Tips and Tells from Managers: Reading Between the Lines of Conference Calls

Marina Druz, Alexander F. Wagner and Richard J. Zeckhauser *

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Abstract

Managers are thought to possess important insider information. Thus, investors attend not only to the factual information managers announce, but also to how they convey it. The short-term market returns after earnings announcements have been shown to depend heavily on managers' choice of words. We investigate whether this market behavior is rational, and whether an analysis of a manager's choice of words can provide rewarding information about future company fundamentals. We collect data from conference calls, which are less formalized than written earnings press releases, to see whether gleanings from managers' words do reveal information. Our analysis has three parts. First, we study how past results influence the manager's choice of words on conference calls. We find that positive earnings surprises, stock returns and changes in earnings reduce the use of negative tone. We also investigate evasive tactics. For example, differences in the prepared and the improvised parts of managers' speech might signal uncertainty or insincerity. We observe greater use of such evasive maneuvers ("paltering") when poor results must be presented. Second, we document that negativity and paltering tactics are associated with higher variability of analyst forecasts, with more revisions, and with slower responses of analyst recommendations to the conference call. Investors react more cautiously to earnings surprises when managerial tone is negative or inconsistent. Third, we examine the implications of negativity in a manager's words beyond that explained by past performance. It proves to predict the future earnings of the company. Moreover, analysts' forecasts do not take this into account sufficiently. We also show that as early as four quarters before a company's bankruptcy, its managers' verbal negativity increases significantly relative to surviving companies, even after controlling for the company's accounting performance.

* Druz: marinadruz@gmail.com. Wagner: Swiss Finance Institute -- University of Zurich; Harvard University; CEPR, and ECGI. Address: University of Zurich, Department of Banking and Finance, Plattenstrasse 14, CH-8032 Zurich, Switzerland. Email: alexander.wagner@bf.uzh.ch. Zeckhauser: Harvard University. Address: Harvard Kennedy School, 79 JFK Street, Cambridge, MA 02139, USA. Email: richard_zeckhauser@harvard.edu. We thank the Swiss Finance Institute, the NCCR FINRISK and the UZH Research Priority Program Finance and Financial Markets for support. We thank Jacob Boudoukh, François Degeorge, Rajna Gibson, Rossen Valkanov, and seminar participants at the SFI Research Day, Boston University, the ETH Zurich, and Maastricht University for comments. Ivan Petzev has provided outstanding research assistance.

1 Introduction

The managers of companies commit to host quarterly-earnings-announcement conference calls independently of their company's performance and of their desire to talk to the public. A typical conference call discusses the past, previews the future, and answers analysts' questions. The goal of the managers, it is usually asserted, is to present their company's results in the way that is most beneficial to the company's value. It would be natural to expect that managers would try to persuade analysts and investors that their company had a bright future. However, they do not want to set unrealistic expectations; the market severely penalizes companies that fall short. Equally important, managers cannot significantly misrepresent the truth in a way that would risk expensive litigation and reputational damage. Their concern about the long-term consequences of statements that turn out to be baseless causes managers to be more negative in their statements than they might like to be, and to add a shade of uncertainty to their positive statements.

In the light of these considerations, this paper has three goals: first, to study how a company's past performance influences the manager's speech; second, to examine the stock market reaction to the manager's speech; and third, to investigate the effect of manager's speech on analysts' reactions as well as to see whether analysts incorporate managers' "tips" and "tells" in their forecasts and whether the manager's words that are not explained by the past might help to predict the future.

First, we document that the recent economic performance of a company (and the economic climate more generally) predict the degree of negativity in a manager's speech. We also show that managers appear to use evasive tactics in predictable ways. To illustrate this novel result, the tone of their presentations differs markedly from the tone of answers when the economic performance is poor, and they tend to talk about the present and future only when they have

something positive to say. We interpret the latter findings as evidence of a strategy of paltering, that is, seeking to mislead without stepping beyond the boundary of misstatement.[1]

Second, we document that the immediate stock return reaction to the conference call is associated with the tone as well as with the degree of evasive maneuvers. Moreover, investors react more cautiously to earnings surprises when managerial tone is negative or inconsistent between presentations and answers.

We then investigate whether managerial speech is associated with risk and future cash flows in ways consistent with this stock market reaction.

In particular, third, we investigate the effect of managerial communication on analysts' reactions. We show that the variance of forecasts and the number of forecast revisions is higher, and the reaction of analysts is slower, when managerial tone is more negative (which may indicate uncertainty), and when managers use evasive tactics. Thus, managerial tone and paltering does appear to confuse analysts, the individuals who serve as the financial community's messengers on company performance.

Moreover, we study whether "excessive" negativity can help to predict future operating performance and cash flows. The idea here is that managers' choice of words is determined by all the information they have. This includes information about the past, most of which either already has been disclosed or soon will be, as well as insider information or, more accurately, the managers' expectations for the future, which they are not obliged to and often wish not to disclose. Therefore, the choice of words during a conference call cannot be fully explained by the quantitative information describing the past quarter's performance, as indicated by expected and

[1] The American Heritage Dictionary defines paltering as acting misleadingly or insincerely. Other dictionaries talk about deliberate ambiguity and withholding information. For a more detailed description of different paltering practices and discussion on existing and potential ways to control them see Schauer and Zeckhauser (2009).

unexpected earnings, firm and market stock returns, etc. Importantly, word choice is influenced also by the mood of the managers, their expectations for the future, and internal information they might wish to reveal or conceal. As an analogy with the game of poker, we refer to "tips" as purposefully revealed information and "tells," which are not purposeful. Consistent with the stock market reaction, we find that negative elements in managers' speech, which are not justified by previous performance, are associated with significantly lower future earnings.

Taking these results together, we conclude that managerial tone is associated with stock returns because it is associated with both cash flows (as seen in the results on future earnings) as well as discount rates (driven by risks, as seen in the results on analyst uncertainty).

Strikingly, we also find that financial analysts fail to fully capture this "soft" information in their forecasts. They make forecasts that exceed actual earnings for companies whose managers speak negatively beyond past results.

Finally, can the words of managers provide refined estimates even of salient events in a firm's future, apart from earnings? We use the natural experiment of the 2007-2009 financial turmoil – with its substantial toll of bankruptcies – to study how the prospect of an imminent bankruptcy influences the manager's word choice. We find that the threat of bankruptcy significantly impacts the managerial tone (level of optimism or pessimism). Two to four quarters before a company's bankruptcy, a manager's tone becomes significantly more negative than the company's historical performance would justify. We find that adding variables quantifying a manager's tone and degree of uncertainty in his speech enhances the ability of classical bankruptcy models that are based solely on financial ratios.

Our study differs from, and is complementary to, existing textual-analysis studies of management-expressed news in several ways.

First, we use conference call transcripts. Most previous textual-analysis studies (see Li (2011)

for a survey) focus on management-produced 10-K filings and corporate annual reports (Li 2008, 2010; Loughran and McDonald 2011; Li, Lundholm and Minnis 2013; Loughran and McDonald 2013), press releases accompanying earnings announcements (Demers and Vega 2010; Davis, Piger and Sedor 2012), and on media news content about companies (Ober, Zhao, Davis and Alexander 1999; Tetlock 2007; Tetlock, Saar-Tsechansky and Macskassy 2008; Engelberg 2009).

Conference call transcripts, though similar in content to earnings press releases, are less formal. Conference calls are less prepared, and include an improvised section when managers respond to questions. This enables us to examine how the content of improvised speech differs from the content of a carefully prepared document or formal speech. To draw an analogy, we are learning what a witness in a trial might say under cross examination, as opposed to in response to the prepared questions of his lawyer. In effect, we are looking for the equivalent of poker tells, information that gets revealed contrary to the manager's wishes.

Second, our analysis adds to the literature on conference calls. Matsumoto, Pronk, and Roelofsen (2011) examine intra-day stock returns during conference calls to establish that the calls have information content. Price, Doran, Peterson and Bliss (2012) document that conference call tone is a significant predictor of abnormal returns after the earnings conference call, and Mayew and Venkatachalam (2012), applying vocal-emotion-analysis software to audio recordings, find that managers' displays of positive and negative affect are respectively positively and negatively related to contemporaneous stock returns and to future unexpected earnings. Relative to these papers, besides building on a much larger sample, our contribution is that we first provide an analysis of the determinants of managerial tone. We are able to document asymmetries in the ability of abnormal negativity and positivity to explain future real performance of the company. Moreover, we analyze the determinants of evasive speech patterns

and the predictive powers of these patterns. We obtain novel results in terms of stock return reactions. Finally, the analysis of bankruptcy predictability is also a novel contribution.

Other studies look at the relation of conference calls to shortselling (Blau, DeLisle and Price 2012), how the tone shifts with the time of day (Chen, Demers and Lev 2012), how companies call on bullish analysts to affect the choreography of calls (Cohen, Lou and Malloy 2013), at the role of the communication pattern in the management team, for example, how much the CEO talks (Li, Minnis, Nagar and Rajan 2013), whether the use of certain words suggests deception as later revealed by fraud (Larcker and Zakolyukina 2012) or whether vocal dissonance markers help predict the likelihood of accounting restatements (Hobson, Mayew and Venkatachalam 2012). The foci of all these papers are quite different from the foci of our study.

Third, we avoid using generic dictionaries such as Diction or General Inquirer, which misrepresent the tone of financial news (Loughran and McDonald 2011). Instead we construct our own checklists, assigning the non-neutral words most frequently used in conference calls to positive or negative categories based on their use in the conference calls. For a robustness check, we use the Loughran and McDonald (2011) list.

The rest of this paper is organized as follows. In Section 2, we describe our data. In Section 3, we examine how quarterly performance influences a manager's negativity, and his use of ploys to obfuscate what is said. In Section 4, we consider stock returns. In Section 5, we study analyst reactions. In Section 6, we investigate whether the managers' word choice provides insight into future earnings, and whether financial analysts successfully integrate this information into their forecasts. In Section 7, we see how a manager's word choice can help us to recognize prospects for imminent bankruptcy. Section 8 contains the robustness analysis and additional results. Section 9 summarizes and concludes.

2 Data and methods

2.1 Sample

Our main analysis is based on the S&P 500 companies appearing in the index as of 01.03.2007. Our sample includes earnings announcements for the period from 2004 to 2009. Thomson Reuters has transcripts for 451 companies of the S&P 500 list for this time period.

2.2 Textual analysis

2.2.1 Tone

We tabulated the list of the most frequently used words in conference calls, and then classified those that were 1) positive, 2) negative, and 3) words indicating uncertainty. (Thus we steered clear of using generic software.[2]) The complete list of chosen words, arranged by their frequency, in shown in these three groups in Table 1.

TABLE 1 ABOUT HERE

To test whether our word choice method was robust, we use the alternative word lists compiled by Loughran and McDonald (2011). These lists comprise the Harvard IV GI lists, adjusted for financial terminology. This classification contains 2,337 negative, 353 positive, and 285 uncertain words. Starting with the three most common words here are some examples of words in the Loughran and McDonald classification (referred to also in this paper as the "extensive classification"): negative - abandon, bridge, caution; positive - able, beautiful,

[2] Loughran and McDonald (2011) show how the Harvard Dictionary, the basis for generic textual-analysis software, misclassifies words in financial contexts (for example, "liability" or "taxes").

charitable; uncertain - abeyance, clarification, depend.

Tetlock, Saar-Tsechansky and Macskassy (2008) express a concern that positive word counts do not properly reflect the attitude of the speaker because such words are frequently negated. Accordingly, we correct for negation, by excluding a positive word from the count when one of three negation words (no, not, none) occurs among the three words preceding the positive word.

To measure tone, we calculate the ratio of the number of negative words to the number of positive words a manager or analyst of company *j* uses in the conference call at time *t*. We label this ratio *Negativity:*

$$Negativity_{jt} = \frac{Negative\ words_{jt}}{Positive\ words_{jt}} \qquad (1)$$

As an alternative, we also use

$$Negativity_{jt} = \frac{Negative\ words_{jt} - Positive\ words_{jt}}{Negative\ words_{jt} + Positive\ words_{jt} + 1} \qquad (2),$$

which yields very similar results.[3]

We compute negativity scores separately for prepared presentations, for analysts' questions, and for the answers of managers, as these parts are fundamentally different. Presentations are prepared and proofread in advance, whereas answers must to some extent be improvised.

For robustness, we also use the frequency of negative and positive words separately. (There are very few instances of zero positive words.)

We also consider the frequency of uncertain words, for we conjecture that they too could be telling.

[3] This measure is used, for example, by Boudoukh, Feldman, Kogan and Richardson (2012), in a different context.

2.2.2 Tense use

In our analysis of evasive tactics, we will also refer to the tense used by managers and analysts. We argue below that in some situations one would expect that the manager should talk in present tense; when he instead refers to the past, this may be an evasive maneuver. For automated recognition of verb tenses we extensively used Natural Language Toolkit library[4] in the following way: (1) for each sentence, all words in it were tagged with Part-of-Speech tags (POS tagging)[5]; (2) then each tagged sentence was chunked into Name and Verb phrases; (3) for each verb phrase, its tense is deduced from the POS tag of the first word with a number of heuristics to correct the most common errors of POS tagging; (4) if a sentence contains several verb phrases, its tense is defined as the most common tense among its phrases. If a most common tense is not defined, the sentence tense is not defined.

After we have assigned the tenses to each sentence we classify them as describing past present or future with the announcement day as a reference point.[6]

2.3 Company variables

Earnings and forecasts data are from I/B/E/S. Price and returns data used to calculate, for example, stock price volatility are from CRSP.

Let $e_{t,j}$ be the earnings announced for the company j at quarter t recorded in I/B/E/S, and let $\hat{e}_{t,j}$ be the corresponding consensus forecast (the mean analyst forecast included in the I/B/E/S

[4] www.nltk.org

[5] POS tagging and sentence chunking are implemented using standard statistical methods from NTLK library. For more details see http://streamhacker.com/2008/11/10/part-of-speech-tagging-with-nltk-part-2/; http://streamhacker.com/2009/02/23/chunk-extraction-with-nltk/ and http://streamhacker.com/2008/12/29/how-to-train-a-nltk-chunker/ .

[6] We classify the present perfect tense for our use as past-oriented speech, consistent with the definition of Merriam-Webster dictionary: "present perfect is a verb tense that expresses action or state completed at the time of speaking".

detail file during the 30 days before the quarterly earnings announcement). Denote by $P_{t,j}$ the price of shares of company j 5 trading days before the announcement in quarter t. Then,

$$Earnings\ surprise_{jt} = \frac{e_{jt} - \widehat{e_{jt}}}{P_{jt}} \quad (2)$$

When a firm underperforms expectations and the surprise is negative, the *Surprise_decile* will take values from -5 (for the largest negative surprises) to -1 (for the smallest surprises). Positive surprises are similarly divided into quintiles, taking the values from 1 to 5 from smallest to largest. We winsorize earnings surprise at 1 and the 99 percent levels.

Let $P_{jt\text{-}1,+5}$ be the stock price for the company j 5 days after an earnings announcement for quarter $t-1$, and let $P_{jt,-5}$ be the stock price for the company j 5 days before an earnings announcement for quarter t. Then the quarter-end capital gain price is

$$Capital\ gain_{jt} = \frac{P_{jt,-5} - P_{jt-1,+5}}{P_{jt-1,+5}} \quad (3)$$

We winsorize capital gains at the 1% level.

The quarter change in earnings is the earnings at quarter t, minus the earnings in quarter $t-1$, scaled by the stock price 5 days before the earnings announcement.

$$Change\ in\ earnings_{jt} = \frac{e_{jt} - e_{jt-1}}{P_{jt,-5}} \quad (4)$$

Market return$_{t,t\text{-}1}$ is 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.

Pre-announcement revision frequency is the number of forecast revisions in the 120 days before each quarter's earnings announcement, scaled by the number of analysts. This is a measure of the general difficulty of predicting a firm's earnings.

Post-announcement revision frequency, which we denote *revision frequency*, is the number of

revisions after the conference call of quarter *t* until the earnings announcement of quarter *t+1*, scaled by the average number of analysts. *Forecast variance* is the variance of analysts' forecasts for earnings in the next quarter (*t*+1) that are outstanding three days after the conference call of quarter *t.* *Immediate reactions* is the share of analysts covering the firm who make a forecast for quarter *t+1* within three working days after the conference call of quarter t.

Forecast Error (*FE*) is defined as the difference between the consensus forecast and the actual earnings, scaled by price to ensure comparability of errors for different quarters and firms. Let $f_{jt,t+1}$ be the consensus forecast, that is, the average of all forecasts for quarter *t+1* outstanding 3 days after the earnings announcement for quarter *t*. Then:

$$FE_{jt+1} = \frac{f_{jt,t+1} - e_{jt+1}}{P_{jt}} \qquad (5)$$

Absolute Forecast Error (AFE) is the absolute value of FE_{jt}. We winsorize Forecast Errors at the 99 percent level.

As standard control variables we use the log of *total assets*, *Tobin's Q* and the one-year-lagged *stock return volatility*, computed from monthly return data over the past 48 months.

We also calculate the short-term stock market reaction to conference calls. Specifically, CAR0toP1 is the two-day, [0,1] absolute cumulative market-adjusted stock return on or after the conference call date. The residuals from the market model are used as abnormal returns. The estimation window for the market parameters is in the period [-120, -21] prior to the earnings conference call. We require at least 60 observations in this time period. The value-weighted stock market return from CRSP serves as our benchmark return. We winsorize CAR0toP1 at the 1 and the 99 percent levels.

2.4 Descriptive statistics

Table 2 displays summary statistics on the variables we use.

TABLE 2 ABOUT HERE

On average about 0.45% of all words are coded as negative and 1.43% are coded as positive. Negativity (the ratio of negative to positive words) is higher in presentations than in the improvised answers, suggesting that CEOs tend to be more cautious in the prepared part of their speech, or what is effectively the same, they fall prey to optimism when responding extemporaneously.[7] Negativity is even higher in the questions that analysts pose, suggesting that analysts tend to probe the validity of the remarks made in the presentations. Using the Loughran and McDonald (2011) classification, the percentage of negative words is overall somewhat higher, about 1% of all words used.

3 What do managers talk and not talk about?

This section has two goals. First, Section 3.1 studies what factors help explain variation in managerial speech. To determine whether the managers' choice of words predicts the future, we first need to understand how the past performance drives the words they use.

Second, Section 3.2 examines how the character of reporting is modified in relation to the changes a company's performance. Here we are interested not so much in what is *said*, but in whether managers employ evasive tactics.

[7] If we think that questions are likely to differentially ask about concerns, this disparity is reinforced.

3.1 Tone of speech

Managers host a quarterly conference call to announce and comment on earnings in the prior quarter. It would be natural to assume that, as the earnings discussion is the purpose of the call, the quality of earnings should be the most important factor determining the managers' mood and consequently the word choice. It is possible, however, that the managers, and perhaps the investors, care more about some other results. We analyze which performance characteristics are most important to the managers by investigating how the changes in those characteristics influence a manager's speech.

Table 3 presents the results. In this and the following tables, we present panel regressions with standard errors clustered on the company level. The regressions include quarterly market returns (and, therefore, do not include quarter time dummies) as well as industry fixed effects. (In additional results we also include *firm* fixed effects, which allows for the possibility that managers may have their particular vocabularies, or that some of them have a penchant for using more positive or negative words than others.)

TABLE 3 ABOUT HERE

Table 3 shows that the difference between actual earnings and market expectations plays an important role in determining the managers' tone. Besides the change in earnings, managers' tone indicates that they care significantly about the change in earnings compared to the previous quarter.[8] These findings confirm the importance to managers of beating the market expectations, as described by Degeorge, Patel and Zeckhauser (1999).

[8] These findings are robust whether we use as a regressor in the model the surprise's deciles or the surprise itself. The coefficient of determination is, however, higher for the models with deciles.

Capital gain positively impacts the tone of the presentations, even after controlling for the general market performance. Market returns during the past quarter also correlate negatively with the negativity of managers' speech. Downbeat returns foster downbeat announcements. Thus, managers do not try to sweeten sour news with overwhelming enthusiasm and positiveness to encourage the public.[9] Managers of growth firms (high Tobin's Q) speak more positively, but high stock return volatility in the past is associated with more negativity.

In general, the tone of the presentations prepared in advance is more strongly affected by the performance characteristics than the tone of the improvised answers to the analysts' questions.

The negativity of the managers' answers to the analysts' questions is highly significantly correlated with the negativity of the analysts' questions, more negative questions, not surprisingly, receiving more negative answers.

Next, to disentangle the effect on negativity caused by negative words and positive words, we conduct the same kind of analysis for frequencies of each category. These results are in Table 4.

TABLE 4 ABOUT HERE

Consistent with our previous results, negative (positive) words become more (less) frequent when the economy worsens, when the shareholders experience capital loss, or when the firm's earnings fall below the analysts' forecasts. Indeed, earnings surprise appears to be one of the most crucial results discussed by the managers and questioned by the analysts.

We also find that the managers' use of negative words can be explained more easily than their use of positive words. Adjusted R^2 is noticeably lower for the positive words' frequencies.

[9] The coefficient on the market return is larger than the coefficient on the stock return, but note that the market return is also significantly less variable than the individual stock returns.

3.2 Evasive tactics

The goal of managers, it is normally asserted, is to present a company's results in the way that is most beneficial to the company's value. It would be natural to expect that managers, even when they have poor results to present, would try to use conference calls to persuade investors that their money is not too greatly at risk. However, at the same time, the managers' efforts to keep value up are subject to the constraint that they not significantly misrepresent the truth in a way that would risk expensive litigation and reputational damage. The other constraint is the need to keep market expectations regarding future earnings at a reasonable level, in a way that these expectations can be met.

In this subsection, we investigate what managers exclude from their reports. Thus, instead of focusing on "tips," we now investigate "tells." We ask which parameters of a past company's performance may incline a manager to omit, obfuscate, or avoid certain subjects. Of course, using only a written transcript has its limitations, but it is a tool available to all market participants.[10]

We identify several patterns of evasive behavior and analyze their correlations to the firm's performance.

A first indication can be found in *inconsistency in tone*, that is in significant differences in negativity between presentations (prepared speech) and answers (improvised speech). When

[10] There are more sophisticated ways to infer evasive tactics. For example, a Boston-based consulting firm, Business Intelligence Advisors (BIA), employs former CIA officers to verify the sincerity of top managers during their public presentations by analyzing verbal and nonverbal clues during conference calls. BIA deception detection services use the CIA intelligence techniques of analyzing gestures, words, context, voice, changes in presentation style, and many other details such as the time gap before answering a question and the trembling of the voice. Complaints, detour phrases, selective memory, and overly courteous responses may serve as warning signs for BIA, whose work is not limited to textual analysis. Its analyses appear to have value, as several important hedge funds employ BIA services. -- Without trying to compete with BIA in unveiling corporate paltering, we expand upon its ideas on searching for textual clues in order to extract more relevant news from public disclosures.

preparing a presentation, managers, aware of the great importance of every word, carefully ponder the possible impact of each locution. When improvising answers, managers, without the luxury of time for crafting responses, instinctively avoid saying anything negative. When taken by surprise by a provocative question, managers might be inclined to sweeten the truth. Corporate lawyers are unable to intervene to prevent managers' improvised sugarcoating and to ensure that they do not cross the acceptable line of puffery. In fact, in 2/3 of our observations, more negativity is expressed in the presentations than in the answers, and the average negativity in the presentations is significantly greater than in answers (see Table 2).

A second indicator is the *use of a "wrong" verb tense*. Presentations should announce and explain past results. Answers should clarify missed points, explain the current situation, or give a preview of the future. If too few sentences in the presentation are in the past tense, the managers are possibly misleading the listeners by diverting their attention from actual outcomes to events that have not yet happened. If too many answers use the past tense, it means either that the managers have prepared an insufficient or unclear announcement, or that the managers are avoiding talking about the present and the future. Summarizing, we would suspect paltering activity when the use of the past tense is much lower in managers' presentations than it is in their answers.

A third evasive tactic is to *switch the tense* when answering an analyst's question. Switching a tense can be a way to avoid a liability, or, in other cases, it can be an effort to attract the public's attention to a more glorious period (perhaps somewhere in the future). Managers switch the time frames in both directions. Sometimes, analysts get future projections when asking about achieved results. In uncertain times, questions about the current activities or the future opportunities of a company are answered with glorious stories about past successes. On average, in a conference call, 43% of questions using the past tense receive an answer oriented to the

present or future. The proportion of future-tense questions receiving past-tense answers is 11%. That is, the switches aways from the past are almost four times more frequent in our sample than switches to the past.[11]

Fourth, we have also coded the use of specific "*uncertain*" words or constructions; see Table 1 for the corresponding word list.

Fifth, we calculate the number of words per sentence as a measure of *complexity*.

The five proxies – inconsistency in tone, wrong tense use, tense switches, uncertain words, and complex sentences – are not highly correlated; they appear to pick up different dimensions of a manager's speech.

If the use of these speech patterns were random (for example, purely the result of managers misspeaking), these patterns would be uncorrelated with measures of company performance or analyst questions. Interestingly, to some extent the use of these evasive techniques appears to be employed strategically, as the following regression analysis shows.

First, Table 5 shows that managerial tone is more consistent the better were recent results. There are some asymmetries that can be seen by separately considering the difference and the absolute difference. As hypothesized earlier, when the last quarter was bad in terms of stock returns or when the earnings surprise was negative, managers are more likely to switch to a relatively more positive tone in the Q&A session than in the prepared remarks. When analysts' questions are more negative, managers are likely to be more positive in their answers than they

[11] An example of time orientation switch is an answer given by Lehman Brothers' CEO Dick Fuld on the second-quarter 2008 conference call. A Bank of America analyst asked, ``Are you guys seeing any impact, some of the rumors circulating in the marketplace, driving a reduction in client activity or counter parties pulling away from Lehman?" Dick Fuld switched to present perfect from present, referring to the time preceding the announcement and answered: ``We've seen nothing significant across prime broker balances, derivatives, secured lending markets, short end unsecured markets, we've seen nothing significant." Although formally both question and answer are in present tense, the answer was oriented to the time preceding the announcement.

were in presentations.

TABLE 5 ABOUT HERE

Next, we investigate how the choice of verb tenses shifts with the changes in the company's or the market's performance. We are also interested in whether the choices of tense and the negativity in the managers' tones are related. When managers have bad news to communicate, do they spend more time than usual explaining present corrective measures and projecting future successful undertakings? Table 6 presents the results of the tense-usage analysis.

TABLE 6 ABOUT HERE

Normally, more than half of the phrases in presentations use the past tense and more than half of the phrases in questions and answers use the present tense (see Table 2). In the prepared presentations, higher earnings surprise and a better market return are associated with greater use of the past tense. We see that the choice of tense correlates with the managers' negativity. However, controlling for the economic situation, the more negative are managers, the more they talk is about the past, and the less about the present. The effect is more pronounced for the prepared speech than for the improvised answers. Apparently, managers try not to talk about the present and future unless the general tone can be positive. In managers' improvised answers, positive earnings surprises are positively correlated with the use of the present tense. They are negatively correlated with the use of the future tense, but a positive change in earnings from the

previous quarter can outweigh this effect.[12]

Third, we ask whether switches in time frame are strategic. If so, they should relate to conditions of the company. Columns (7) and (8) of Table 6 investigate this question. The primary company-level factor we find that consistently impacts managers' desire to avoid talk about the past is the negativity of the questions. The more negative are questions, and the more negative the tone adopted in the presentations, the less managers switch the time-frame when replying to the past-oriented questions. Past company performance has a low impact on managers' inclinations to switch tenses. There is some evidence that when the share price performance of a quarter has been particularly good, managers tend to switch the time frame to the past when asked about the present or future. The recent market performance is associated positively with both types of time frame switches. The effect is stronger for switches from the past to the future than for switches from the future to the past, suggesting that managers like to look ahead even when not asked to do so if the market has recently performed well.

Fourth, we find in untabulated results that the frequency of the use of these "deception words" is not well explained by the company performance variables we consider, suggesting that this is a noisy proxy for strategic maneuvers (though it may still be informative).

Finally, Table 7 shows that complexity in presentations is not explained by the recent performance of the firm. However, as seen in column (2), poorer results in the preceding quarter imply that managers' answers are more complex. Column (3) suggests that managers begin talking in more complex sentences in the answers than in the presentations when the earnings surprise was negative or when the general market environment is difficult. We do not find

[12] Frankel, Johnson and Skinner (1999) find that managers are less likely to provide earnings guidance during conference calls when performance deteriorates, consistent with our findings. Matsumoto, Pronk and Roelofsen (2011) instead find that managers are more likely to use future-oriented words when performance is poor. One difference in our methods is that we focus on the verb tense whereas they focus on specific words that arguably are future-oriented.

support for the perhaps intuitive conjecture that in answering negative questions managers would begin to use more convoluted explanations in their answers.

TABLE 7 ABOUT HERE

Overall, we observe the increase in evasive maneuvers (inconsistency in tone between presentations and answers; wrong tense use; tense switches; and to some extent complexity) in association with the need to present poor results.

4 Managerial speech and stock returns

Existing work on smaller samples by Price, Doran, Peterson and Bliss (2012) and Mayew and Venkatachalam (2012) has documented negative stock price reactions to the tone on conference calls. In this section, we confirm and extend their findings, setting the stage for the analysis, in the following sections, of why these effects arise. Table 8 presents regressions of the abnormal returns on the day of the conference call plus the immediately following day.

TABLE 8 ABOUT HERE

Columns (1), (3), and (5) of Table 8 first show that negativity (in both presentations and answers) is strongly negatively related to the short-term stock market reaction around the earnings announcement. Columns (2), (4), and (6) add the earnings surprise of the preceding quarter and other controls. The earnings surprise has a positive effect on the stock market reaction on the conference call date in this setting as most of the time the two are on the same

date.[13] But, interestingly, these columns show that the positive impact of a positive earnings surprise on the stock market reaction is much subdued if the manager is negative or cautious. Put differently, if the earnings surprise is bad, managers can, at least in the short run, counterbalance this to some extent by talking positively, and the role of tone is more important the larger the earnings surprise is. Regressions (5) and (6) run a horserace between negativity in presentations and negativity in answers. We see that both individually matter.

Finally, we investigate how the stock market reacts to evasive tactics of managers. Columns (7) and (8) of Table 8 examine the role of inconsistency in tone. Inconsistency per se is negatively related to short-term stock reactions to conference calls; moreover, column (8) also implies that a positive earnings surprise is worth less if it comes along with inconsistency in tone. In untabulated results, we also find that two other evasive tactics--more talk in past tense in answers and higher complexity in presentations—are also negatively associated with stock market reactions to the conference call.

There are two reasons why rational stock market participants may react to managerial speech patterns. First, tone may induce higher induce higher uncertainty, which reduces valuations; this is what we look at in Section 5. Second, negative tone may foreshadow poor future operating performance, indicating lower than hitherto expected future cash flows; this is what we investigate in Section 6.

5 Managerial speech and analyst reactions

In this section, we investigate how the tone in a manager's speech and the use of paltering techniques by managers impacts analyst reactions after the conference call. Table 9 presents the

[13] In ongoing work, we are conducting an analysis in which we distinguish firms according to the lag between the earnings announcement and the conference call date

coefficients of regressions explaining the following variables: the forecast revision frequency, the variance of analysts' forecasts, and the speed of analysts' reactions to the announcement.

TABLE 9 ABOUT HERE

Columns (1), (3), and (5) show that negativity is positively associated with revision frequency after the conference call and variance of forecasts. It is negatively correlated with the speed of analysts' reactions.

Columns (2), (4), and (6) indicate that the more the tone of managers varies between presentations and answers, the greater the degree of uncertainty reflected in analyst behavior. Higher concentration on discussions of the past and present in the managers' presentations allows analysts to obtain a higher degree of certainty in their forecasts. (The tense used in answers is unrelated to any of the three dependent variables, as is the frequency of tense switches.)

Collectively, these results mean that managerial tone and, to some extent, evasive tactics, do appear to confuse analysts, the individuals who serve as the financial community's messengers on company performance. Thus, part of the negative stock return reaction we saw in the previous section is likely due to higher discounting due to higher uncertainty. The other reason why tone may be priced is because it may allow investors to glean insights from managerial communication that provide additional forecast power that goes beyond what analysts provide. This is what we turn to in Section 6.

6 Real predictive power of textual analysis: Forecasting earnings

Thousands of professional financial analysts constantly endeavor to provide timely and accurate

forecasts of the earnings of the companies they follow. On average, each quarter there are 13 analysts issuing a report on every S&P 500 company. With their research being available to the public, does it make sense to work on independent predictions by examining such details as excessive negativity by managers?

It would make sense under two conditions: 1) The degree of manager negativity reveals certain internal information (see Section 5.1); and 2) Analysts do not systematically capture this information in their forecasts (see Section 5.2).

6.1 The information leakage hypothesis

We first hypothesize that a manager at the moment of the earnings announcement of quarter *t* already has some idea of what to expect in the quarter *t*+1. He might reveal his insights intentionally to avoid possible legal consequences or to bring down the market's expectations. Alternatively, he might reveal them unintentionally, possibly even without noticing, and quite possibly contrary to his wishes. Whatever the source or the intent of the revelation,,the component of the managers' negativity unexplained by past results provides information about that company's prospects. This argument yields the *information leakage hypothesis:* Managers reveal information about future earnings of the company by choosing (consciousnessly or subconsciousnessly) the presentation tone. Thus, under this hypothesis, we expect abnormal negativity to be correlated with earnings in the next quarter.

To test this hypothesis, we first estimate the benchmark, the normal level of negativity justified by the company's past performance. We use our results from Table 3 to explain the managers' choice of words by the company's and the market's past performances. This model implies a "normal" degree of negativity. We call the difference between actual negativity and the fitted value the *Negativity Residual*. Specifically, *Negativity Residual, Presentations* is the

residual of regression (3) in Table 3. *Negativity Residual, Answers* is the residual of regression (8) in Table 3. Negativity residuals measure the excessive negativity — the negativity that is not justified by past performance.

Under our hypothesis, positive residuals would signal managers' expectations of lower earnings in the future, while negative residuals would mean that managers feel more secure about the future than one could expect given the past results.

Cases with negative negativity residuals are almost twice as common as cases with positive residuals. That means that managers are more often overly-optimistic than overly-pessimistic.

To investigate whether this new measure adds information to forecast earnings, we compare two models, shown in columns (1) and (2) of Table 10, respectively. Column 1 explains the earnings in quarter t+1 by the earnings in the two preceding quarters, the earnings surprise at quarter t, and the market returns during the quarter t. Column 2 includes both *Negativity Residual, Presentations* and *Negativity Residual, Answers*. As the residuals of different signs may have different correlations with future earnings, we separate positive and negative residuals by multiplying them by dummy variables. To be able to compare adjusted R^2 for different models, all of them are tested on the same group of observations.

TABLE 10 ABOUT HERE

These regressions show that positive residuals have predictive power for future earnings. That is, when a manager is excessively negative in both presentation and answers, it signals lower earnings in the future.

6.2 The complete forecasts hypothesis

Section 6.1 demonstrated that information leaks through managerial tone. It would seem quite reasonable that analysts would have discovered this. Thus, we now consider whether the analysts' forecasts can be improved if adjusted to incorporate information on the managers' negativity. Specifically, we test the *complete forecasts hypothesis:* Analysts' forecasts capture the tone of managers' speech.

One way to approach testing this hypothesis is to consider whether the knowledge of negativity residuals can improve the earnings prediction model after we have taken into consideration the financial analysts' forecasts. We compute the analysts' consensus following the earnings announcement for quarter *t* as the average of all the forecasts valid on the third day after the earnings announcement. We assume that a three-day period is sufficient for analysts to incorporate new information. According to previous research, revisions of analysts' forecasts cluster around earnings announcements (Zhang 2008), with most revisions being made on the day of the earnings announcements or on the next trading day.

Columns (4) and (5) of Table 10 show that, although analysts' forecasts are among the best estimators of future earnings, we get slightly higher adjusted R^2 when we add negativity residuals into the model. Note that we have a directional hypothesis here, namely that negativity will indicate lower future earnings. The data support this hypothesis. The increase in R^2 is, therefore, only one of two indications that paying attention to managerial tone is helpful. This is suggestive, but not yet sufficient (especially given the low magnitude of differences in R^2), evidence that analysts do not fully incorporate into their forecasts the information contained in the managers' negativity.

The next question we ask is whether our knowledge helps us adjust analysts' forecasts. Under the complete forecasts hypothesis, forecast errors are not correlated with the degree of the

managers' excessive negativity.

We reject this hypothesis. As can be seen in column (1) of Table 1, positive forecast errors (expectations are above actual earnings) become larger and possibly more frequent when managers are excessively negative, either in their presentations or in their answers. Thus, analysts do not sufficiently incorporate managers' excessive negativity into their forecasts. Interestingly, as can be seen in the insignificant coefficients on the negativity residuals for the case where the residual is negative, the opposite effect does not hold, that is, analysts are not excessively negative when managers are excessively positive.

TABLE 11 ABOUT HERE

In column (2) of Table 11, we add the pre-announcement revision frequency as a proxy for the sophistication of forecasting for a particular quarter and particular firm. The results remain significant. A noteworthy side result is that with a more poorly performing market, the forecast errors go up.

Columns (3) and (4) investigate sub-samples to see in which types of companies analysts are most prone to insufficiently taking tone into account. We calculate, for each firm, the variability of negativity across time, for presentations and answers separately. We then take the difference of the variability of tone in answers minus the variability of tone in presentations, and we sort firms into terciles according to this difference measure. The idea is that managers' statements are difficult to interpret for analysts if a firm's managers, in their answers, are always very consistent in tone (resulting in relatively low variance in the answers, compared to the prepared remarks). Intuitively, managers may decide to just state positive platitudes when they do not have anything nice to say. Column (3) shows that it is precisely these firms where abnormal negativity in

answers is particularly strongly associated with forecast errors. By contrast, for firms where variability in tone in answers is fairly high, indicating more easily interpretable communicating, analysts fully take into account abnormal tone in presentations and also take into account abnormal tone in answers much more than on average; see Column (4).

Finally, for a better understanding of what happens with forecast errors at different levels of negativity, we provide Table 12.

TABLE 12 ABOUT HERE

Generally, analysts' errors are biased toward the negative — actual earnings exceed analysts' forecasts: only about a third of forecast errors are positive. This tilt suggests that managers, if they have control, like to manage estimates so that they can exceed projections.

Though there is a greater frequency of beating analysts' forecasts, when they fall short the consequences are greater. That is, positive errors tend to be larger in absolute value than negative ones. This finding is consistent with the concept of companies taking a "big bath" when not able to meet or beat analysts' expectations.[14] We see from our sample that when managers are excessively negative about the future, the share of cases with positive forecast errors rises.

6.3 Connecting stock return reactions and the predictive power of tone for earnings

The analysis in this Section 6 so far provides support for the information leakage hypothesis, and we reject the complete forecasts hypothesis. Thus, we arrive at the conclusion that managerial

[14] Previous literature has shown that managers benefit from reporting earnings that are higher than the analysts' forecasts (Bartov, Givoly and Hayn 2002; Kasznik and McNichols 2002; Matsumoto 2002; Brown 2005). As a consequence, managers can manage earnings (Degeorge, Patel and Zeckhauser 1999) or incentivize analysts to issue lower forecasts (Hong and Kubik 2003; Ke and Yu 2006).

tone – in particular, negativity above the benchmark – contains valuable information about the next-quarter earnings and is not taken fully into account in analysts' forecasts.

To close the loop to the stock return reactions documented in Section 4, we can consider whether, as would be expected in rational markets, those firms where tone is most strongly linked to future earnings are also those firms where the stock market reacts the most to managerial tone. To conduct this analysis, we first run time series regressions, for each firm separately, of future earnings on measures of tone. For example, we regress future earnings on abnormal negativity in presentations. In this way, we obtain an "earnings-negativity coefficient" for each firm. Second, we run time series regressions, for each firm separately, of CARs on conference call dates on the same measure of managerial tone; thus, we obtain a "CAR- negativity coefficient" for each firm. We then run a cross-sectional regression of the CAR- negativity coefficients on the earnings-negativity coefficients. If the association between these two quantities is positive, this is in line with rational stock market reactions. We indeed obtain a significantly positive relationship, indicating that the stock market reaction to managerial tone on conference calls is rationally consistent with what tone portends for the operating performance of companies.[15]

7 Real predictive power of textual analysis: Forecasting bankruptcy

Our final empirical analysis addresses the extreme event of bankruptcy. The use of accounting information to predict bankruptcy or financial distress was pioneered by Beaver (1966, 1968) and

[15] In this regression, we in principle have an errors-in-variables problem, which will bias the coefficient towards zero, that is, against our hypothesis. This analysis is preliminary. The quantities obtained are indicative, though. The coefficient in the regression just described is on the order of 0.05. Negativity has, in Table 10, column (4) a coefficient of about 0.2, so the expected average effect on stock returns is 0.05*0.2 = 0.01. This approximately corresponds to the coefficient on negativity in column (1) of Table 9, which shows the association of tone and CARs on average.

Altman (1968). First to add qualitative information to the bankruptcy prediction models, Tennyson, Ingram and Dugan (1990) analyzed two kinds of managers' narrative disclosures: the President's Letter and Management's Discussion and Analysis of Results. They find that for the Management Analysis the quantity of words focused on the firm growth and expansion is negatively correlated with the likelihood of bankruptcy. For the Presidents' Letter an increase in words focused on specific internal problems is associated with a higher likelihood of bankruptcy.

Our research continues the investigation on how textual analysis can help in forecasting financial distress. The financial crisis of 2007-2009 led to a large number of bankruptcy filings. These cases provide a natural setting to study the "language" of bankruptcy.

Section 6.1 deals with the hypothesis that managerial tone reflects approaching bankruptcy. Section 6.2 tests the hypothesis that, paying attention to managerial tone and paltering can improve upon bankruptcy prediction models that exclusively rely on financial inputs.

7.1 The bankrupts' changing tone hypothesis

We first consider the *bankrupts' changing tone hypothesis:* A systematic difference exists between the negativity of the speech of firms approaching bankruptcy and firms that are not.

To test this hypothesis, we focus on firms with assets of over 100 million dollars, and then examine those that go bankrupt as identified by the Chapter 11 Library. After we exclude companies for which the data are unavailable in any of our 3 main data sources (StreetEvents, CRSP, I/B/E/S), 50 bankrupt companies remain in the sample. For the bankrupt companies, we define the *Distance* variable, measuring the distance from an earnings announcement to the bankruptcy in quarters. *Distance* is equal to 1 for the last earnings announcement before filing for Chapter 11. We examine up to 6 quarters prior to the bankruptcy.

We begin by plotting, in Figure 1, the changes of managers' tone over this period.

FIGURE 1 ABOUT HERE

We see that negativity tends to rise as a bankruptcy approaches. This behavior is more pronounced for the prepared speeches than for improvised answers to analysts' questions. In plots not shown, the frequency of positive words in presentations increases up to three quarters before the bankruptcy, but then falls, while the frequency of positive words in answers increases up to the last earnings-announcement-conference-call before the bankruptcy, when it drops. Apparently, managers believe that three to four quarters before the bankruptcy the eloquence of the managers still can persuade the public that the company is solvent and has some positive prospects. However, subject to litigation risks, managers mostly keep the excessive positivism in the prepared speech in the thoroughly reviewed sentences. Negativity reaches levels that should sound alarms half a year before bankruptcy.[16]

We test now the bankrupts' changing tone hypothesis more formally. To do so, we randomly select 100 non-bankrupt companies from the S&P 500 (2007) list and add them to the sample of bankrupt firms. (This is a preliminary analysis. We are in the process of collecting further date to create a more proper matched sample of firms.) Table 13 presents the coefficients of panel regressions, testing how the distance to the bankruptcy impacts managers' tone in presentations. Baseline observations are observations for non-bankrupt companies and observations preceding a bankruptcy by more than 6 quarters. In one model, we consider negativity, in the other excess

[16] These graphs provide basic descriptive evidence. For example, they do not account for the general mood in the economy during a specific time period. This might create a bias: most bankruptcy cases happen in times of trouble when the overall economy does poorly and the degree of negativity in anyone's speech is higher. To avoid this bias, we compute the abnormal negativity as the difference between the managers' negativity and the average negativity for all firms in the sample in the same quarter. The picture looks similar. The regression analysis addresses these issues more formally.

negativity.

TABLE 13 ABOUT HERE

In both models, the coefficients are statistically significant on the dummies for distances of one and two quarters before the bankruptcy; in the model in Column (1), the dummy for three quarters before bankruptcy is also significant. When using frequencies, the dummies for distances of up to three and, in some specifications four quarters before bankruptcy are significant (not shown).

7.2 The bankruptcy predictability hypothesis

Our second hypothesis in this context is the *bankruptcy predictability hypothesis:* Managerial word choice contains information useful for classifying firms ex-ante into bankrupt and non-bankrupt groups when considered in addition to accounting ratios.

To test this hypothesis we develop a classificatory model using a logistic regression. The dependent variable is a *Bankruptcy* dummy equal to 1 if the firm is going to file for Chapter 11. The baseline is provided by a model which utilizes as explanatory variables the same financial ratios used by Altman (1968) in his seminal work:

- Liquidity ratio (LR) = working capital divided by total assets;
- Cumulative profitability ratio (CPR)= retained earnings divided by total assets;
- Return on assets (ROA) = earnings before interest and taxes divided by total assets;
- Solvency ratio (SR) = market value of equity divided by the book value of total debt;
- Capital-turnover ratio (CTR) = sales divided by total assets.

We expand upon this baseline model using measures of tone and evasiveness concurrently

with accounting ratios. Table 14 describes the classification success for both models. In this table, the textual analysis explanatory variables are negativity residuals and quantity of uncertain words. The percentages of correct classifications presented are the average values of ten independent trials with randomly selected non-bankrupt observations.

TABLE 14 ABOUT HERE

We find that incorporating tone and evasiveness of speech substantially improves the quality of the predictions. The full model's classification accuracy is higher by about 16.7% than the model based on accounting ratios only. Untabulated results also show that the combined model also has a classification accuracy higher than or at least as high as the financial ratio model alone for any of 6 quarters preceding the bankruptcy. We observe the largest superiority of the combined model in the period around of one year or three quarters before the bankruptcy.

In sum, the preliminary analysis in this section suggests that textual analysis contains useful information in addition to financial data for bankruptcy forecasting.

8 Additional results and robustness tests

8.1 Firm fixed effects

A possible alternative explanation for some of our results is that there are intrinsic differences between managers. For example, some may be inherently more prone to obfuscating, while others are more truthful. However, all our results also hold with firm fixed effects, suggesting that unobserved differences between managers do not drive our results.

8.2 Loughran and McDonald (2011) – the FinList

We have repeated each analysis using the extensive classification lists suggested by Loughran

and McDonald (2011) – the *FinList*. These lists are based on Harvard Dictionary classification, but adjusted to financial terminology. They are offered by Bill McDonald on his personal web-page.[17] This analysis checks whether our results are robust to alternative textual guidelines, and also investigates if they are driven by the most frequently used words or by the words rarely used. Results not reported show that our findings do not depend on the choice of word classification list.

8.3 Earnings surprise

Rather than using the earnings surprise decile, we can also use the actual earnings surprise, scaled by the stock price. The results prove similar.

8.4 Length of speech

When recent performance has been good, managers tend to talk less. However, controlling for the length of presentations or answers does not affect any of the results in the paper.

8.5 Out-of-sample predictability of earnings

We have estimated expected negativity separately for each firm using solely the firm's past information. In this case, we predict earnings for 2006 going forward (because we need a sufficiently large number of quarters to estimate normal negativity). The results we obtain are economically and statistically similar to those in Tables 9 and 10.

8.6 Other functional forms

Because some dependent variables are skewed, we have used log transformations. We have also used quadratic and higher-order terms for the relevant explanatory variables. The results proved similar.

8.7 Two-way clustering in standard errors

In addition to clustering standard errors on the firm level (as in the main analysis), we also

[17] www.nd.edu/~mcdonald/Word Lists.html

clustered standard errors across periods. The results remain unchanged. This suggests that "firm effects" (Petersen 2009) are not important in this analysis.

9 Conclusion

We apply textual analysis techniques to the earnings announcements transcripts with the aim of investigating whether internal information about a company's future may leak through the managers' choice of words. The not surprising answer is yes. But two facts are surprising: (1) Analysts under-recognize the importance of word choice when making their projections, and (2) we obtain our results with a very simple word list (though the results also holds when using a large number of indicator words). Specifically, our main results are obtained with a word list comprising only 32 (40) instead of 2,337 (352) negative (positive) words in the Loughran and McDonald (2011) dictionary. Thus analysts could use our approach to improve their forecasts even on an intuitive basis.

The most important factor determining managers' tone on the earnings-announcement conference call is the difference between the analysts' expectations and the actual earnings. Beyond that, the change in earnings during the quarter and the stock returns influence the frequency of negative words used by the managers. Managers engage in several evasive tactics when announcing earnings and responding to questions about them. They include changing the time reference of an analyst's question, shifting the tone between presentations and answers, and using the wrong tense. We find that the intensity of evasive behavior is positively correlated with the negativity of the managers' speech and with poor economic results and with the aggressiveness of analysts' questions.

We find that *Negativity Residuals* — excessive negativity, which cannot be explained by

past performance — are negatively correlated with future earnings. This finding suggests that the proportion of positive and negative wordings that managers employ reveals information on their company's prospects. Analysts fail to fully incorporate the managers' tone into their forecasts: Excessive negativity produces a wider gap between actual results and analysts' expectations. In other words, analysts are insufficient attuned to abnormal managerial tone. We also document that higher negativity is associated with larger uncertainty, as reflected in the higher frequency of forecast revisions, larger variance in forecasts, and slower analysts' reactions to earnings announcements. These findings help rationalize the stock price reactions to managerial tone.

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Table 1: Word classification by groups

We compute the frequencies of all words appearing in managers' and analysts' speeches during conference calls (initial earnings announcements and answers to analysts' questions). Then, from among the most frequent words we choose the words belonging to these three groups: (1) positive words, (2) negative words, (3) words of uncertainty. The words in the table appear in the frequency of their use, within their categories.

Positive		**Negative**		**Uncertain**	
Growth	improvements	Decline	volatility	Think	reasonable
good	confident	risks	weakness	may	plans
strong	successful	risk	problem	expect	efforts
opportunities	stronger	loss	lost	anticipate	prelimiary
opportunity	comfortable	negative	challenge	believe	possible
improvement	excellent	uncertainties	slowdown	maybe	planning
positive	nice	difficult	difficulty	compared	expecting
grow	confidence	losses	problems	guess	estimates
growing	profitable	below	declining	knowledge	predict
improved	attractive	declines	negatively	expected	forecasting
improve	optimistic	pressure	worse	expectations	forecasts
grew	benefited	reduce	uncertainty	assumptions	pretty
ability	exciting	incorrect		assume	approximately
strength	wins	decrease		assuming	might
gain	safe	inaccuracies		projections	wondering
success	successfully	decreased		forecast	enough
favorable	grown	tough		fairly	hope
advantage	strength	challenging		generally	potential
outstanding	encouraging	challenges		perhaps	comparison
improving	perfect	declines		roughly	assumption

Table 2: Descriptive Statistics

This table shows descriptive statistics. *Stock return* is the capital gain obtained in the elapsed quarter. *Change in earnings* is the earnings at quarter t, minus the earnings in quarter t−1, scaled by the stock price 5 days before the earnings announcement. *Earnings surprise* is the difference between actual and consensus forecast earnings. For the main analysis, we scale the earnings surprise by the share price 5 days before the earnings announcement and sort companies into *earnings surprise deciles*. *Log (assets)* is the natural logarithm of total assets. *Tobin's Q* is the market value of assets to the book value of assets. *Volatility* is computed from monthly return data over the past 48 months. *Forecast Error* is the difference between the consensus forecast (the average of all forecasts for quarter *t* outstanding 3 days after the earnings announcement) and the actual earnings, scaled by the share price to ensure comparability of errors for different quarters and firms. *Revision frequency* is the number of revisions, scaled by the number of analysts. *Forecast variance* is the variance of analysts' forecasts outstanding at the end of the following quarter. *Immediate reactions* is the share of analysts covering the firm who react within one working day after the earnings announcement. *Words* are all words in the presentation, questions, and answers parts of the conference call, respectively. We code negative, positive, and uncertain words according to the procedure described in Section 2.2.1. *Negativity Residual, Presentations* is the residual of regression (1) in Table 3. *Negativity Residual, Answers* is the residual of regression (2) in Table 3. We code tense use as described in Section 2.2.2.

Company performance and other characteristics	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Stock return in previous quarter	8347	0.04	0.39	-0.48	2.97
Change in earnings from previous quarter, scaled by share	8629	-0.01	0.37	-27.20	2.32
Positive earnings surprise, unscaled	6082	0.06	0.13	0.00	2.82
Negative earnings surprise, unscaled	2518	-0.29	5.62	-274.34	0.00
Earnings surprise, scaled by share price 5 days ago	8674	-0.01	0.41	-27.45	0.32
Log (assets)	8519	9.48	1.34	5.89	14.61
Tobin's Q	8519	1.99	1.30	0.59	12.10
Volatility	8392	0.31	0.14	0.10	1.10
Forecast error in % of share price one quarter ago	7690	0.05	0.94	-6.29	6.29
Revision frequency	7802	0.42	0.42	0.00	3.38
Forecast variance	7668	0.04	1.06	0.00	73.94
Immediate reactions	7802	0.49	0.28	0.00	1.00
Cumulative abnormal return [0; 1]	8560	0.00	0.06	-0.65	0.99

[continued on next page]

Table 2: Descriptive Statistics [continued]

Speech length	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Words Presentations	8737	3952.05	1671.20	5	18094
Words Answers	8737	3985.91	1558.41	22	21371
Phrases Presentations	8737	170.19	73.61	1	819
Phrases Answers	8737	179.48	71.83	2	958
Tone	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Negative Words in Presentations	8737	17.62	14.10	0	170
Negative Words in Answers	8737	9.01	7.05	0	150
Negative Words in Analysts' Questions	8737	4.08	3.93	0	101
Positive Words in Presentations	8737	56.95	34.39	0	296
Positive Words in Answers	8737	36.38	20.02	0	191
Positive Words in Analysts' Questions	8737	11.54	8.08	0	213
% Negative Words in Presentations	8737	0.45	0.30	0	5.00
% Negative Words in Answers	8737	0.23	0.15	0	2.05
% Positive Words in Presentations	8737	1.43	0.63	0	4.63
% Positive Words in Answers	8737	0.91	0.38	0	2.85
Negativity (Negative/Positive Words) in Presentations	8702	0.41	0.44	0	8.00
Negativity (Negative/Positive Words) in Answers	8691	0.31	0.37	0	12.50
Negativity (Negative/Positive Words) in Analysts' Questions	8121	0.47	0.61	0	9.00
Negativity Residual, Presentations	7962	0.00	0.44	-0.93	7.46
Absolute Negativity Residual, Presentations	7962	0.28	0.34	0.00	7.46
Negativity Residual, Answers	7949	0.00	0.36	-0.64	11.85
Absolute Negativity Residual, Answers	7949	0.19	0.31	0.00	11.85

[continued on next page]

Table 2: Descriptive Statistics [continued]

Evasive tactics	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Difference in negativity of presentation and answers	8681	0.09	0.46	-10.96	8.00
Absolute difference in negativity of presentation and answers	8681	0.25	0.39	0.00	10.96
% Past Tense Verbs in Presentations	8736	54.41	9.57	0.00	100.00
% Present Tense Verbs in Presentations	8736	10.69	4.08	0.00	57.14
% Future Tense Verbs in Presentations	8736	34.90	7.59	0.00	81.82
% Past Tense Verbs in Answers	8737	29.96	6.53	0.00	100.00
% Present Tense Verbs in Answers	8737	14.19	4.57	0.00	66.67
% Future Tense Verbs in Answers	8737	55.85	6.55	0.00	100.00
% Past Tense Verbs in Questions	8219	35.95	8.39	0.00	100.00
% Present Tense Verbs in Questions	8219	10.91	4.95	0.00	50.00
% Future Tense Verbs in Questions	8219	53.14	8.21	0.00	100.00
Share of past-oriented questions that get answers oriented toward present or future	8204	0.43	0.20	0.00	1.00
Share of present- or future-oriented questions that get answers oriented toward past	8211	0.11	0.07	0.00	1.00
% Uncertain Words in Presentations	8737	0.98	0.34	0.00	3.70
% Uncertain Words in Answers	8737	1.53	0.44	0.00	6.23
Complexity in Presentations (words / sentence)	8747	23.36	2.65	5.00	30.55
Complexity in Answers (words / sentence)	8747	22.50	3.87	7.33	35.22

Table 3: Negativity in the tone of conference calls

This table presents panel regressions. The dependent variable is *Negativity* in presentations (column 1), in answers (column 2), and in analysts' questions (column 3). Negativity is the ratio of negative to positive words. The other variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses for the main variables of interest. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)
Negativity in	Presentations	Answers	Questions
Stock return in previous quarter	-0.041***	-0.012*	-0.028**
	(-5.36)	(-1.71)	(-1.99)
Change in earnings from previous quarter	-0.441***	-0.107*	-0.300**
scaled by share price 5 days ago	(-3.42)	(-1.76)	(-1.98)
Earnings surprise decile	-0.029***	-0.004***	-0.021***
	(-12.40)	(-2.85)	(-7.13)
Negativity in Analysts' Questions		0.147***	
		(10.55)	
Negativity in Presentations		0.206***	0.340***
		(7.95)	(8.67)
Market return in previous quarter	-0.565***	-0.146***	-0.390***
	(-9.23)	(-3.44)	(-5.03)
Ln(assets)	-0.019	0.004	0.036***
Tobin's Q	-0.035***	-0.007**	-0.023***
Volatility in previous year	0.161***	0.061*	0.096
Constant	0.541***	0.087	0.083
Industry fixed effects	Yes	Yes	Yes
Observations	7,756	7,305	7,310
R^2	0.17	0.24	0.16

Table 4: Frequencies of negative and positive words in conference calls

This table presents panel regressions. The dependent variable is the frequency of negative and positive words, respectively, in presentations (columns 1-2), in answers (columns 3-4), and in analysts' questions (columns 5-6). The other variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses for the main variables of interests. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1) Presentation negative frequency	(2) Presentation positive frequency	(3) Answers negative frequency	(4) Answers positive frequency	(5) Questions negative frequency	(6) Questions positive frequency
Stock return in previous quarter	-0.025***	0.031***	-0.012***	0.018**	-0.010**	0.018*
	(-4.61)	(2.98)	(-3.28)	(2.36)	(-2.03)	(1.74)
Change in earnings from previous quarter	-0.130*	0.139*	-0.020	0.086**	-0.040	0.052*
scaled by share price 5 days ago	(-1.84)	(1.81)	(-0.86)	(2.41)	(-1.50)	(1.66)
Earnings surprise decile this quarter	-0.018***	0.026***	-0.004***	0.013***	-0.008***	0.014***
	(-14.14)	(14.90)	(-7.35)	(10.70)	(-10.59)	(11.57)
Market return in previous quarter	-0.408***	0.265***	-0.138***	0.223***	-0.180***	0.215***
	(-10.93)	(4.20)	(-7.99)	(5.38)	(-7.43)	(4.80)
Ln(assets)	0.011	0.075***	0.018***	0.006	0.021***	-0.012
Tobin's Q	-0.046***	0.060***	-0.012***	0.031***	-0.015***	0.027***
Volatility in previous year	0.087*	-0.471***	0.002	-0.395***	-0.080***	-0.281***
Constant	0.425***	0.716***	0.085*	0.893***	0.118**	0.845***
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,849	7,849	7,849	7,849	7,481	7,481
R^2	0.13	0.05	0.08	0.04	0.08	0.04

Table 5: Evasive tactics in conference calls, part 1: Inconsistency in tone

This table presents panel regressions. The dependent variable is the difference in managerial tone between presentations and answers. Columns 1-2 use the difference, Columns 3-4 use the absolute difference. The other variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses for the main variables of interests. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1) Difference in tone between presentations and answers	(2) Absolute difference in tone
Stock return in previous quarter	-0.016	-0.022***
	(-1.61)	(-3.10)
Change in earnings from previous quarter,	-0.197	-0.276**
scaled by share price 5 days ago	(-1.43)	(-2.16)
Earnings surprise decile this quarter	-0.016***	-0.015***
	(-6.73)	(-6.51)
Market return in previous quarter	-0.279***	-0.234***
	(-4.17)	(-4.01)
Negativity in Analysts' Questions	-0.045***	0.077***
	(-2.85)	(6.12)
Ln(assets)	-0.014	-0.009
Tobin's Q	-0.017***	-0.013***
Volatility in previous year	0.062	0.088**
Constant	0.238**	0.227***
Industry fixed effects	Yes	Yes
Observations	7,305	7,305
R^2	0.03	0.09

Table 6: Evasive tactics in conference calls, part 2: Tense use and tense switches

This table presents panel regressions. The dependent variable in columns (1) to (6) is the percentage of verbs in the stated tense in presentations and answers, respectively. The dependent variable in columns (7) is the share of past-oriented questions of analysts that get answers oriented toward the present or future. The dependent variable in column (8) is the share of present- or future-oriented questions of analysts that get answers oriented toward the past. The other variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses for the main variables of interests. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Presentations: Percentage of verbs in...			Answers: Percentage of verbs in...			Tense switch from analyst question to manager answer	
	Past tense	Present tense	Future tense	Past tense	Present tense	Future tense	Past to present/future	Present/future to past
Stock return in previous quarter	-0.001	-0.095	0.100	0.128	-0.046	-0.079	-0.025	0.344*
	(-0.01)	(-0.52)	(0.92)	(0.81)	(-0.29)	(-0.61)	(-0.05)	(1.93)
Change in earnings from previous quarter,	2.297**	-1.883**	-0.432	-1.788	0.991	0.787	-0.527	0.734
scaled by share price 5 days ago (%)	(2.50)	(-2.14)	(-1.23)	(-1.29)	(0.77)	(1.44)	(-0.34)	(1.34)
Earnings surprise decile this quarter	0.107***	-0.052**	-0.056***	-0.018	0.066***	-0.048***	0.022	-0.035
	(3.65)	(-2.17)	(-4.25)	(-0.77)	(2.89)	(-2.72)	(0.28)	(-1.31)
Market return in previous quarter	2.952***	-2.887***	-0.075	1.893**	-1.286*	-0.610	4.141*	2.609***
	(3.13)	(-3.98)	(-0.16)	(2.44)	(-1.76)	(-1.11)	(1.67)	(3.05)
Negativity in Presentations	1.448***	-1.514***	0.039	0.523**	-0.553**	0.038	-1.650**	-0.064
	(3.92)	(-5.15)	(0.29)	(2.00)	(-2.32)	(0.23)	(-2.48)	(-0.27)
Negativity in Analysts' Questions				0.584***	-0.610***	0.028	-1.614***	-0.097
				(4.27)	(-5.28)	(0.32)	(-4.16)	(-0.63)
Ln(assets)	0.300	-0.147	-0.120	-0.200	0.077	0.111	-1.360***	-0.545***
Tobin's Q	0.580**	-0.417**	-0.168	-0.111	0.110	-0.007	0.179	-0.212**
Volatility in previous year	-4.183***	2.960***	1.277*	-2.905***	3.613***	-0.679	4.890*	-1.471
Constant	51.296***	36.321***	12.083***	32.505***	53.271***	14.335***	53.974***	16.827***
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,756	7,756	7,756	7,310	7,310	7,310	7,307	7,306
R^2	0.05	0.05	0.03	0.05	0.04	0.04	0.03	0.07

Table 7: Evasive tactics in conference calls, part 3: Complexity

This table presents panel regressions. The dependent variable in columns (1) and (2) is the complexity (number of words per sentence) in presentations and answers, respectively. The dependent variable in column (3) is the difference of complexity in answers minus the complexity in presentations. The other variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses for the main variables of interests. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)
Complexity in	Presentations	Answers	Difference Answers - Presentations
Stock return from previous quarter	-0.023	-0.172*	-0.124
	(-0.42)	(-1.68)	(-1.22)
Change in earnings from previous quarter	0.178	0.212	-0.116
scaled by share price 5 days ago	(0.44)	(0.33)	(-0.24)
Earnings surprise decile	0.002	-0.034**	-0.042***
	(0.20)	(-2.30)	(-3.02)
Negativity in Analysts' Questions		0.085	0.051
		(1.22)	(0.81)
Negativity in Presentations		-0.062	-0.217**
		(-0.61)	(-2.16)
Market return in previous quarter (%)	0.775**	-1.317***	-1.219***
	(2.53)	(-2.74)	(-2.60)
Ln(assets)	0.069	0.009	0.080
Tobin's Q	-0.009	0.098	0.078
Volatility in previous year	-2.533***	-1.096*	0.762
Industry fixed effects	Yes	Yes	Yes
Constant	23.253***	22.597***	-1.656
Observations	7,775	7,310	7,310
R^2	0.03	0.03	0.04

Table 8: Stock return reactions around the conference call

This table presents panel regressions. The dependent variable is CAR0toP1, the two-day, [0,1] absolute cumulative market-adjusted stock return on and after the conference call date. The residuals from the market model are used as abnormal returns. The estimation window for the market parameters is in the period [-120, -21] prior to the earnings conference call. We require at least 60 observations in this time period. The value-weighted stock market return from CRSP serves as our benchmark return. We winsorize CAR0toP1 at the 1 and the 99 percent levels. The explanatory variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses for the main variables of interests. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Negativity in Presentations	-0.013***	-0.005***			-0.012***	-0.004**		
	(-5.18)	(-2.63)			(-4.57)	(-2.07)		
Negativity in presentations * earnings surprise decile		-0.002**				-0.001		
		(-2.24)				(-1.35)		
Negativity in Answers			-0.011***	-0.007***	-0.006**	-0.005**		
			(-3.34)	(-3.16)	(-2.21)	(-2.47)		
Negativity in answers * earnings surprise decile				-0.002***		-0.002***		
				(-3.57)		(-3.32)		
Absolute difference in negativity of presentation and answers							-0.007***	-0.002
							(-3.08)	(-1.24)
Abs. difference in negativity of presentation and answers * earnings surprise decile								-0.002***
								(-3.10)
Stock return in previous quarter		-0.009***		-0.009***		-0.009***		-0.009***
		(-4.61)		(-4.52)		(-4.64)		(-4.45)
Change in earnings from previous quarter,		0.086***		0.087***		0.088***		0.086***
scaled by share price 5 days ago		(5.93)		(5.86)		(6.06)		(5.68)
Earnings surprise decile this quarter		0.005***		0.006***		0.006***		0.005***
		(12.32)		(14.76)		(12.19)		(15.11)
Market return in previous quarter		-0.007		-0.007		-0.008		-0.005
		(-0.57)		(-0.57)		(-0.66)		(-0.43)
Ln(assets)	-0.001	-0.001	-0.000	-0.001	-0.001	-0.001	-0.001	-0.001
Tobin's Q	0.002***	0.002**	0.002***	0.002***	0.002***	0.002**	0.002***	0.002***
Volatility in previous year	-0.001	-0.003	-0.003	-0.004	-0.001	-0.003	-0.003	-0.004
Constant	0.006	-0.000	0.002	-0.001	0.006	0.001	0.001	-0.002
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,028	7,579	8,014	7,567	8,009	7,564	8,009	7,564
R^2	0.02	0.07	0.01	0.07	0.01	0.07	0.01	0.07

Table 9: Tone, evasive tactics, and analyst reactions

This table presents panel regressions. The dependent variables are as follows: In Columns (1) and (2): Revision frequency, which is the number of revisions after the earnings announcement of quarter t until the earnings announcement of quarter t+1, scaled by the average number of analysts. In Columns (3) and (4): Forecast variance, which is the variance of analysts' forecasts outstanding at the end of the following quarter. In Columns (5) and (6): Immediate reactions, which is the share of analysts covering the firm who make a forecast for the next quarter within three working days after the earnings announcement. The explanatory variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses for the main variables of interests. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)	(5)	(6)
	Revision frequency		Forecast variance		Immediate reactions	
Negativity in Presentations	0.033*		0.099***		-0.029***	
	(1.94)		(3.67)		(-3.28)	
Negativity in Answers	0.062***		0.057		-0.033***	
	(3.03)		(1.34)		(-3.44)	
Absolute difference in negativity		0.036**		0.063***		-0.030***
of presentation and answers		(2.15)		(2.66)		(-3.54)
% Future Tense Words in Presentation		0.003***		0.001		-0.003***
		(2.80)		(0.64)		(-3.21)
% Past Tense Words in Answers		0.000		0.003		-0.000
		(0.47)		(1.38)		(-0.97)
Market return in previous quarter	-0.573***	-0.591***	0.064	0.032	0.257***	0.269***
	(-10.24)	(-10.44)	(0.38)	(0.19)	(7.71)	(8.02)
Constant	-0.363***	0.090	-0.306***	-0.174	0.676***	0.350***
	(-3.20)	(0.50)	(-3.06)	(-0.96)	(10.86)	(2.98)
Observations	7,213	7,213	7,096	7,096	7,213	7,213
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.20	0.20	0.04	0.02	0.18	0.18

Table 10: Predicting earnings with textual analysis

This table presents panel regressions. The dependent variable is earnings in the next quarter. *Negativity Residual, Presentations* is the residual of regression (1) in Table 3. *Negativity Residual, Answers* is the residual of regression (2) in Table 3. $1_{\{Residual>0\}}$ is an indicator variable which is equal to one if the corresponding residual is positive; it is zero if the residual is negative. The other variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)	(4)	(5)
Average forecast		0.897***	0.643***	0.872***	0.881***
		(9.69)	(6.80)	(9.67)	(9.72)
Current earnings	0.535***		0.173		
	(4.83)		(1.57)		
Earnings previous quarter	0.221*		0.165		
	(1.85)		(1.49)		
Earnings surprise decile	0.011**		0.017***		
	(2.39)		(4.34)		
Negativity in Presentations				-0.169***	
				(-3.78)	
Negativity in Answers				-0.143**	
				(-2.39)	
Absolute Negativity Residual * $1_{\{Residual>0\}}$, Presentations					-0.165***
					(-3.01)
Absolute Negativity Residual * $1_{\{Residual<0\}}$, Presentations					0.015
					(0.22)
Absolute Negativity Residual * $1_{\{Residual>0\}}$, Answers					-0.144*
					(-1.74)
Absolute Negativity Residual * $1_{\{Residual<0\}}$, Answers					0.08
					(0.76)
Market return in previous quarter	0.460***	0.532***	0.517***	0.391***	0.522***
	(4.58)	(5.17)	(5.32)	(3.98)	(5.19)
Constant	0.104**	0.030	-0.030	0.127**	0.053
	(2.39)	(0.56)	(-0.64)	(2.18)	(0.96)
Observations	6,991	6,991	6,991	6,991	6,991
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
R^2	0.40	0.40	0.41	0.42	0.45

Table 11: Forecast errors and excessive negativity

This table presents panel regressions. The dependent variable is the forecast error, that is the actual earnings in quarter t+1 minus the consensus forecast (which is the average of all forecasts for quarter *t+1* outstanding 3 days after the earnings announcement for quarter *t*), scaled by the stock price *Negativity Residual, Presentations* is the residual of regression (1) in Table 3. *Negativity Residual, Answers* is the residual of regression (2) in Table 3. $1_{\{Residual>0\}}$ is an indicator variable which is equal to one if the corresponding residual is positive; it is zero if the residual is negative. Column (3) considers those firms for which the difference in the variability of tone in the answers and the variability in tone in the presentations is in the lowest tercile. Column (4) considers those firms which are in the highest tercile in terms of this measure. The other variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3) "Saynothingers" Q1 of Diff Var A-Var P	(4) "Revealers" Q3 of Diff Var A-Var P
Absolute Negativity Residual * $1_{\{Residual>0\}}$, Presentations	0.238**	0.180**	0.170**	0.033
	(2.54)	(2.26)	(2.51)	(0.14)
Absolute Negativity Residual * $1_{\{Residual<0\}}$, Presentations	0.074	-0.006	0.193	-0.216
	(0.63)	(-0.06)	(1.25)	(-1.05)
Absolute Negativity Residual * $1_{\{Residual>0\}}$, Answers	0.268***	0.277***	0.884***	0.188**
	(3.17)	(2.95)	(2.79)	(2.08)
Absolute Negativity Residual * $1_{\{Residual<0\}}$, Answers	-0.005	0.070	0.247	-0.015
	(-0.04)	(0.61)	(0.94)	(-0.09)
Market return in previous quarter	-0.671***	-0.533***	-1.066***	-0.462
	(-4.24)	(-3.71)	(-3.49)	(-1.56)
Frequency of forecast revisions for this quarter's earnings		0.379***	0.357***	0.486***
		(6.93)	(3.68)	(4.84)
Constant	-0.077	-0.287	-0.468	-0.801*
	(-0.31)	(-1.09)	(-1.07)	(-1.68)
Observations	6,813	6,371	2,189	1,994
Industry fixed effects	Yes	Yes	Yes	Yes
Firm-level controls	Yes	Yes	Yes	Yes
R^2	0.03	0.07	0.12	0.08

Table 12: Mean forecast errors classified by the size of negativity residuals

This table presents mean analyst forecast errors for six groups of companies. We create three groups for positive negativity residuals and three groups for negative negativity residuals. We use residuals from the regression (1) in Table 3.

		Negativity residuals		FE	Abs. (FE)	Pos. FE	Neg. FE		Revision frequency	
		Min	Max	Mean	Mean	Mean	Mean	% pos. FE	Mean	N
Negative	1	-0.916	-0.282	0.078	0.307	0.590	-0.216	32.2%	0.343	1496
	2	-0.282	-0.146	0.045	0.294	0.531	-0.207	31.7%	0.392	1515
	3	-0.146	0.000	-0.011	0.304	0.459	-0.271	32.6%	0.426	1440
Positive	4	0.000	0.127	-0.077	0.288	0.402	-0.287	27.8%	0.424	932
	5	0.127	0.346	0.130	0.396	0.801	-0.275	33.4%	0.463	903
	6	0.346	7.457	0.878	0.740	2.757	-0.595	36.7%	0.589	851
	All	-0.916	7.457	0.134	0.364	0.873	-0.283	32.3%	0.427	7137

Table 13: Approaching bankruptcy and managerial tone

This table presents panel regressions. The dependent variable in column (1) is negativity in presentations. In column (2) it is the negativity residual, presentations, which is the residual of regression (3) in Table 3. The distance variables are binary indicators equal to 1 when the company is the stated number of quarters away from bankruptcy. The other variables are defined in the notes to Table 1 and in the text. T-statistics are shown in parentheses. The underlying standard errors are clustered on the company level and and robust to heteroskedasticity. *** p<0.01, ** p<0.05, * p<0.1.

	(1) Negativity	(2) Negativity Residuals
Stock return in previous quarter	-0.009	
	(-0.70)	
Change in earnings from previous quarter,	-1.436***	
scaled by share price 5 days ago	(-6.70)	
Earnings surprise decile	-0.036***	
	(-13.97)	
Market return in previous quarter	-0.827***	
	(-9.97)	
Distance = 1 quarter	0.591***	0.538***
	(4.41)	(4.10)
Distance = 2 quarters	0.659***	0.653***
	(4.98)	(4.94)
Distance = 3 quarters	0.310**	0.050
	(2.20)	(0.35)
Distance = 4 quarters	-0.042	-0.021
	(-0.26)	(-0.13)
Distance = 5 quarters	-0.227	-0.233
	(-1.51)	(-1.55)
Distance = 6 quarters	0.013	0.015
	(0.08)	(0.10)
Constant	0.445***	-0.028
	(19.93)	(-1.26)
Observations	2,552	2,552
R^2	0.14	0.19

Table 14: Predicting bankruptcy with logistic regressions

This table compares the classification accuracies achieved with three bankruptcy prediction models. Model (1) uses accounting ratios only. Model (2) adds negativity residuals in presentations. Model (3) adds the number of uncertain words in the presentations. We report the respective percentages of correctly specified observations in two categories: bankrupts and non-bankrupts. We also compute a pseudo-R2 to assess the quality of the models.

	Classification accuracy (cut point = 0.5)		
Model	(1) **Accounting ratios**	(2) **Accounting ratios** **Negativity**	(3) **Accounting ratios** **Negativity** **Paltering**
Bankrupts	53.3%	57.4%	61.8%
Non-bankrupts	97.9%	96.7%	96.1%

Figure 1: Evolution of the managers' tone before a bankruptcy

This graph plots negativity (the ratio of negative to positive words) in the managers' presentations in conference calls. Distance is the time in quarters away from bankruptcy. The bankruptcy sample includes the 50 largest bankruptcies in 2007 to 2009 for which conference call transcripts and other data are available. The non-bankrupt companies are a random sample of 100 S&P 500 firms.