

# Earnings Expectation and Interactive Discussion with Corporate Insiders

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## Abstract

We empirically clarify the role and influence of interactive discussion with corporate insiders. To this end, we analyze analysts' earnings forecasts are influenced by the linguistic tone of other participants' comments, the management's responses, and the management's presentation. We find that the tone of management presentation and their responses to the questions have no impact on analysts' expectations. In contrast, the positive (negative) tone of other participants' comments induces positive (negative) revisions of the analysts' earnings forecasts. Our results suggest that the interactive meeting plays a role in sharing information and mood among participants (among analysts and investors) rather than between corporate insiders and participants.

*Keywords:* interactive discussion; linguistic tone; analyst forecast; peer's opinion

*JEL classification:* G11, G14, G15, G24.

## 1. Introduction

Interactive discussion with corporate insiders has recently gained importance as a source of information (Brown et al. 2015; Valentine 2011). Although providing the opportunity for interaction is costly for firms (Porter 2012), they increasingly provide such opportunities to lower information asymmetry between firms and investors. Despite the increasing importance of interactive discussion, it has not been empirically well-examined whether participants' opinions are affected by managers' and participants' discussions.

Specifically, although the stated purpose of the interactive discussion is providing information from corporate insiders to participants, the informational role of the discussion could be more explored. As each participant can listen to other participants' comments, including questions to the management, and the manager's responses, his/her opinions and sentiment could be influenced by other participants' comments and management's responses. Therefore, in this study, we clarify the underlying mechanism of information sharing through the discussion by analyzing whether and how ex-post revisions in analysts' earnings forecasts are associated with the tones of the manager's (corporate insider's) response to the questions, management presentation, and other participants' comments, that is, participants' comments except for his/her own comments. If any influence of the tones is observed, we analyze whether the influence induces an overestimation or underestimation of his/her earnings forecasts.

We focus on the interactive discussion that takes place at analyst/investor days (AI days), as AI days provide a much greater opportunity to interact with corporate insiders (through the Q&A session) than other disclosure mediums (Park 2019). Prior studies (e.g., Kirk and Markov 2016; Park 2019) analyze the effect of holding an AI day on analysts' actions (e.g., frequency of their forecast updates) and their forecast errors. Also, Miwa (2021) points out that the overall tone of the Q&A session is positively associated with subsequent revisions in analysts' consensus earnings forecasts, supporting the informational value of the discussion at AI days.

## 2. Empirical evidence

### 2.1. Hypothesis development

Interactive discussion can be divided into management (corporate insiders') comments and participants' (analysts' and investors') comments. As the interactive discussion aims to provide information to participants, the management comments could have a significant informational value.

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Thus, the management comments have a substantial impact on participants' expectations regarding company performance. Specifically, the positive (negative) tone of management comments, which represents the positive (negative) view of corporate insiders, could induce upward (downward) revisions in participants' expectations. This argument leads to the first hypothesis:

H1a The tones of management comments have an impact on analysts' forecasts of company performance.

In contrast, corporate insiders comment and answer the questions for the sake of the company's benefit. Thus, the management comments could be strategically biased. Consistent with the view, Davis et al. (2015) show that the management comments are strategically optimistic. If participants realize the bias, they will discount what corporate insiders comment on. Chen et al. (2018) show that investors do not react to tones of management comments in earnings conference calls. Thus, the participants' expectations might not be significantly influenced by the tones of management comments in AI days. Thus, we can posit the following alternative hypothesis:

H1b Tones of management comments have little impact on analysts' forecasts of company performance.

Another merit of the interactive discussion with corporate insiders is to know other participants' (peers') opinions. Trueman (1994) argues that analysts' earnings forecasts are significantly influenced by their peers' forecasts. Hence, if an analyst's opinion is found to be different from other participants' (peers') views, an analyst will review whether the difference is reasonable so that peers' comments would influence his/her expectation regarding company performance. Therefore, their expectations about company performance are likely influenced by peers' opinions through the interactive discussion. Specifically, the positive (negative) tones of other participants' comments could induce upward (downward) revisions in analysts' expectations. Thus, we can posit the following hypothesis:

H2 The tones of peers' comments have a substantial impact on analysts' forecasts of company performance.

The revisions of analysts' earnings forecasts associated with the linguistic tone could mitigate analysts' misunderstandings (lowering their forecast errors). However, it also worsens their forecast accuracy; analysts' earnings forecasts may be misguided by management or other participants' comments. Managers may use an AI day to inflate audiences' perceptions opportunistically (e.g., Bozzolan et al. 2015; Cho et al. 2010; Davies and Brennan 2007). Furthermore, since analysts might overreact to peers' opinions (Trueman, 1994), the positive (negative) tone of corporate insiders' and peers' comments might induce the overestimation (underestimation) of analysts' forecasts regarding company performance. Thus, an overestimation (underestimation) of earnings forecasts would be observed after an AI day for stocks with a positive (negative) tone in their comments. Hence, the following hypothesis is proposed:

H3a The positive (negative) linguistic tone of comments induces the overestimation (underestimation) of analysts' earnings forecasts.

By contrast, if an AI day faithfully and straightforwardly provides and distributes information on company performance through management and peers' comments, the positive (negative) tone of these comments would not result in the overestimation (underestimation) of analysts' earnings forecasts. Thus, there should be no positive association between the tones and ex-post optimism in those earnings forecasts. Thus, we can posit the alternative hypothesis as follows:

H3b The positive (negative) tones of comments do not induce the overestimation (underestimation) of analysts' earnings forecasts.

## 2.2. Research methodology

We form a sample of AI days of the U.S. firms using company-level events calendar data from Factset. We obtain the tones of the comments following the methodologies of Loughran and McDonald (2011). Each comment  $j$  (and management presentation) is processed to identify each word, and then the word is categorized based on whether it is included in the positive or negative word list. This process generates raw word counts of positive ( $Positive_j$ ) and negative words ( $Negative_j$ ) for each management and participant's comment  $j$ . We then take the difference in the opposing categories and divide it by the sum of the two ( $Positive_j - Negative_j$ ) / ( $Positive_j + Negative_j$ ) to construct a measure for the linguistic tone ( $TONE_j$ ) of each comment  $j$ . This ratio, bounded between  $-1$  and  $+1$ , provides a metric for relative tone.

To test H1, we analyze whether and how the linguistic tones of the management comments induce revisions of analysts' forecasts regarding company performance. In terms of tone of management comments, we separately analyze those of management presentation of the AI day  $s$  ( $TONE\_MPT_s$ ) and those of management comments (responses) to participants' questions as both have different purposes. We further decompose the management responses into responses to his/her own (analyst  $i$ 's) questions and those to other participants' questions. According to Jung et al. (2019), most analysts issue earnings per share (EPS) estimates for the current fiscal year (FY1 = Fiscal Year 1) and next fiscal year (FY2 = Fiscal Year 2). Thus, we analyze the association of the tones with the forecast revisions of EPS for the current and next fiscal years. Specifically, to test H1a and H1b, we analyze whether the subsequent 10-day revisions of each analyst's earnings forecasts are positively associated with the linguistic tone of the management presentation ( $TONE\_MPT_s$ ) that of management responses to own (analyst  $i$ 's) questions ( $TONE\_MS_{i,s}$ ), and that of management responses to the other participants' questions ( $TONE\_MO_{i,s}$ ). The following regression is estimated to determine the extent to which revisions of each analyst's earnings forecasts are associated with the tones:

$$REV\_EPS_{i,s} = \alpha_0 + \beta_1 TONE\_MPT_s + \beta_2 TONE\_MS_{i,s} + \beta_3 TONE\_MO_{i,s} + (Controls) + \varepsilon_{i,s} \quad (1)$$

The dependent variable ( $REV\_EPS_{i,s}$ ) is the change in analyst  $i$ 's EPS forecasts for the current and next fiscal years for days  $t$  (the day of the event) through  $t+9$  deflated by the closing price on the AI day ( $t$ ).

<sup>1</sup> The standard errors in all the tests are estimated with a cluster control at the event level.

As a control variable, we first include the tones of comments except for management ones, that is, participants' comments ( $TONE\_PA$ ). We next include the lagged revisions of EPS consensus forecasts ( $PREV\_EPS_{i,s}$ ) that is defined as the change in analyst  $i$ 's EPS forecasts for days  $t-10$  through  $t-1$  deflated by the closing price on day  $t-10$ . When  $REV\_EPS$  is based on EPS for the current (next) fiscal year,  $PREV\_EPS$  is also based on EPS for the current (next) fiscal year. In addition, we include 10-day lagged stock returns ( $PCAR$ ); the consensus recommendation ( $REC$ ), earnings surprises ( $SUE$ ), firm size ( $MV$ ) that is measured as the logarithm of the market value of equity in the most recent June, and the book-to-market ratio for the most recently ended year ( $BM$ ). We also include (fiscal) year dummies. Furthermore, following Jung et al. (2019), we employ the following accounting-based variables: working capital accruals ( $ACC$ ), return on assets ( $ROA$ ), a loss indicator variable ( $LOSS$ ), a guidance indicator ( $D\_GUI$ ) that is an indicator variable that equals 1 if a firm provides any earnings guidance during the current fiscal year and 0 otherwise, institutional ownership ( $INST$ ) that is defined as the percentage of shares owned by institutions at the end of the most recent fiscal year, the change in external financing ( $CHXFIN$ ), the stock splits indicator and the disparity between analysts' long- and short-term earnings growth forecasts ( $DISPARITY$ ).

To test H2, we analyze whether and how the linguistic tones of the other participants' comments

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<sup>1</sup> The bottom and top 1% of the revision variables, i.e.,  $REV\_EPS$ , and  $PREV\_EPS$  are winsorized to reduce the effect of outliers.

induce revisions of analysts' forecasts. To this end, we identify tones of participants comments, excluding investor  $i$ 's comments as the tones of other participants' comments for analyst  $i$  ( $TONE\_PO_{i,s}$ ). Then, we analyze whether the revision in each analyst  $i$ 's earnings forecasts is associated with  $TONE\_PO_{i,s}$  by estimating the following regression.

$$REV\_EPS_{i,s} = \alpha_0 + \beta_1 TONE\_PO_{i,s} + (Controls) + \varepsilon_{i,s}. \quad (2)$$

We include the linguistic tones of the management presentation ( $TONE\_MPT$ ), management responses to analyst  $i$ 's questions ( $TONE\_MS$ ), responses to the other participants' questions ( $TONE\_MO$ ), and own (analyst  $i$ 's) comments ( $TONE\_PS$ ) as a control variable. Other control variables are the same as those of the regression (1)<sup>2</sup>. A positive coefficient of  $TONE\_PO$  means that the positive (negative) tone of the other participants' comments induces upward (downward) revision in analysts' forecasts, supporting H2.

Finally, to test H3a and H3b, we analyze whether the positive (negative)  $TONE\_MPT$ ,  $TONE\_MA$ ,  $TONE\_MS$ , and  $TONE\_PO$  induce an overestimation (underestimation) in earnings forecasts if these tones are found to affect the analysts' forecasts. Thus, we analyze whether the optimism in earnings forecasts after analysts' responses to AI days (the ex-post optimism in their earnings forecasts;  $OPT\_EPS_{i,s}$ ) is associated with the tones. As we observe analysts' responses to the comments using the revisions of their earnings forecasts for days  $t$  through  $t+9$ , we define  $OPT\_EPS_{i,s}$  (i.e., ex-post optimism in earnings forecasts of analysts  $i$  after an AI day  $s$ ) as the EPS forecast on day  $t+9$  less the actual EPS deflated by the closing price on day  $t+9$ .<sup>3</sup> Then, we estimate regression (2) for  $OPT\_EPS$ . If coefficients of  $TONE\_MPT$ ,  $TONE\_MA$ ,  $TONE\_MS$ , and  $TONE\_PO$  are insignificant, the positive (negative) tones are unlikely to induce overestimation (underestimation) of analysts' earnings forecasts; H3b is supported. In contrast, a positive coefficient of  $TONE\_MPT$ ,  $TONE\_MA$ ,  $TONE\_MS$ , and  $TONE\_PO$  indicates that analysts' earnings forecasts with positive (negative)  $TONE\_MPT$ ,  $TONE\_MA$ ,  $TONE\_MS$ , and  $TONE\_PO$  are upwardly (downwardly) biased, supporting a possibility that analysts' forecasts are misguided by the tones of comments.

### 2.3. Results

Table 1 presents the results with t-statistics (in parentheses) based on robust standard errors clustered by an event (an AI day). We report the results for the revisions of the earnings forecasts for the current and next fiscal years separately. The coefficient of  $TONE\_PA$  is significantly positive, indicating the significant association between tones of participants' comments and subsequent revisions in analysts' earnings forecasts. In contrast, none of the other control variables has a consistent association with the dependent variable.

Table 1 Tones of management comments

	EPS for the current fiscal year		EPS for the next fiscal year	
TONE_MO	-0.0024	(0.77)	-0.0040	(0.69)
TONE_MS	0.0001	(0.17)	0.0010	(1.58)
TONE_MPT	0.0047	(1.27)	0.0019	(0.36)
TONE_PA	0.0097 ***	(3.33)	0.0207 ***	(4.02)
Controls for Year Effects	Yes		Yes	
Intercept	-0.0010	(1.61)	0.0005	(0.52)
Adjusted R2	1.76%		1.25%	
N	10997		10997	

<sup>2</sup> As  $TONE\_PO$  and  $TONE\_PS$  are included in the regression (2), we do not include  $TONE\_PA$ .

<sup>3</sup> The bottom and top 1% of  $OPT\_EPS$  are winsorized to reduce the effect of outliers.

In terms of the association with the tones, we find that the coefficients of *TONE\_MPT*, *TONE\_MO*, *TONE\_MS* are insignificant. These insignificant coefficients indicate that tones of the management comments have no impact on analysts' earnings forecasts, supporting H1b. This result supports the view that the management presentation and responses to participants' questions have a small informational role as a disclosure medium.

Table 2 shows the association between tones of other participants' comments and subsequent revisions in analysts' earnings forecasts (*REV\_EPS*). The result suggests that the tones of other participants' comments significantly influence analysts' earnings expectations. The coefficients of *TONE\_PO* (0.0086, 0.0172) are significantly positive (at the 0.01 level). The positive (negative) tones of other participants' comments induce upward (downward) revisions in his/her forecasts of current and next fiscal years' earnings. The results suggest that AI days play a role in exchanging information and moods between participants (investors and analysts) rather than between participants and corporate insiders, supporting H2.

Table 2 Tones of participants' comments

	EPS for the current fiscal year		EPS for the next fiscal year	
TONE_PO	0.0086 ***	(3.24)	0.0172 ***	(3.70)
TONE_PS	0.0011 **	(2.17)	0.0027 ***	(2.76)
TONE_MO	-0.0024	(0.76)	-0.0036	(0.63)
TONE_MS	0.0000	(0.08)	0.0009	(1.42)
TONE_MPT	0.0047	(1.29)	0.0021	(0.41)
Controls for Year Effects	Yes		Yes	
Intercept	-0.0010	(1.58)	0.0005	(0.55)
Adjusted R2	1.88%		1.36%	
N	10997		10997	

Table 3 presents the association between the tones and ex-post optimism in earnings forecasts (*OPT\_EPS*). The results show that the coefficient of *TONE\_PO* is not positive, rejecting the possibility that a positive (negative) tone of other participants' comments induces an overestimation (underestimation) of earnings forecasts. Considering that analysts' forecasts are significantly influenced by the tones of other participants' comments, the result indicates that this influence does not deteriorate the forecast accuracy. Thus, this result rejects H3a and supports H3b. The other participants' comments mitigate analysts' forecast errors.

Table 3 Tones of participants' comments

	Optimism in analysts' forecasts			
	EPS for the current fiscal year		EPS for the next fiscal year	
TONE_PO	-0.0626	(1.35)	-0.0603	(1.58)
TONE_PS	-0.0150 **	(2.00)	-0.0104	(1.34)
TONE_MO	-0.0144	(0.34)	0.0519	(0.94)
TONE_MS	-0.0044	(0.98)	-0.0013	(0.27)
TONE_MPT	0.0738	(1.19)	0.0215	(0.36)
Controls for Year Effects	Yes		Yes	
Intercept	-0.0242	(1.00)	0.0092	(1.01)
Adjusted R2	2.63%		2.19%	
N	10992		10992	

### 3. Conclusions

Several academic studies investigate the informational role of the interactive discussion between market participants and corporate insiders, reflecting the increased importance of the discussion. However, whether and how the expectations of event participants are affected by management and participants' comments and moods has largely remained underexamined. Our investigation of the tones of participants' and management comments helps fill this gap in the literature.

We draw several conclusions from our evidence. First, we find that the positive (negative) tone of other participants' comments induces upward (downward) revisions of analysts' earnings forecasts without resulting in any overestimation (underestimation) of their earnings forecasts. In contrast, tones of management comments have little association with analysts' forecast revisions, suggesting that management comments have little impact on analysts' expectations regarding company performance. These findings suggest that interactive discussions provide a role in exchanging information and moods between event participants rather than between corporate insiders and participants.

Our study has broad implications for the disclosure literature. First, our study is the first to provide empirical evidence on the informational sharing between event participants. We empirically show that each analyst's expectation is significantly affected by other participants' (peer's) comments. Second, our result highlights the current problem in the interactive discussion. Despite the significant cost of providing an opportunity for interactive discussion, our result shows that the interactive discussion provides a little role in exchanging information and opinions between a hosting firm and participants.

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