</b>	
Vague <sub>MGR</sub> Style	Manager’s style of vagueness, that is her fixed effect in the percentage of uncertain words she used when answering questions from analysts. Estimated according to Equation 4 for all CEOs and CFOs
Vague <sub>MGR</sub> Resids	Unusual vagueness of manager’s answers. Represents incidental, quarter-specific deviations from manager style of vagueness
<b>Other variables (sorted alphabetically)</b>	
ln(Assets)	The natural logarithm of total assets
Complexity <sub>MGR</sub> Pres	The average length of sentences spoken by the manager during the presentation part of the call. Calculated separately for the CEO and CFO
Complexity <sub>MGR</sub> Answ	The average length of sentences spoken by the manager when answering questions from analysts. Calculated separately for the CEO and CFO
DailyVola	Daily stock volatility computed from daily returns
EPS growth	The fraction by which earnings in a quarter exceed earnings in the same quarter in the prior year
Guidance	A binary indicator equal to one if a company provided earnings guidance for a given quarter, and zero otherwise

---

Table A.1: Definitions of variables (cont.)

---

<b>Other variables cont.</b>	
MarketRet	The value-weighted market return for the period starting 5 days after an earnings announcement for the quarter t-1 and ending 5 days prior to the earnings announcement for the quarter t
%Neg <sub>MGR</sub> Pres	The percentage of negative words in all words spoken by the manager during the presentation part of the call. Calculated separately for the CEO and CFO
%Neg <sub>MGR</sub> Answ	The percentage of negative words in all words spoken by the manager when answering questions from analysts. Calculated separately for the CEO and CFO
%NegAnaly	The percentage of negative words in questions from analysts
%Numbers <sub>MGR</sub> Pres	The number of numbers per 100 words mentioned by the manager during the presentation part of the call. Calculated separately for the CEO and CFO.
%Numbers <sub>MGR</sub> Answ	The number of numbers per 100 words mentioned by the manager when answering questions from analysts. Calculated separately for the CEO and CFO.
StockRet	Stock return (in percent) in quarter t, that is the difference between the share price 5 days before the earnings announcement for quarter t and the share price 5 days after the earnings announcement for quarter t-1, divided by the stock price 5 days after the earnings announcement for quarter t-1, multiplied by 100
Transient share	The ratio of shares owned by transient investors, defined as in Bushee (2001), to total share outstanding
%Unct <sub>MGR</sub> Pres	The percentage of uncertain words in all words spoken by the manager during the presentation part of the call. Calculated separately for the CEO and CFO
%Unct <sub>MGR</sub> Answ	The percentage of uncertain words in all words spoken by the manager when answering questions from analysts. Calculated separately for the CEO and CFO
%UnctAnaly	The percentage of uncertain words in questions from analysts
%UnctEPR	The percentage of uncertain words in the earnings press release
%Words <sub>MGR</sub> Pres	Total number of words spoken by the manager during the presentation part of the call. Calculated separately for the CEO and CFO
%Words <sub>MGR</sub> Answ	Total number of words spoken by the manager when answering questions from analysts. Calculated separately for the CEO and CFO
%WordsAnaly	Total number of words in questions from analysts

---

## B Internet Appendix

In Figure B.1, we plot  $\%Unct_{MGR}Answ$  (Y-axis) versus  $\%Unct_{MGR}Pres$  (X-axis) for all CEOs and CFOs of S&P500 firms who have attended at least 5 calls (and so MGR is either CEO or CFO).

There is considerable variation along both dimensions but certain clusters can be discerned. Focusing on CEOs in Panel (a), the triangles, indicating Van Honeycutt of Computer Sciences Corp (CSC), lie almost completely above the stars, which represent Gary Butler of Automatic Data Processing (AUD), both technology companies. By contrast, the stars and triangles appear quite well aligned along the X-axis. Taken together, this means that Van Honeycutt consistently uses *more* uncertain words when answering analyst questions than Gary Butler, despite the fact that these two CEOs employ a *similar* number of uncertain words in the presentation parts of their conference calls. Such similarity might be expected in the case of two companies in the same industry. Applying a Wilcoxon rank sum test, we can confirm that Van Honeycutt's  $\%UnctAnsw$  is significantly higher than Gary Butler's, while there is no significant difference in  $\%UnctPres$ .

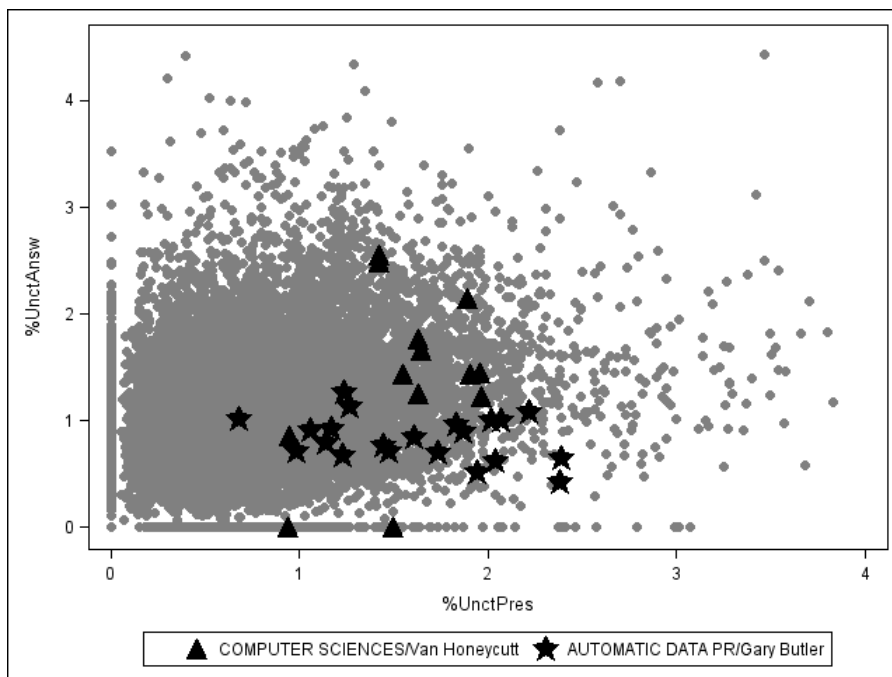
Similar insights emerge from Panel (b), where we highlight CFOs of two healthcare companies. Again,  $\%UnctPres$  lies in a similar range for both but one CFO (Edward Stiften of Express Scripts Holdings) delivers consistently more vague answers than the other (David Elkins of Becton Dickinson). Here too, the difference in  $\%UnctAnsw$  is statistically significant, while  $\%UnctPres$  are indistinguishable.

Finally, it is interesting to observe that the points we highlight in Panel (a) are more dispersed along the X-axis and lie almost completely to the right of those in Panel (b). To the extent that technology companies typically face greater uncertainties, hence greater earnings fluctuations, than companies in the healthcare sector, this suggests that  $\%UnctPres$  captures both systematic differences *across* firms as well as time-variation in business conditions *within* firms.

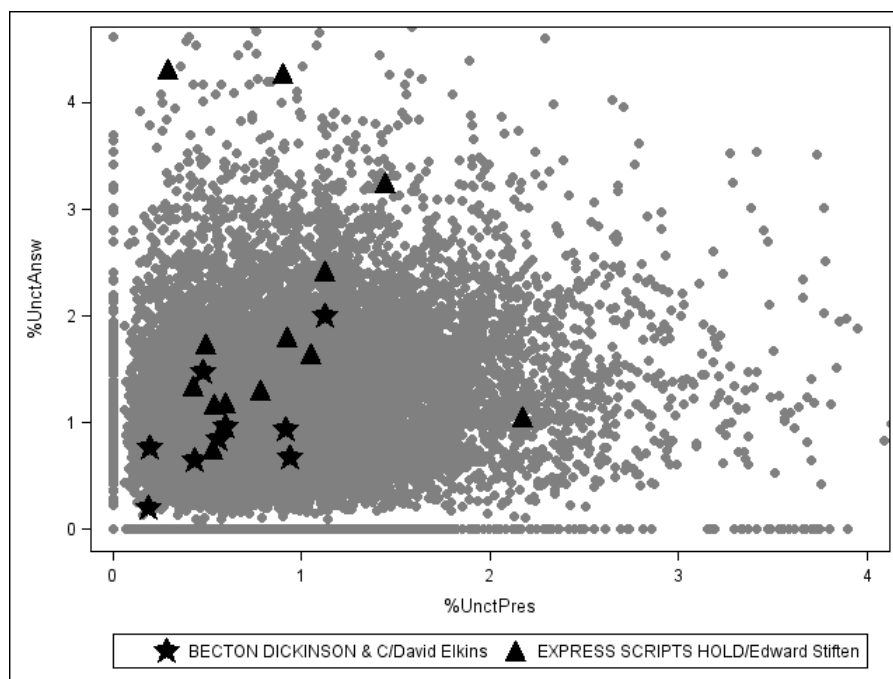
These examples illustrate that the language of answers is far from a mere reflection of the presentation part. They suggest that treating the two independently may provide additional insights.

Figure B.1: Distribution of the frequency of uncertain words in manager presentations and answers in S&P500 firms

(a) CEOs (N=1,087; NCalls=24,518)



(b) CFOs (N=1,215; NCalls=26,308)

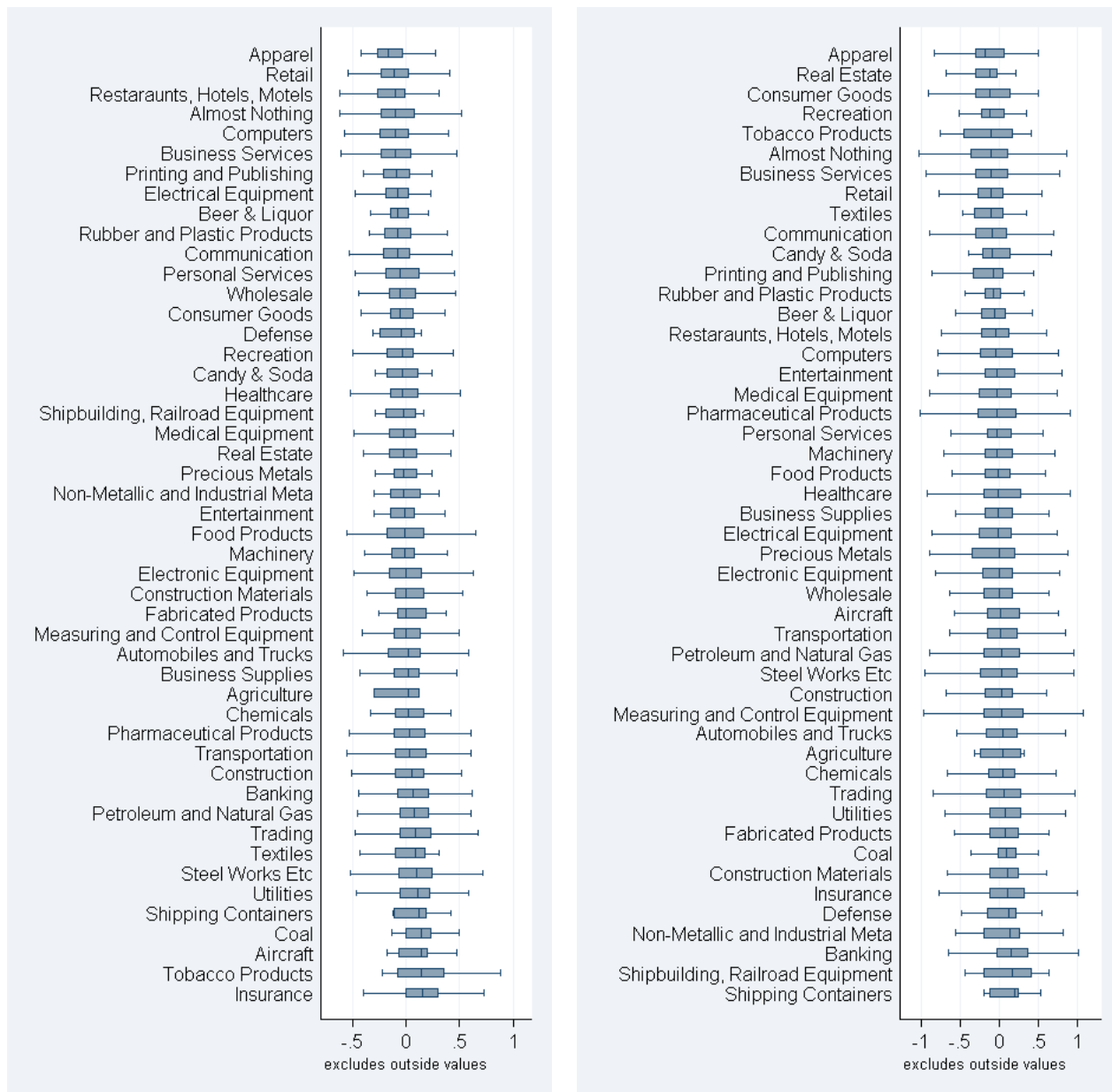


This figure plots  $\%Unct_{MGRAnsw}$  versus  $\%Unct_{MGRPres}$  for all CEOs, in Panel (a), and CFOs, in Panel (b), of S&P500 firms, who have attended at least 5 calls between 2003 and 2015. In total, 24,518 calls involving 1,087 distinct CEOs and 26,308 calls involving 1,215 distinct CFOs are depicted.

Figure B.2: Manager style across industries

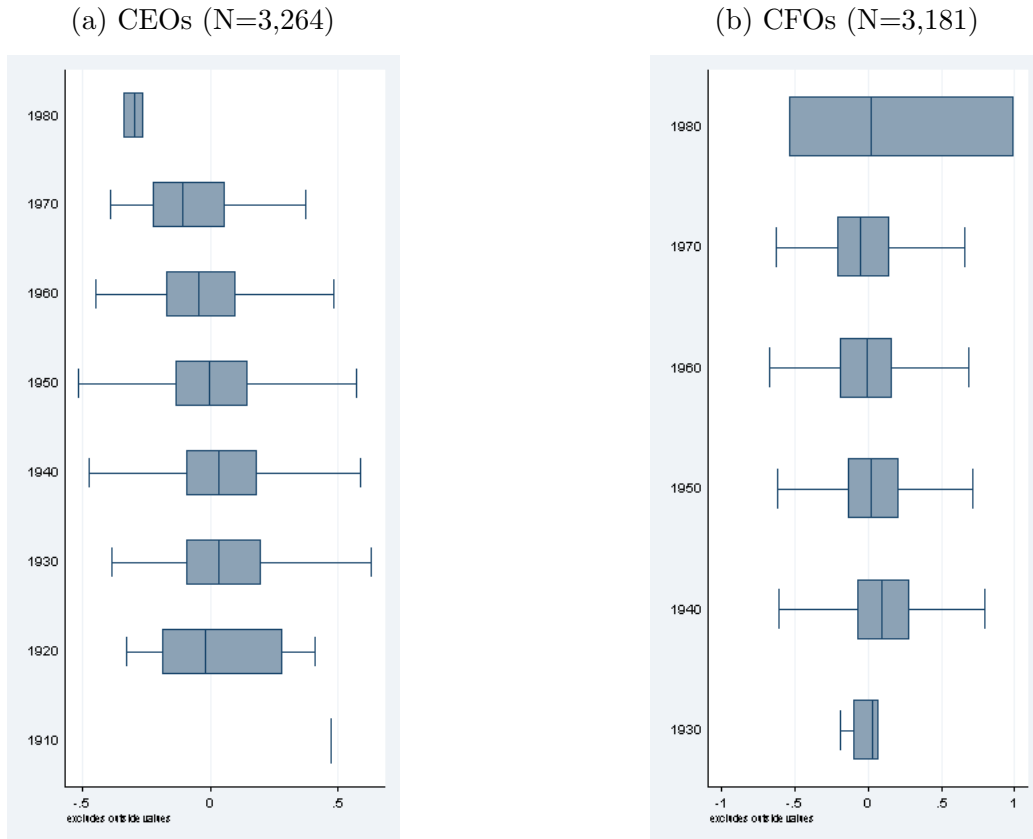
(a) CEOs (N=5,982)

(b) CFOs (N=6,177)



This figure shows horizontal box plots of the distribution of manager style of vagueness (estimated according to Equation 4, Section 4.3), within each of the Fama-French 48 industries. The box shows interquartile range (25-75) with median highlighted, while the tips of the whiskers are set at 1.5 times the interquartile range (values outside these bounds are excluded). Industries are sorted according to the median style, with the least vague shown on top. In total, 5,982 CEOs (left panel) and 6,177 CFOs (right panel) are included.

Figure B.3: Manager style across age cohorts



This figure shows horizontal box plots of the distribution of manager style of vagueness (estimated according to Equation 4, Section 4.3), within different age cohorts, defined by the decade of birth. The sample is limited to managers for whom we can obtain age from Execucomp. The box shows interquartile range (25-75) with median highlighted, while the tips of the whiskers are set at 1.5 times the interquartile range (values outside these bounds are excluded). In total, 3,264 CEOs (left panel) and 3,181 CFOs (right panel) are included.



Table B.1: Comparison of different CEO style estimation approaches

	Correlation with (3)
(1) %Unct <sub>CEO</sub> Pres only	0.97
(2) %Unct <sub>CEO</sub> Pres + Firm characteristics	0.99
(3) Baseline (Eq. 4)	1
(4) Baseline + %Neg <sub>CEO</sub> Pres	0.98
(5) Baseline + %Unct <sub>CFO</sub>	0.95
(6) Baseline + %Unct <sub>CFO</sub> + %UnctEPR	0.94
(7) Baseline + %Unct <sub>CFO</sub> + %UnctEPR + DispPreCall	0.88
(8) Baseline + %Unct <sub>CFO</sub> + %UnctEPR + DispPreCall + Δ%Unct <sub>CEO</sub> Pres	0.92

In this table we compare the individual CEO fixed effects obtained under various specifications, including the baseline specification from Eq. 4. The dependent variable in each specification is %Unct<sub>CEO</sub>Answ, the frequency of uncertain words used by the CEO when answering questions from analysts. The first column lists control variables used in each specification. %Unct<sub>CFO</sub> refers to the frequency of uncertain words in CFO presentations and answers, measured separately. Δ%Unct<sub>CEO</sub>Pres is the change in the frequency of uncertain words in CEO presentations from the previous quarter to the current one. The second column presents correlations between fixed effects obtained from the baseline specification (3) and each of the alternative specifications.