

# **Does it pay to be bold? Financial analysts' thirst for visibility and their tone during earnings conference calls.**

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## **Abstract.**

This paper examines the relationship between financial analyst career concerns and their communication style during earnings conference calls. Using a large sample of earnings conference calls for the 2005–2018 period for US listed firms, we find that less experienced and prestigious analysts are more likely to use a bold tone during question and answer sessions of earnings conference calls, suggesting that analysts use their communication style to gain visibility. Results also show that by being bolder analysts have greater chances to enhance their career prospects.

**Keywords:** financial analysts, reputation concerns, boldness, conference calls, textual analysis

## **1. Introduction**

Earnings conference calls are public spoken events intended to connect a company's top management with participating analysts and investors. They are divided into two sessions: the *management discussion* session (hereafter, MD) and the *question-and-answer* session (hereafter, QA) where financial analysts can intervene to ask questions and request clarifications to company representatives.

Extensive research documents that earnings conference calls are informative events for financial analysts who have the opportunity to capture public signals that can facilitate the generation of new and valuable information (Bowen et al., 2002; Kimbrough, 2005; Soltes, 2014). Competition among analysts to access these important and informative meetings with firm representatives provides managers with a certain degree of discretion to discriminate

among analysts by granting more participation to those who show a higher degree of friendliness toward the firm (Mayew, 2008).

Whilst information retrieval and economic motives are determinant factors to explain why analysts strive to participate on conference calls, observational evidence found by Abraham and Bamber (2017) suggests that analysts' competition to attend such events is also motivated by their search for publicity. In fact, they define QA sessions of conference calls as "dramaturgical encounters" where analysts are keen to be seen to ask good questions, put their expertise on public display, and increase their visibility with the aim to enhance their career and profile prospect.

The objective of this paper is to empirically assess if analysts' thirst for visibility has an impact on their communication style in earnings conference calls. Precisely, using a sample of 20,509 earnings conference calls held over the period 2005-2018, we investigate whether financial analysts strategically adopt a bold linguistic tone to attract attention.

Linguistic tone, or sentiment, measured with textual analysis tools and generally defined as the frequency difference between words with positive and negative meanings (Davis et al., 2015), is widely used in finance and accounting studies to capture the optimism (or pessimism) of financial disclosure. These studies find that the tone of corporate disclosure is related to the firm performance and that the stock market reacts to the soft signals it conveys (for example, Price et al., 2012). In this paper we develop a new dimension of linguistic tone that captures the boldness of the analyst communication style. Our primary measure of tone boldness is *|Bold tone|* and it is defined as the absolute distance of one analyst's tone in a conference call from the average tone of the other analysts in the same call. In addition to this metric we employ for robustness *|Abnormal tone|*, which is obtained by decomposing the analyst tone, into two components: the normal component that reflects the expected analyst tone based on concurrent information about current and future firm

performance, and the residual abnormal component. We take the absolute value of analyst abnormal tone to measure the analyst tone that is unexplained by economic news or other company fundamentals. Results consistently indicate that analysts with potentially greater incentives to boost their profile, such as those with less experience and without an established reputation, employ a bolder linguistic tone during QA sessions of earnings conference calls. Similarly, we find that female financial analysts are bolder than their male colleagues. Our findings also suggest that bolder analysts are not associated with more accurate earnings forecasts, which implies that a bolder tone does not reflect analyst skills in processing public information or her superior access to management. Instead, our conjecture is that experienced analysts and analysts with a strong reputation are less inclined to use a bolder tone during earnings conference calls as they face a lower pressure to boost their image as compared to their younger colleagues. Interestingly, we find that analysts become less bold after a prestigious brokerage house hires them. Finally, we address the question whether financial analysts can effectively use their linguistic tone strategically to enhance their career prospects. Results suggest that analysts employing a bolder tone during conference calls have lower chances to experience negative career separations and, to some extents, better chances to enhance their professional profile.

This paper is related to the extensive literature that studies the incentives (and disincentives) of herding by economic agents. The model proposed by Prendergast and Stole (1996) suggests that agents without an established a reputation for themselves, the “impetuous youngsters”, overemphasize their own information and exaggerate their differences with others to appear more talented. Similarly, the model on analyst herding behavior studied by Graham (1999) indicates that analysts with high reputation herd more to protect their current status. Consistent with these previous studies, a recent paper by Fijns and Huynh (2018) finds that less experienced analysts have an incentive to issue bolder earnings

forecasts as by doing so they can differentiate themselves from the others and gain more visibility. This work adds to this literature by showing that analyst reputation and visibility concerns have a similar impact on the linguistic style of analyst talks in earnings conference calls, in that less experienced and less prestigious analysts tend use a bolder tone when interacting with company management to attract more attention.

This paper also contributes to the growing research on accounting and finance that studies the language of corporate disclosure and, more specifically, of earnings conference calls. The majority of these studies focuses on company executive talks to investigate the information content of language use, whether it reflects management strategic incentives, or other manager characteristics (Price et al., 2012; Larcker and Zakolyukina, 2012; Davis et al., 2015). More recently, a growing number of papers has focused the attention on managers' interlocutors in earnings conference calls, sell-side analysts. Brockman et al. (2015) find that the tone of analyst communications reflects firm economic news and that the market reacts to analyst tone more strongly than to manager tone. Other studies suggest that analysts adapt their tone to please the management and to increase their access to firm relevant information. Milian et al. (2017) find that the favorableness of analysts' language in earnings conference calls reflects their access to a firm's information and management. Similarly, Cohen et al. (2020) find that analyst tone in earnings calls can be indicative of some friendliness of the analyst toward the firm, and that the more positive of questions analysts ask in a call, the more likely they are to be called upon again in future calls. Recently, De Amicis et al. (2020) find that financial analysts tend to be biased against female executives as their tone is more negative when interacting with a female CEO or CFO.

Finally, this paper supplements the large body of literature on analyst career concerns (Hong et al., 2000; Hong and Kubick, 2003; Clement and Tse, 2005) by showing that

financial analyst communication style in earnings conference calls can impact on their career prospects.

The rest of the paper is organized as follows: the next section describes the data sample and empirical strategy; Sections 3 through 7 present the results and Section 8 concludes.

## 2. Data and methodology

### 2.1 Data and sample construction

To construct our sample of analyst-specific disclosures in quarterly earnings conference calls we manually download the set of call transcripts for US publicly traded firms from Bloomberg for the period from 2005 to 2018. We begin collecting calls from 2005 because there are substantially fewer earnings conference call transcripts in Bloomberg prior to 2005. The full text of each transcript is parsed to extract the name and ticker symbol of the firm conducting the call, the date of the event, and the full names of the analysts who were called in. The dependent variables, *|Bold tone|* and *|Abnormal tone|*, measure the relative boldness of an analyst speech with respect to the other analysts in the same call; therefore, we retain only conference calls with more than two analysts taking the floor. Next, we match analyst names from the transcripts back to the brokerage house and analyst surname and first initial available on IBES recommendation file. To reduce the risk of incorrect matches due to analyst surname similarities, ticker symbols from the transcripts are matched with company tickers provided by IBES conditioning each analyst name match to the availability on IBES of a stock recommendation issued by the analyst for the firm in the same calendar year as the year of the conference call. The IBES recommendation file provides a unique code that identifies each analyst and brokerage house in the database. We use these codes to retrieve the analyst earnings forecasts available at the IBES history file. We use the ticker symbol and company name in each transcript to merge the transcript data with firm quarterly financial

information obtained from Compustat. All observations with missing records on the IBES and Compustat databases are excluded. The full and final sample consists of 108,061 analyst participations by 3,623 unique financial analysts occurring within 20,509 conference calls. Analyst participations by year, together with the number of unique firms organizing conference calls and the number of analysts called in are reported in Table 1.

[Table 1 here]

## 2.2 Measures of analyst tone boldness and methodology

To construct our measures of analyst tone boldness, we first parse the text of each transcript to extract the section corresponding to the QA and the talk of any speaker on the call identified as an analyst. For each financial analyst we categorize the words spoken into positive and negative according to the financial wordlist compiled by Loughran and McDonald (2011). This list includes 2,337 negative words, such as *anomaly*, *deterioration*, *weakly* and *serious*; and 353 positive words, such as *achieve*, *attain*, *excellent*, *improve* and *profitable*. Following the literature, e.g. Davis et al. (2015), financial analyst tone (*Tone*) is defined as the difference between positive and negative words scaled by the length of their speech (the total number of words spoken by the analyst in the QA).

The first measure of tone boldness we employ is the absolute deviation of the tone of analyst  $i$  from the average tone of the other analysts participating to the same conference call  $z$ . As in Clement and Tse (2005), we scale the variable  $|Bold\ tone_{i,z}|$  to range from 0 to 1 using the following transformation:

$$|Bold\ tone_{i,z}| = \frac{|Tone\ deviation_i| - Min|Tone\ deviation_z|}{Max|Tone\ deviation_z| - Min|Tone\ deviation_z|}$$

For robustness we define a second measure of tone boldness,  $|Abnormal\ tone_{i,z}|$ , that captures the absolute abnormal component of an analyst tone that cannot be explained by economic news or other company fundamentals (Huang et al., 2014; Chen et al., 2018;

Bochkay et al., 2019), and it is obtained as the absolute value of the residuals from the estimation of the following regression<sup>1</sup>:

$$\begin{aligned}
 \text{Tone}_{i,z} = & \alpha + \beta_1 |\text{Bold forecast}| + \beta_2 \text{Dispersion} + \beta_3 \text{UE} + \beta_4 \text{ROA} + \beta_5 \text{Mkt/Book} \\
 & + \beta_6 \text{Return} + \beta_7 \text{LogTA} + \varepsilon
 \end{aligned}
 \tag{1}$$

*Tone* is the tone of each financial analyst in a conference call. The extensive literature on analyst herding behaviour suggests that forecasting boldness is related to the analyst's reputation, career concerns, and self-assessed ability (Hong and Kubik., 2003; Clement and Tse, 2005). To control for the impact of earnings forecasting boldness on analyst tone we include the independent variable *|Bold forecast|* defined as one of the forecasting boldness measures in Clement and Tse (2005). We collect analyst earnings forecasts before the conference calls from IBES history files. *|Bold forecast|* is the absolute distance of the forecast from the fiscal-quarter-end consensus for analyst following firm *y* in quarter *t* minus the minimum absolute distance for analysts who follow firm *y* in quarter *t*, with this difference scaled by the range in absolute distances for analysts following firm *y* in quarter *t*. *Dispersion* indicates analyst forecast uncertainty for a given firm quarter and it is calculated as the standard deviation of analyst earnings forecasts for a given quarter scaled by the firm price. The remaining control variables are indicators of the firm performance which we would expect to impact the analyst's sentiment in the conference call. As measures of current performance, we use the unexpected earnings for the quarter (*UE*) and quarterly return on assets (*ROA*). To partially capture growth opportunities and expectations of future performance, we include the market to book ratio (*Mkt/Book*) and quarterly stock returns relative to the previous quarter (*Return*). Finally, we use the (log of) total assets (*LogTA*) for

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<sup>1</sup> Results of Equation (1) are not reported for brevity reasons but are available from the authors upon request.

the quarter to control for the size of firm. Similar to  $|Bold\ tone|$ , also  $|Abnormal\ tone|$  is rescaled to range from 0 to 1 by applying the following transformation:

$$|Abnormal\ tone_{i,z}| = \frac{|Eq.(1)\ residuals_i| - Min|Eq.(1)residuals_z|}{Max|Eq.(1)residuals_z| - Min|Eq.(1)residuals_z|}$$

The first question this paper wants to address is whether analyst experience and reputation have an impact on the boldness of the analyst tone during the QA session of earnings conference calls. To this end, we estimate the following OLS regression model with brokerage house and year-quarter fixed effects:

$$\begin{aligned} K_{i,z} = & \alpha + \beta_1 Experience/Reputation_{i,t} + \beta_2 Industries_{i,t} + \beta_3 Companies_{i,t} + \beta_4 Female_i \\ & + \beta_5 An.\ sort_{i,z} + \beta_6 |Bold\ forecast_{i,y,t}| + \beta_7 Dispersion_{y,t} + \beta_8 Broker\ size_{i,t} \\ & + \theta\ Firm\ controls_{y,t} + Year-Quarter\ fixed\ effect + Firm\ fixed\ effect + \varepsilon \end{aligned} \quad (2)$$

where  $K = \{|Bold\ tone_{i,z}|; |Abnormal\ tone_{i,z}|\}$ .

$Experience/Reputation_{i,t}$  are the independent variables of interest in this model. Following the literature (e.g., Hong and Kubik, 2003; Malmendier and Shanthikumar, 2014; Milian et al., 2017), we use alternatively the variables *Experience*, *All-star* and *StarMine* as proxies for the analyst experience and the analyst reputation. *Experience* indicates the number of calendar years the analyst appears on the IBES database prior to the calendar year of the conference call. To allow comparison of coefficients, *Experience*, is scaled to range between 0 and 1 – from the least to the most experienced analyst – by subtracting from any analyst  $i$ 's  $Experience_{i,z,t}$  in a call  $z$  the minimum of  $Experience_{z,t}$  and dividing this difference for the range of  $Experience_{z,t}$ .

The indicator variable *All-star* is constructed manually by matching back to analyst names in the sample of transcripts the annual data published by Institutional Investor (II), a trade publication in the asset management industry that each year surveys portfolio managers and buy-side analysts to generate a ranking of the investors' favorite analysts and research



firms across different industries and macroeconomic sectors. The dummy *All-star* is equal to one if the analyst is ranked best analyst in her sector in the calendar year prior to the conference call, and zero otherwise. For robustness, we use a second indicator of the analyst reputation already used in the literature (e.g., Kadous et al., 2010), *StarMine*. Similar to *All-star*, *StarMine* is constructed manually and it is equal to one if an analyst has received the Refinitiv StarMine best analyst award in the year before the conference call, and zero otherwise. The Refinitiv StarMine Analyst Award is intended to objectively measure the performance of analysts based on the returns of their buy/sell recommendations and the accuracy of their earnings estimates. Each year the awards are assigned to the analysts based on the prior calendar-year performance of recommendations. The remaining independent variables are additional analyst-specific controls and firm-level characteristics. *Industries* is a dummy variable equal to one if the number of industries covered by an analyst in the year before the conference call is larger than two, and zero otherwise. *Companies* is the number of companies an analyst follows in the year before the call scaled, as for *Experience*, to range from 0 to 1<sup>2</sup>. The QA session of conference calls is typically supervised by an operator who is responsible for allowing financial analysts to intervene. *An. sort* indicates the position of each analyst in the queue for asking a question, and it starts at one for the first analyst to speak. *Female* is a dummy variable equal to one if the analyst is female, and zero otherwise. IBES does not report the gender of the analysts; therefore, we construct this variable manually by searching each analyst gender through different web sources (e.g., Linked-in). *Broker size* indicates the size of the brokerage house an analyst works for measured as (the log of) the number of analysts employed by the brokerage house in the year before the conference call. The other independent variables are analyst forecast *Dispersion* and the set of firm controls

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<sup>2</sup> To allow comparison of coefficients, *Companies*, is scaled to range between 0 and 1 – from the analyst covering the smallest number of companies to the analyst covering the largest – by subtracting from any analyst  $i$ 's  $Companies_{i,z,t}$  in a call  $z$  the minimum of  $Companies_{z,t}$  and dividing this difference for the range of  $Companies_{z,t}$ .

already included in Eq. (1) as previously described. Definitions of all the variables used are provided in Appendix A.

### 3. Baseline results

#### 3.1 Descriptive statistics and correlations

Table 2 presents descriptive statistics for our sample of 108,061 analyst participations. The mean analyst participation is 137 words in length with 4 question per analyst on average. The average tone of their questions (*Tone*) is close to zero, indicating a relatively neutral analyst tone. Female financial analysts are largely underrepresented in this sample as they account for only 9.3% of analyst participations. About 5% of analyst participations were by analysts ranked among the best analysts by Institutional Investors and only 0.6% by StarMine Refinitiv best analysts. On average financial analysts cover two or more different industries and approximately 9 different companies. The average general experience of an analyst (*Experience*) is of 11 years.

[Table 2 here]

Table 3 presents the Pearson correlations for the main variables used in this study. We find preliminary evidence of a negative association between analyst tone boldness and their experience and reputation. Both  $|Bold\ tone|$  and  $|Abnormal\ tone|$ , are in fact negatively correlated with the variables *Experience*, *All-Star* and *StarMine*. Analyst tone boldness is instead positively correlated with analyst forecasting boldness ( $|Bold\ forecast|$ ). The positive relationship of analyst *Talk* and *No. of questions* with the variables *All-Star*, *StarMine* and *Experience* suggests that prestigious and experienced analysts tend to dominate the QA. Interestingly, the dummy *Female* is positively correlated with both measures of analyst tone boldness but negatively correlated with *Talk* and *No. of questions*. Female analysts, All-star analysts and analysts working for bigger brokerage houses tend to be among the first to take

the floor in the QA, as the negative relationship between these three variables and *An. sort* would suggest.

[Table 3 here]

### 3.2 Determinants of analyst tone boldness

Table 4 presents results on the relationship between analyst tone boldness,  $|Bold\ tone|$  and  $|Abnormal\ tone|$ , and the analyst general experience and reputation as described in Eq. (2). Results in Column 1 indicate that as experience increases analyst tone boldness decreases by approximately 2%, with this result being significant at 1% level. Similarly, coefficients of *All-star* and *StarMine*, reported in Columns 2 and 3, are both negative and significant at the 1% and 5% level respectively, suggesting that analyst reputation is inversely related to  $|Bold\ tone|$ . Results are qualitatively similar in Columns 4 to 6 where Eq. (2) is estimated using analyst  $|Abnormal\ tone|$  as dependent variable. Coefficients of analyst experience in Column 4 as well as their reputation in Column 5 are negative and significant at 1% level. As in Column 3, the dummy *StarMine* in Column 6 is negatively related to  $|Abnormal\ tone|$  but the coefficient is no longer significant. Similar to Kumar (2010) that finds that female financial analysts issue bolder earnings forecasts, all regressions show a positive and statistically significant coefficient of the dummy *Female*, suggesting that female financial analysts adopt a bolder communication style than their male counterparts. This result seems to contradict the existing literature that points to fundamental differences between men and women, in that women are generally more risk averse (Eckel and Grossman 2008, Sapienza et al., 2009) and less keen on being exposed to competition (Gneezy et al., 2003). However, most of these studies focus on the general population; thus, it is unclear whether their findings extend to the population of women entering the financial career (Kumar, 2010; Adams and Funk, 2012). Furthermore, Adams and Funk (2012) argue that women need to be more extreme in some characteristics than men in order to succeed in highly competitive and male dominated

industries, which could explain why female analysts exhibit higher levels of tone boldness. Similarly, De Amicis et al. (2020) propose that female executives tend to exhibit a more positive tone during earnings conference calls as they feel higher pressure than men to signal their ability. The coefficient of *An. sort* is negative and significant in all regression models indicating that the tone of the analyst questions flattens as the QA session comes closer to the end. Results also show a positive relationship between the measures of analyst tone boldness and the number of companies covered even if the coefficient of *Companies* is weakly significant only in Column 4. Durand et al. (2014) find that analyst confidence increases as they are required to perform more difficult tasks, such as analyze more complex companies, and as their confidence increases so does their propensity to move away from the herd. In a similar way, these findings suggest that analysts following a larger number of firms tend to overestimate their abilities and, as a consequence, adopt a bolder tone during earnings conference calls. A similar argument could also explain the significant and positive coefficient of analyst forecast *Dispersion* in Columns 1 to 3.

[Table 4 here]

#### *Within analyst and within firm analysis*

Eq. (2) already includes a number of firm and analyst controls that could explain variations in analyst tone boldness during earnings conference calls. However, to exclude that previous findings are driven by time-invariant analyst characteristics or by characteristics of the firm hosting the call, we run again Eq. (2) and replace brokerage houses fixed effects with analysts fixed effects and firms fixed effects. Results reported in Table 5 largely confirm the previous results. Coefficients of *Experience* are still negative and significant at 1% level in Columns 1 and 4 after controlling for analyst fixed effects<sup>3</sup>. Similarly, coefficient estimates obtained including the firm fixed effect confirm the negative and significant impact of both

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<sup>3</sup> Our proxies for analyst reputation, *All-star* and *StarMine*, do not exhibit much variation over time at the analyst level. For this reason we control for the analyst fixed effects only when the analyst experience is included in the regressions as main independent variable of interest.

*Experience* (Columns 2 and 5) and the indicator *All-star*<sup>4</sup> (Columns 3 and 6) the boldness of analyst tone. The dummy *Female* continues to be positive and strongly significant also in the model estimated with firm fixed effects. Finally, the coefficient of *Broker size* is negative and significant when firm fixed effects are included in the regressions, indicating that analysts working for bigger brokerage houses are less inclined to employ a bolder tone when questioning the management of the firm.

[Table 5 here]

#### 4. Additional analyses on analyst participation style in earnings conference calls

In this section we perform additional analyses to provide a more comprehensive picture of the analyst participation in earnings conference calls. The next paragraph furtherly explores the relationship between analyst experience and reputation with the boldness of their tone by considering also the sign of the analyst boldness. Next, we analyse if the amount of analyst interactions with the management team in a conference calls is influenced by the analyst experience and prestige.

##### 4.1 Sign of analyst tone boldness

Our results so far indicate that more experienced and reputed analysts are associated with lower levels of tone boldness. While the measures of tone boldness employed in the previous tests capture the magnitude of the distance of the analyst tone from the consensus, they do not account for the sign of such deviation. To get a deeper understanding of the mechanics of analyst linguistic choices during QA sessions we run a probit version of Eq. (2) and report the results in Table 6. The dependent variable is the dummy  $Boldest^+_{i,z}$  in Columns 1 and 3 and  $Boldest^-_{i,z}$  in Columns 2 and 4.  $Boldest^{+(-)}_{i,z}$  is set equal to one for the analyst  $i$  whose tone most positively (negatively) deviates from the tone of the other analysts in the

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<sup>4</sup> Results by estimating Eq. (2) using StarMine as a proxy for analyst reputation are qualitative similar and are available from the authors upon request.

same call  $z$ , and zero otherwise. The negative and statistically significant coefficient of *Experience* in Column 2 indicates that analysts are less likely to use an extremely negative tone as they become more experienced. The coefficient of *Experience* is still negative but not statistically significant in Column 1 where the dependent variable is *Boldest*<sup>+</sup>. Similarly, *All-star* is negative in both Columns 3 and 4 but weakly significant in Column 3 only, suggesting that more reputed analysts are less likely to please the management with a positive bold tone than the less prestigious ones. Soltes (2014) documents that developing a relationship with the senior management team at a specific firm takes time for financial analysts; therefore, it is likely that longer tenured analysts avoid negative tones to maintain such connections with the company executives. Differently, reputation concerns of All-star analysts might mitigate the potential bias in their behavior, thereby reducing their levels of optimism (Bradley et al., 2012).

[Table 6 here]

#### 4.2 Analyst talk and analyst questions

Analysts interviewed by Abraham and Bamber (2017) confirm that there is tacitly accepted value in shifting from backstage to frontstage as even small amounts of interactions with the company executives are signals of superior knowledge to their clients. However, the existing literature shows that analysts do not have all the same possibilities to ask a question during conference calls as companies have some discretion to discriminate among them (Mayew, 2008; Cohen et al., 2020).

To assess whether analyst reputation and experience impact on the amount of interactions they have with the firm managers, we run again Eq. (2) using analyst talk and questions as dependent variables. *Talk*, measures the number of words spoken by each analyst in a call, while *No. of questions* is the number of questions each analyst asks. Both variables are then rescaled to range from zero to one by subtracting from any analyst  $i$ 's

$Talk_{i,z}$  (*No. of question<sub>i,z</sub>*) in a call  $z$  the minimum of  $Talk_z$  (*No. question<sub>z</sub>*) and dividing this difference for the range of  $Talk_z$  (*No. of questions<sub>z</sub>*).

Contrary to what observed with regard to the analyst tone boldness in Section 2 and in line with Mayew (2008), results reported in Table 7 show that analyst experience and reputation are positively and significantly related to the number and length of their interactions with the firm representatives. Similarly, analysts working for bigger brokerage houses talk more than their colleagues from smaller broker firms. Analysts who are among the last in the queue to ask a question talk less and have fewer interactions with the managers. Interestingly, we find that female financial analysts ask less and shorter questions than their male colleagues. Taken together, these results suggest that QA sessions tend to be dominated by male experienced and reputed financial analysts leaving female analysts and the younger or less prestigious ones with fewer chances to connect with the firm representatives. One implication of this result could be that discriminated financial analysts, that have lower chances to intervene during the QA, have stronger incentives to adopt a bolder tone to gain visibility. Results from Table 7 also indicate that analysts who issued a bolder forecast for the quarter (*/Bold forecast/*) participate more actively during the QA by asking more and longer questions to managers. Finally, managers of firms with more positive quarterly ROA and managers of bigger firms (*LogTA*) receive less and shorter questions by the analysts in the call.

[Table 7 here]

## 5. Tone boldness and analyst forecasting skills

It could be argued that analyst tone boldness in a conference call is related to their ability to provide more accurate earnings forecasts. Although analysts' expertise could arise from skillful processing of public information, another common explanation for analysts' forecasting skills relies on superior access to management (Brown et al., 2015; Green et al.,

2014). Thus, bolder analyst tone could also reflect her access to firm management and private information. If these arguments were correct we would expect the analysts employing bolder linguistic tones in earnings calls to issue more accurate next quarter earnings forecasts.

To test this hypothesis, we run the following regression model:

$$\begin{aligned}
 |Accuracy_{i,y,t+1}| = & \alpha + \beta_1 |Tone\ boldness_{i,z}| + \beta_2 Experience_{i,t} + \beta_3 Female_i + \beta_4 Industries_{i,t} \\
 & + \beta_5 Companies_{i,t} + \beta_6 Broker\ size_{i,t} + \beta_7 |Bold\ forecast_{y,i,t}| + \beta_8 \\
 & Dispersion_{y,t} \\
 & + \beta_9 |Accuracy_{i,y,t}| + Year-Quarter\ fixed\ effect + Firm\ fixed\ effect + \varepsilon
 \end{aligned}
 \tag{3}$$

As in Clement and Tse (2005), the dependent variable  $|Accuracy_{i,y,t+1}|$  is a measure of analyst  $i$ 's forecast accuracy for firm  $y$  in quarter  $t+1$  after a conference call  $z$ , calculated as the maximum absolute forecast error for analysts who follow firm  $y$  in quarter  $t+1$  minus the absolute forecast error of analyst  $i$  following firm  $y$  in quarter  $t+1$ , with this difference scaled by the range of absolute forecast errors for analysts following firm  $y$  in quarter  $t+1$ . Brown (2001) shows that past accuracy strongly predicts future accuracy. For this reason, we also control for  $|Accuracy|$  defined as the analyst's accuracy in forecasting current earnings for the firm.  $|Tone\ boldness|$  is the main independent variable of interest in this model and it stands for  $|Bold\ tone|$  and  $|Abnormal\ tone|$  alternatively. The other controls include the same analyst and firm characteristics as defined in Eq. (2), together with the year-quarter and the firm fixed effects. Results from Eq. (3) are presented in Table 8.

[Table 8 here]

We find a negative relationship between both measures of analyst tone boldness and forecast accuracy even though significant at 5% level in Columns 3 and 4 only, where  $|Abnormal\ tone|$  is used as dependent variable. As expected, next quarter analyst forecasting accuracy is strongly related to the analyst contemporaneous forecasting performance. As in



Clement and Tse (2005), we find that the scaled distance of the analyst's forecast from the overall consensus (*Bold forecast*) is negatively associated to their accuracy. However, differently from Green et al. (2009), we do not find that female financial analysts issue more accurate earnings forecasts. Columns 2 and 4 show estimates obtained from an expanded version of Eq. (3) that includes the number of questions asked by each analyst in the call (*No. of questions*), the analyst *Talk*, and the order of the analyst speech (*An. sort*) as additional controls. Interestingly, results from these regressions indicate that analysts who ask more questions in a conference call tend to produce more accurate earnings forecast for the next quarter, which would confirm that analysts retrieve valuable information from participating in earnings conference calls (e.g., Bowen et al., 2002). A further interpretation of this result could be that analysts who take the speech more often in the QA are also those who have closer connections with the company management team and better access to the firm private information, which, in turn, would explain their greater accuracy (Mayew et al., 2013; Milian et al., 2017). Taken together these findings, however, do not support the argument that the analyst tone boldness is related to the analyst forecasting skills or to her access to firm private information. Tone boldness instead appears to be a linguistic feature that mainly characterizes the analysts with potentially greater incentives to increase their visibility.

## 6. Dynamics of analyst tone boldness

The results so far suggest that the tone of financial analysts participating in earnings calls tends to be bolder the less experienced and prestigious they are, and that such linguistic feature is not associated with analyst forecasting accuracy. In this section we assess whether financial analysts employ a bolder tone strategically to gain more visibility, and if they abandon this strategy when the pressure to boost their profile decreases. In a recent paper on analyst herding in earnings forecasting, Fijns and Huynh (2018) observe that less experienced analysts have stronger incentives to deviate from the consensus to differentiate themselves

from others and gain publicity. However, it could be argued that as the analyst professional profile improves the incentive to be bolder also fades. If that is the case, we would expect the tone of the analyst to become less bold after she experiences a career success. To answer this question, we run a modified version of Eq. (2) that includes the diff-in-diff indicator *Move Up* as the proxy for an analyst career development. *Move Up* is set equal to one after an analyst working for a lower status brokerage house moves to a higher status brokerage house, and it is equal to zero otherwise. Based on the existing literature (e.g., Hong and Kubik, 2003), a brokerage firm is high status if it meets at least one of the following three criteria: is ranked as an All-Star team by the Institutional Investor ranking, is named one of the best teams by the StarMine Refinitiv ranking, is in the top quartile of the sample distribution by its size.

Results from this model are reported in Table 9. The coefficients of *Move Up* are negative in all specifications and more strongly significant when the main measure of tone boldness,  $|Bold\ tone|$ , is used as dependent variable and when analyst general experience and the dummy *All-Star* are not included in the regressions. This finding therefore provides support to the argument that analysts employ a bolder tone to be more visible during earnings conference calls and suggests that this linguistic trait tends to fade after an analyst has experienced a career promotion. In the next section we shall discuss whether financial analysts can effectively improve their career outcomes by adopting a bolder linguistic style during QA sessions of earnings conference calls.

[Table 9 here]

## 7. Bolder analysts and career progression

Our results indicate that the analyst experience and reputation impact on their communication style during the QA, and provide some empirical evidence that corroborates Abraham and Bamber (2017) finding that the competitive nature of sell-side analyst role

makes it strategically important for them to ask questions that are perceived to be more insightful than those of their peers.

In this section we explore whether such self-advertisement strategy helps analysts in their career progression. To this purpose, we run the following probit model which assesses the probability that boldest analysts in previous conference calls experience future career progression or degradation:

$$\begin{aligned}
 \text{Move Up}_{i,t}(\text{Move Down}_{i,t}) = & \alpha + \beta_1 \text{Boldest}_{i,t-1} + \beta_2 |\text{Avg. Error}_{i,t-1}| + \beta_3 \text{Female}_i + \\
 & \beta_4 \text{Experience}_{i,t-1} + \beta_5 \text{Industries}_{i,t-1} + \beta_6 \text{Companies}_{i,t-1} + \\
 & \text{Year fixed effects} + \text{Broker fixed effect} + \\
 & \varepsilon
 \end{aligned}
 \tag{4}$$

Similar to Hong and Kubik (2003), the dependent variable *Move Up(Move Down)* is defined as a dummy variable equal to one if the analyst working for a low-status (high-status) brokerage house at the beginning of year  $t$  moves to a high-status (low-status) brokerage house by the end of year  $t^5$ , and zero otherwise. We define as high-status in year  $t$  the brokerage houses that are named All-Star teams by the Institutional Investor, or are ranked among the best teams by the StarMine Refinitiv ranking, or occupy the top quartile in the sample distribution by their size. The main independent variable of interest in the regression is *Boldest* which is equal to the one year lagged average number of conference calls in a year in which the analyst was found to be the boldest relatively to the other analysts in the same call<sup>6</sup>. The other control variables include the analyst average forecast error in the year before she moves ( $|\text{Avg. Error}|$ ), analyst *Experience*, and the dummy *Industries*. Results on the association between analyst tone boldness and analyst future career prospects are reported in

Table 10

<sup>5</sup> Note that if an analyst's house changes status (e.g., moving in or out of the top I.I. ranking), that analyst is not considered to have moved to a high-status house since the analyst has not experienced a job separation.

<sup>6</sup> To construct the variable *Boldest* we use both measures of analyst tone boldness ( $|\text{Bold tone}|$  and  $|\text{Abnormal tone}|$ ), then we run two different models for each definition of *Boldest*. For brevity reasons we only report results obtained from estimating the model using our main variable of tone boldness,  $|\text{Bold tone}|$ . Results using the other definition of the variable *Boldest* are qualitative similar and available from the author upon request.

[Table 10 here]

Both Columns 1 and 2 indicate that bold analysts are less likely to experience future career degradation. On the other hand, results in Columns 3 and 4 imply that, by being bold, analysts do not improve their chances of being hired by more prestigious brokerage house. However, the positive and significant interaction term between the variables *Boldest* and *|Avg. Error|* in Column 4 suggests that analyst tone boldness moderates the otherwise negative effect of analyst inaccuracy on the likelihood of moving to a high-status brokerage house.

Taken together these results suggest that participation style of financial analysts on conference calls matters as it can impact their career profile. Our findings therefore confirm the observational evidence found by Abraham and Bamber (2017) that QAs are complex and ambiguous encounters where analyst interrogation strategies and behaviors can vary depending on the incentives or disincentives they face.

## 8. Conclusions

A growing literature has studied the language of earnings conference calls. Existing studies have mainly focused on management talks, while less is known about the determinants of analyst linguistic style during QA sessions of earnings calls. This paper aims to fill this literature void by using a unique sample of more than 108,000 analyst participations in quarterly earnings conference calls to explore the association between financial analyst tone and their visibility and reputation concerns. To this purpose, we design a novel dimension of linguistic sentiment that measures the absolute deviation of one analyst tone from the average tone of the other analysts in the same call, and call this measure *|Bold tone|*. We provide strong evidence that, *ceteris paribus*, less experienced and less reputed analysts employ a bolder tone than their more experienced and successful peers. Analogously, our findings indicate that female financial analysts consistently exhibit a bolder

tone than their male colleagues. These results remain robust to an alternative definition of analyst tone boldness which captures the absolute abnormal component of an analyst tone, as well as to different model specifications. Interestingly, we do not find evidence that bolder analysts produce more accurate earnings forecasts, which implies that analyst tone boldness does not reflect their skills in processing public information or their access to management private information. We show instead that analysts become less bold after they experience positive career outcome. Therefore, our conjecture is that the communication style we document in this study reflects the need of younger and less prestigious financial analysts to adapt to attract more attention.

Next, we investigate the effect of analyst tone boldness on their future job separation. Results indicate that participation style of financial analysts on conference calls matters as bolder analysts are less likely to experience future career degradation and that less accurate but bolder analysts are more likely to be subsequently hired by more prestigious brokerage houses.

This study is the first one to shed light on the relationship between analyst career concerns and the boldness of their tone during earnings conference calls, suggesting that financial analyst participation style in earnings conference can be strategically adapted by the analysts to gain more visibility and improve their reputation.

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**Table 1. Sample description by year**

This table describes our sample of earnings conference calls by year. We collect our sample of conference call transcripts for US listed firms for the period between January 2005 and December 2018 from Bloomberg.

<u>Year</u>	<u>Analyst participations</u>	<u>Unique firms</u>	<u>Unique analysts</u>
2005	3,092	232	939
2006	3,487	264	1,048
2007	3,113	224	960
2008	3,803	279	1,044
2009	5,766	280	1,171
2010	6,159	294	1,247
2011	6,839	314	1,287
2012	6,460	311	1,261
2013	7,020	344	1,258



2014	5,080	758	1,426
2015	13,492	1,118	1,762
2016	16,236	1,154	1,751
2017	15,483	1,155	1,664
2018	12,031	1,088	1,535
<i>Tot. unique</i>	<i>108,061</i>	<i>1,584</i>	<i>3,623</i>

**Table 2. Descriptive statistics**

This table presents descriptive statistics for variables in the sample of analyst participations in quarterly earnings conference call held by US listed firms from 2005 to 2018. Panel A reports the distribution of selected raw analyst characteristics. Panel B shows summary statistics of scaled selected analyst characteristics. Panel C reposts statistics of other forecast and firm characteristics as included in the regressions. Continuous variables are winsorized at 1 and 99% to mitigate the impact of outliers. All variables are defined in the Appendix A.

Panel A: Distribution of selected (unscaled) analyst characteristics

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Std. dev.</u>	<u>Q1</u>	<u>Q3</u>
<i>Talk</i>	137.005	118.000	86.405	78.000	171.000
<i>Tone</i>	0.006	0.000	0.042	-0.017	0.024
<i>No. questions</i>	4.239	4.000	2.468	3.000	5.000
<i>An. sort</i>	5.527	5.000	3.720	3	8
<i>Female</i>	9.31%	0.000	0.291	0.000	0.000

<i>Experience</i>	11.027	11.000	5.920	6.000	15.000
<i>StarMine</i>	0.60%	0.000	0.075	0.000	0.000
<i>All-star</i>	4.97%	0.000	0.217	0.000	0.000
<i>Industries</i>	0.55%	0.500	1.033	0.000	1.000
<i>Companies</i>	8.921	8.000	5.603	5.000	11.000
<i>Broker size</i>	4.122	4.078	1.211	3.219	5.352
Panel B: Distribution of selected scaled analyst characteristics					
<i>/Bold tone/</i>	0.413	0.325	0.371	0.043	0.748
<i>/Abnormal tone/</i>	0.398	0.296	0.372	0.024	0.730
<i>Talk</i>	0.439	0.372	0.362	0.099	0.765
<i>No. questions</i>	0.429	0.333	0.386	0	0.750
<i>Experience</i>	0.624	0.702	0.316	0.428	0.884
<i>Companies</i>	0.394	0.321	0.313	0.143	0.600
Panel C: Distribution of forecast and firm characteristics					
<i>/Bold forecast/</i>	0.315	0.203	0.328	0.019	0.500
<i>Dispersion</i>	0.002	0.001	0.005	0.000	0.001
<i>/Accuracy/</i>	0.584	0.332	0.634	0.333	0.875
<i>UE</i>	0.002	0.001	0.030	-0.003	0.005
<i>ROA</i>	0.021	0.022	0.032	0.009	0.035
<i>Mkt/Book</i>	3.870	2.792	7.859	1.647	4.604
<i>Return</i>	0.028	0.029	0.168	-0.066	0.121
<i>LogTA</i>	8.850	8.838	1.781	7.634	10.081
Observations	108,061				

**Table 3. Correlations**

This table presents Pearson's correlation coefficients for the main variables of interest. Bold values indicate significance at the 1% level or better. Continuous variables are winsorized at 1 and 99% to mitigate the impact of outliers.

Panel A: Correlations								
	<u>Variable</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
1	<i>/Bold tone /</i>	1.000						
2	<i>/Abnormal tone/</i>	<b>0.640</b>	1.000					
3	<i>Talk</i>	<b>-0.085</b>	<b>-0.138</b>	1.000				
4	<i>No. of questions</i>	<b>-0.010</b>	<b>-0.011</b>	<b>0.321</b>	1.000			
5	<i>An. sort</i>	<b>-0.028</b>	<b>-0.027</b>	<b>-0.077</b>	<b>-0.093</b>	1.000		
6	<i>Experience</i>	<b>-0.017</b>	<b>-0.025</b>	<b>0.009</b>	<b>0.049</b>	0.006	1.000	
7	<i>All-star</i>	<b>-0.020</b>	<b>-0.015</b>	<b>0.043</b>	<b>0.040</b>	<b>-0.057</b>	<b>0.124</b>	1.000

8	<i>StarMine</i>	<b>-0.009</b>	-0.006	<b>0.008</b>	0.003	0.000	<b>0.013</b>	<b>0.024</b>
9	<i>Broker size</i>	<b>-0.035</b>	<b>-0.026</b>	<b>0.046</b>	-0.003	<b>-0.053</b>	<b>-0.017</b>	<b>0.175</b>
10	<i>Companies</i>	<b>0.009</b>	0.007	<b>0.032</b>	<b>0.008</b>	<b>-0.040</b>	<b>0.045</b>	<b>0.018</b>
11	<i>Industries</i>	<b>0.015</b>	0.005	0.002	0.002	<b>-0.020</b>	<b>0.012</b>	-0.002
12	<i>Female</i>	0.008	<b>0.015</b>	<b>-0.029</b>	-0.006	<b>-0.010</b>	<b>-0.046</b>	0.003
13	<i>/Bold forecast/</i>	<b>0.014</b>	<b>0.016</b>	<b>0.012</b>	<b>0.014</b>	<b>-0.041</b>	<b>-0.014</b>	-0.008
14	<i>/Accuracy/</i>	-0.007	<b>-0.011</b>	0.005	0.002	<b>0.017</b>	0.001	-0.001

Panel b: Correlations

		<u>8</u>	<u>9</u>	<u>10</u>	11	12	13	14
8	<i>StarMine</i>	1						
9	<i>Broker size</i>	<b>0.022</b>	1					
10	<i>Companies</i>	0.002	<b>0.027</b>	1				
11	<i>Industries</i>	0.004	<b>-0.008</b>	<b>0.309</b>	1			
12	<i>Female</i>	<b>-0.014</b>	<b>0.044</b>	<b>-0.020</b>	<b>-0.029</b>	1		
13	<i>/Bold forecast/</i>	0.008	<b>-0.033</b>	<b>0.036</b>	<b>0.017</b>	-0.004	1	
14	<i>/Accuracy/</i>	<b>0.027</b>	<b>0.012</b>	<b>-0.019</b>	<b>-0.011</b>	-0.005	<b>-0.293</b>	1

**Table 4. Analyst tone boldness and their experience and reputation**

The table reports the coefficients estimates from Eq. (2) of analyst tone boldness on analyst experience and reputation, and other control variables over the period between 2005 and 2018. All specifications include year-quarter and brokerage house fixed effects. The t-statistics in parenthesis are computed using heteroskedasticity robust standard errors clustered by analyst-year-quarter. \*, \*\*, and \*\*\* indicate significance at 10, 5, and 1% levels, respectively.

	<u>/Bold tone/</u>	<u>/Bold tone/</u>	<u>/Bold tone/</u>	<u>/Abnormal tone/</u>	<u>/Abnormal tone/</u>	<u>/Abnormal tone/</u>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Experience</i>	-0.015*** (-3.82)			-0.024*** (-6.15)		
<i>All-Star</i>		-0.015*** (-2.63)			-0.016*** (-2.75)	
<i>StarMine</i>			-0.034** (-2.34)			-0.021 (-1.46)
<i>Broker size</i>	0.004	0.004	0.004	-0.003	-0.003	-0.003

	(0.95)	(0.98)	(0.95)	(-0.80)	(-0.77)	(-0.81)
<i>Female</i>	0.014***	0.014***	0.014***	0.021***	0.022***	0.022***
	(3.29)	(3.39)	(3.41)	(4.93)	(5.13)	(5.16)
<i>Industries</i>	0.004	0.004	0.004	-0.002	-0.002	-0.002
	(1.58)	(1.57)	(1.55)	(-0.59)	(-0.63)	(-0.67)
<i>Companies</i>	0.007	0.006	0.006	0.007*	0.006	0.006
	(1.57)	(1.45)	(1.38)	(1.74)	(1.53)	(1.48)
<i>An. sort</i>	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(-6.25)	(-6.29)	(-6.16)	(-6.59)	(-6.58)	(-6.44)
<i>/Bold forecast/</i>	0.007*	0.007**	0.007**	0.010***	0.010***	0.010***
	(1.96)	(1.99)	(2.00)	(2.80)	(2.84)	(2.85)
<i>Dispersion</i>	0.545**	0.551**	0.552**	0.114	0.122	0.122
	(2.20)	(2.22)	(2.23)	(0.46)	(0.49)	(0.49)
<i>UE</i>	0.021	0.021	0.022	-0.006	-0.005	-0.005
	(0.51)	(0.51)	(0.53)	(-0.14)	(-0.13)	(-0.12)
<i>ROA</i>	-0.049	-0.049	-0.051	-0.080**	-0.081**	-0.083**
	(-1.22)	(-1.23)	(-1.26)	(-1.97)	(-2.01)	(-2.05)
<i>Mkt/Book</i>	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(-0.79)	(-0.90)	(0.87)	(0.82)	(0.66)	(0.67)
<i>Return</i>	-0.007	-0.007	-0.007	-0.005	-0.005	-0.005
	(-0.98)	(-0.98)	(-0.96)	(-0.69)	(-0.69)	(-0.67)
<i>LogTA</i>	-0.005***	-0.005***	-0.005***	-0.004***	-0.005***	-0.005***
	(-6.69)	(-6.99)	(-7.08)	(-5.76)	(-6.29)	(-6.40)
<i>Constant</i>	0.458***	0.451***	0.451***	0.470***	0.459***	0.460***
	(25.42)	(25.23)	(25.26)	(26.26)	(25.92)	(25.96)
Observations	108,043	108,043	108,043	108,039	108,039	108,039
R <sup>2</sup>	0.01	0.01	0.01	0.01	0.01	0.01

**Table 5. Within analyst and within firm analysis of analyst tone boldness, their experience and reputation**

The table reports the coefficients estimates from Eq. (2) of analyst tone boldness on analyst reputation, and other control variables over the period between 2005 and 2018. Specifications in columns 1 and 4 include analyst and year-quarter fixed effects. Specifications in columns 2 and 3 and 4 and 5 include firm and year-quarter fixed effects. The t-statistics in parenthesis are computed using heteroskedasticity robust standard errors clustered by analyst-year-quarter. \*, \*\*, and \*\*\* indicate significance at 10, 5, and 1% levels, respectively.

	<i>/Bold tone/</i>	<i>/Bold tone/</i>	<i>/Bold tone/</i>	<i>/Abnormal tone/</i>	<i>/Abnormal tone/</i>	<i>/Abnormal tone/</i>
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Experience</i>	-0.044***	-0.009**		-0.040***	-0.020***	
	(-5.38)	(-2.37)		(-4.89)	(-5.03)	
<i>All-star</i>			-0.018***			-0.015***
			(-3.25)			(-2.80)
<i>Broker size</i>	-0.001	-0.006***	-0.005***	-0.003	-0.005***	-0.005***
	(-0.48)	(-5.48)	(-4.93)	(-1.13)	(-4.98)	(-4.98)
<i>Female</i>		0.013***	0.013***		0.021***	0.021***
		(2.99)	(3.07)		(4.85)	(4.85)

<i>Industries</i>	0.006* (1.79)	0.005* (1.72)	0.005* (1.77)	0.004 (1.24)	0.002 (0.73)	0.002 (0.73)
<i>Companies</i>	0.004 (0.85)	-0.001 (-0.29)	-0.002 (-0.38)	0.006 (1.34)	0.001 (0.27)	0.001 (0.27)
<i>An. sort</i>	-0.002*** (4.85)	0.000 (1.05)	0.000 (0.91)	-0.002*** (-6.11)	-0.000 (-0.81)	-0.000 (-0.81)
<i>Constant</i>	0.505*** (34.57)	0.449*** (12.35)	0.443*** (12.23)	0.484*** (33.16)	0.381*** (10.54)	0.372*** (10.30)
<i>Controls</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	107,684	108,027	108,027	107,684	108,027	108,027
<i>R<sup>2</sup></i>	0.05	0.02	0.02	0.07	0.02	0.02

**Table 6. Sign of tone boldness**

The table reports the coefficients estimates from a probit model that estimates the probability of an analyst to be the most positive (*Boldest*<sup>+</sup>) or the most negative (*Boldest*<sup>-</sup>) when asking questions in QA sessions of earnings conference calls held between 2005 and 2018 as a function of the analyst experience and reputation. All specifications control for year and quarter fixed effects. The t-statistics in parenthesis are computed using heteroskedasticity robust standard errors clustered by the brokerage house. \*, \*\*, and \*\*\* indicate significance at 10, 5, and 1% levels, respectively.

	<i>Boldest</i> <sup>+</sup>	<i>Boldest</i> <sup>-</sup>	<i>Boldest</i> <sup>+</sup>	<i>Boldest</i> <sup>-</sup>
	(1)	(2)	(3)	(4)
<i>Experience</i>	-0.033 (-1.50)	-0.076*** (-3.30)		
<i>All-star</i>			-0.074* (-1.87)	-0.030 (-0.67)

<i>Broker size</i>	-0.030*** (-3.04)	-0.029*** (-3.29)	-0.028*** (-2.79)	-0.027*** (-3.22)
<i>Female</i>	-0.044 (-1.55)	0.064** (2.30)	-0.043 (-1.50)	0.068** (2.45)
<i>Industries</i>	0.014 (0.84)	0.001 (0.04)	0.014 (0.85)	0.000 (0.01)
<i>Companies</i>	0.017 (0.75)	0.025 (1.19)	0.016 (0.71)	0.021 (1.00)
<i>An. sort</i>	-0.026*** (-13.41)	-0.003 (-1.52)	-0.026*** (-13.39)	-0.003 (-1.52)
<i>Constant</i>	-0.779*** (-13.09)	-0.856*** (-14.74)	-0.804*** (-13.47)	-0.896*** (-15.39)
<i>Controls</i>	Yes	Yes	Yes	Yes
<i>Observations</i>	108,061	108,061	108,061	108,061
<i>Pseudo R<sup>2</sup></i>	0.97%	0.77%	0.98%	0.74%

**Table 7. Analyst talk and number of questions**

The table reports the coefficients estimates from Eq. (2) of analyst talk and number of questions on analyst experience and reputation, and other control variables over the period between 2005 and 2018. All specifications include year-quarter and brokerage house fixed effects. The t-statistics in parenthesis are computed using heteroskedasticity robust standard errors clustered by analyst-year-quarter. \*, \*\*, and \*\*\* indicate significance at 10, 5, and 1% levels, respectively.

	<u>Talk</u>	<u>Talk</u>	<u>No. questions</u>	<u>No. questions</u>
	(1)	(2)	(4)	(5)
<i>Experience</i>	0.022*** (5.02)		0.068*** (16.04)	
<i>All-Star</i>		0.055*** (7.92)		0.065*** (9.67)

<i>Broker size</i>	0.016*** (3.99)	0.015*** (3.84)	0.004 (0.91)	0.003 (0.78)
<i>Female</i>	-0.041*** (-8.78)	-0.042*** (-8.86)	-0.007 (-1.50)	-0.009* (-1.93)
<i>Industries</i>	-0.003 (-1.00)	-0.003 (-1.09)	0.001 (0.46)	0.001 (0.49)
<i>Companies</i>	0.030*** (6.54)	0.030*** (6.64)	0.004 (0.88)	0.006 (1.39)
<i>An. sort</i>	-0.006*** (-19.43)	-0.006*** (-19.05)	-0.008*** (-25.03)	-0.008*** (-24.84)
<i>/Bold forecast/</i>	0.008** (2.37)	0.008** (2.34)	0.012*** (3.19)	0.011*** (3.07)
<i>Dispersion</i>	0.183 (0.76)	0.173 (0.72)	0.020 (0.08)	-0.003 (-0.01)
<i>UE</i>	0.016 (0.40)	0.015 (0.39)	0.089** (2.15)	0.088** (2.12)
<i>ROA</i>	-0.192*** (-4.73)	-0.196*** (-4.81)	-0.190*** (-4.49)	-0.188*** (-4.45)
<i>Mkt/Book</i>	-0.000*** (-2.69)	-0.000** (-2.51)	-0.000 (-0.86)	-0.000 (-0.41)
<i>Return</i>	0.002 (0.29)	0.002 (0.31)	-0.011 (-1.37)	-0.011 (-1.38)
<i>LogTA</i>	-0.008*** (-10.59)	-0.008*** (-10.51)	-0.008*** (-9.71)	-0.007*** (-8.53)
<i>Constant</i>	0.465*** (25.98)	0.476*** (26.68)	0.487*** (26.15)	0.519*** (28.07)
Observations	108,043	108,043	108,043	108,043
R <sup>2</sup>	4%	4%	2%	2%

**Table 8. Tone boldness and analyst forecasting ability**

The table reports the coefficients estimates from the OLS regression of  $|Accuracy_{+1}|$  on analyst tone boldness, and other control variables over the period between 2005 and 2018 described in Eq. (3). All specifications include firm fixed effects and year-quarter fixed effects. The t-statistics in parenthesis are computed using standard errors clustered by analyst-year-quarter. \*, \*\*, and \*\*\* indicate significance at 10, 5, and 1% levels, respectively.

	<u><math> Accuracy_{+1} </math></u> (1)	<u><math> Accuracy_{+1} </math></u> (2)	<u><math> Accuracy_{+1} </math></u> (3)	<u><math> Accuracy_{+1} </math></u> (4)
<i>/Bold tone/</i>	-0.004 (-1.51)	-0.004 (-1.41)		
<i>/Abnormal tone/</i>			-0.006** (-2.10)	-0.006** (-2.00)
<i>Experience</i>	-0.003 (-0.75)	-0.003 (-0.95)	-0.003 (-0.77)	-0.003 (-0.97)

<i>Female</i>	-0.013*** (-3.29)	-0.013*** (-3.28)	-0.012*** (-3.27)	-0.012*** (-3.27)
<i>Industries</i>	-0.002 (-0.93)	-0.002 (-0.92)	-0.002 (-0.94)	-0.002 (-0.92)
<i>Companies</i>	-0.004 (-1.17)	-0.004 (-1.18)	-0.004 (-1.17)	-0.004 (-1.17)
<i>Broker size</i>	-0.002* (-1.70)	-0.002* (-1.85)	-0.002* (-1.70)	-0.002* (-1.85)
<i>/Bold forecast/</i>	-0.023*** (-6.57)	-0.023*** (-6.59)	-0.023*** (-6.56)	-0.023*** (-6.58)
<i>Dispersion</i>	-0.037 (-0.12)	-0.035 (-0.12)	-0.036 (-0.12)	-0.034 (-0.11)
<i>/Accuracy/</i>	0.076*** (22.10)	0.076*** (22.07)	0.076*** (22.10)	0.076*** (22.07)
<i>No. question</i>		0.008*** (2.65)		0.008*** (2.70)
<i>Talk</i>		0.001 (0.31)		0.000 (0.13)
<i>An. sort</i>		-0.000 (-0.66)		-0.000 (-0.67)
<i>Constant</i>	0.559*** (98.48)	0.557*** (88.38)	0.559*** (98.96)	0.558*** (88.60)
Observations	107,141	107,141	107,141	107,141
<i>R</i> <sup>2</sup>	3%	3%	3%	3%

**Table 9. Dynamic of analyst tone boldness**

The table reports the coefficients estimates from an augmented version of the model described in Equation (2) of analyst tone boldness on the indicator variable *Move up<sub>*i*</sub>* that indicates if an analyst moves to a higher status brokerage house. Models in columns 2, 4 and 6 also control for analyst experience and analyst reputation. All specifications include analyst-year-quarter and brokerage house fixed effects. The t-statistics in parenthesis are computed using heteroskedasticity robust standard errors clustered by analyst-year-quarter. \*, \*\*, and \*\*\* indicate significance at 10, 5, and 1% levels, respectively.

	<u>/Tone boldness/</u> (1)	<u>/Tone boldness/</u> (2)	<u>/Tone boldness/</u> (3)	<u>/Abnormal tone/</u> (4)	<u>/Abnormal tone/</u> (5)	<u>/Abnormal tone/</u> (6)
<i>Move Up</i>	-0.010** (-2.15)	-0.009* (-1.82)	-0.010** (-2.21)	-0.009* (-1.88)	-0.007 (-1.36)	-0.009* (-1.94)
<i>Experience</i>		-0.014*** (-3.66)			-0.024*** (6.02)	
<i>All-Star</i>			-0.015*** (-2.68)			-0.016*** (-2.80)
<i>Constant</i>	0.452***	0.458***	0.451***	0.460	0.470***	0.460***



	(25.30)	(25.43)	(25.26)	(25.99)	(26.27)	(25.95)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	108,043	108,043	108,043	108,039	108,039	108,039
$R^2$	1%	1%	1%	1%	1%	1%

**Table 10. Boldest analysts and their career progression**

The table reports the coefficients estimates from the probit model that tests the probability that boldest analysts in conference calls experience future career progression or degradation over the period between 2005 and 2018, as described in Eq. (4). All specifications include brokerage house and year fixed effects. The t-statistics in parenthesis are computed using standard errors clustered by analyst-year-quarter. \*, \*\*, and \*\*\* indicate significance at 10, 5, and 1% levels, respectively.

	<u>Move Down</u>		<u>Move Up</u>	
	(1)	(2)	(3)	(4)
<i>Boldest</i>	-0.203**	-0.182**	0.006	-0.078
	(-2.42)	(-2.12)	(0.06)	(-0.77)
<i> Avg. Error </i>	-1.2814	-0.265	1.711	-2.733*
	(-0.96)	(-0.16)	(1.50)	(-1.67)
<i>Boldest* Avg. error </i>		-3.894		11.981***
		(-0.79)		(2.84)
<i>Female</i>	0.008	0.008	0.031	0.0319
	(0.11)	(0.11)	(0.31)	(0.32)
<i>Experience</i>	0.103***	0.103***	-0.032	-0.0308
	(2.74)	(2.74)	(-1.07)	(-1.02)
<i>Industries</i>	-0.012	-0.011	-0.009	-0.0157
	(-0.21)	(-0.20)	(-0.18)	(-0.30)
<i>Companies</i>	0.044***	0.044***	0.048***	0.0484***
	(8.40)	(8.40)	(8.15)	(8.19)
Observations	16,816	16,816	16,816	16,816

#### Appendix A: Variable definition

<i> Bold tone </i>	The absolute distance of an analyst tone in a conference call from the average tone of the other analysts participating in the same call.
<i> Abnormal tone </i>	Absolute abnormal analyst tone obtained as residuals from the estimation of Equation (1) of the analyst tone on a set of earnings forecast and firm characteristics.
<i>Tone</i>	The tone of each analyst in a conference call calculated as the difference between positive and negative words (Loughran and McDonald, 2011) scaled the analyst talk
<i>Talk</i>	The number of words spoken by the analyst in a conference call.
<i>No. of questions</i>	The number of questions asked by each analyst in a conference call.
<i>Experience</i>	The number of calendar years the analyst appears on the IBES database prior to the calendar year of the conference call.
<i>All-star</i>	Indicator variable set equal to one if the analyst is ranked best analyst in her sector by the Institutional Investor in the calendar year prior to the conference call, and zero otherwise.

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<i>StarMine</i>	Indicator variable set equal to one if the analyst has received the Refinitiv StarMine award in the calendar year prior to the conference call, and zero otherwise.
<i>Broker size</i>	The (log of the) number of analysts employed by the brokerage house in the year before the conference call.
<i>Female</i>	An indicator variable equal to one if the analyst is female, and zero otherwise.
<i>Industries</i>	A dummy variable equal to one if the number of industries (defined at the two-digit standard industrial classification (SIC) level) covered by an analyst in the year before the conference call is larger than one, and zero otherwise.
<i>Companies</i>	The number of companies followed by an analyst in the year before the conference call.
<i>An. sort</i>	The position of each analyst in the queue for asking a question starting at one for the first analyst to ask a question.
<i>/Bold forecast/</i>	The absolute distance of the forecast from the fiscal-quarter-end consensus for analyst following firm $j$ in quarter $t$ minus the minimum absolute distance for analysts who follow firm $j$ in quarter $t$ , with this difference scaled by the range in absolute distances for analysts following firm $j$ in quarter $t$
<i>Dispersion</i>	The standard deviation of analyst earnings forecast for a given quarter scaled by the firm price.
<i>UE</i>	Quarterly earnings surprise measured as change of quarterly net income relative to same quarter one-year-ahead net income scaled by the absolute value of same quarter one-year-ahead net income.
<i>ROA</i>	The return on assets for the quarter
<i>Mkt/Book</i>	Quarterly market to book ratio
<i>Return</i>	Quarterly stock return.
<i>LogTA</i>	The log of total assets for the quarter
<i>/Accuracy/</i>	Measure of analyst $i$ 's forecast accuracy for firm $j$ , calculated as the maximum absolute forecast error for analysts who follow firm $j$ in a quarter minus the absolute forecast error of analyst $i$ following firm $j$ in the same quarter, with this difference scaled by the range of absolute forecast errors for analysts following firm $j$ in that quarter.
<i>Move Up(Down)</i>	Dummy variable equal to one if the analyst moves to a high-status (low-status) brokerage house, and zero otherwise.
<i>/Avg. Error/</i>	The analyst annual average forecast error. Forecast error is defined as the absolute value of the analyst's forecast error calculated as the firm's actual earnings for the quarter less the analyst's last quarterly forecast before the earnings conference call, scaled by the firm's price for the quarter

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