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Two Essays on Soft Disclosure Properties in Earnings Conference Calls: Tone and Time Frames

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Two Essays on Soft Disclosure Properties in Earnings Conference Calls: Tone and Time Frames

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Abstract

This thesis explores two properties of the informativeness of US firms' earnings conference calls, which have become an important disclosure channel.

In the first essay, I use refined tone measures to examine the informativeness of *tone*. Consistent with the expectation that associated contexts influence the informativeness of tone, I find that forecast tone – tone associated with earnings-oriented and quantitative forward-looking statements – drives the positive association between tone and firms' future earnings. Examining market responses to different tones, I find suggestive evidence that the market is aware of the informativeness of tone but does not fully realize where the informational value comes from.

In the second essay, I explore the informativeness of the *time frame* property in forward-looking disclosures (FLSs), namely, whether managers mention time frames in their forecasts. There are three major findings. First, uncertainty is only positively associated with forward-looking disclosure without time frames. Second, investors respond more quickly to FLSs with time frames, and analysts use FLSs – both those with and without time frames – to improve earnings forecast, but FLSs without time frames lead to more disagreement, and FLSs with time frames decrease disagreement. Third, the absolute change in future earnings and discretional accruals increases with FLSs without time frames, and the capital investment in the next quarter only increases with FLSs with time frames. These findings suggest that uncertainty may add to the difficulty for managers to forecast time frames, and that information in the FLSs without time frames may be more difficult for the market to digest, and FLSs with time frames may reveal a more foreseeable future path for the firm.

Collectively, this thesis adds to the understanding of the soft disclosure properties in earnings conference calls.

Declaration

This is to certify that

i this thesis comprises only my original work toward my degree;

ii due acknowledgment has been made in the text to all other material used; and

iii this thesis is fewer than 100,000 words in length, exclusive of tables, figures, bibliographies, and appendices.

Signature: …….

Yiyang WU

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Chapter 1: Introduction

This thesis explores the informativeness of U.S. firms' earnings conference calls, which have become an important disclosure channel since the implementation of Regulation Fair Disclosure (Reg FD) (Bushee et al., 2004; Gow et al., 2021). Conference calls facilitate communication due to flexibility in format and the interactive nature.

Soft disclosure properties in earnings conference calls have gained more attention from the industry and academics. For example, the tone (Matsumoto et al., 2011), the interaction between managers (J. V. Chen et al., 2018), and the number of numbers (Campbell et al., 2021). This thesis is aimed to add more understanding to the informativeness of those soft disclosure properties. The thesis focuses on the linguistics of the forward-looking disclosure in earnings calls because forward-looking information is of critical importance for the capital market to be informed of the firms' future performance (Bozanic et al., 2018).

In the first essay, I examine the informativeness of the disclosure tone, namely, where it comes from and how the market responds to it. In the second essay, I explore the informativeness of the time frame property of managers' forward-looking disclosure (i.e., whether managers explicitly mention time frames in forecasts).

1.1. Summary of Essay 1

Prior research suggests that the tone of corporate communications is informative to the market. (e.g., Davis et al., 2012; Li, 2010). However, it remains unclear why the tone is informative. In this first essay, I refine the tone measures of corporate communications in quarterly earnings conference calls to answer this question.

Based on the intuition that the tone associated with informative context is more likely to be informative, I identify earnings-related quantitative forward-looking statements (FLSs) following prior studies (Bozanic et al., 2018; Muslu et al., 2015), and measure the tone of those sentences in managers' presentations as a net positivity based on a dictionary specifically designed for financial reporting (Loughran & McDonald, 2011). The tone is labeled as ***forecast tone***, and the tone of the other part of the managers' presentation is the ***non-forecast tone***.

First, forecast FLSs are more about the firm's future operations, supported by numbers, and contain more details about forecasts or forecasts not covered in previously issued management guidance; besides, the tone of forecast FLSs could be incrementally informative since tone could contain more information in communication than the "hard information" of the numbers. Based on this reasoning, I predict and test whether the forecast tone is more informative of future earnings than the non-forecast tone. Empirically, I regress future earnings (return on assets, ROA, of the following four quarters) on the forecast tone and the non-forecast tone, or the overall tone, controlling for firm characteristics, past earnings, industry fixed effect, year fixed effect, and different information signals (i.e., management earnings guidance issued in the three days around the call; the percentages of FLSs and forecast FLSs,

and the present of forecast FLSs in the call). The forecast tone significantly predicts firms' future earnings (ROA in subsequent quarters). In contrast, non-forecast tones and the overall tone have no or limited predicting power, suggesting that forecast tone has inherent informativeness of firms' future earnings.

Second, I predict and test whether the market (investors and analysts) responds more to the forecast tone than the non-forecast tone. My rationale is as follows: Thoughtful participants in the market may allocate attention rationally (Kacperczyk et al., 2016) and assess the credibility based on evidence (Baginski et al., 2016). However, counterarguments exist, and market response may not rationally reflect forecast tone's informativeness on future earnings since market participants could suffer from bias in processing information (e.g., Frydman & Wang, 2020) and the process is costly (Blankespoor et al., 2020). Empirically, I regress market response measures – cumulative market- or size-adjusted returns in the three-day event window and during the month after the call, as well as analyst revisions around the conference call – on the forecast tone and the non-forecast tone, or the overall tone, with similar controls for the first hypothesis. I find that investors react positively to the overall tone and the non-forecast tone but not to the forecast tone. Analysts seem more aware of where the informativeness comes from, as they respond positively to the overall, non-forecast, and forecast tones. Overall, findings suggest that the market fails to catch the informativeness of tone effectively.

Additional analysis shows that the tone in the forward-looking statements or forecasts does not have the incremental predicting power for firms' future earnings as forecast tone. Findings in a seemingly unrelated bivariate probit regression suggest that firms may be less willing to provide

earnings guidance but more likely to provide forecast FLSs in conference calls when uncertainty is high. To the extent that managers' forecast information could be valuable when uncertainty about firms' operation is high, especially for outsiders (Maslar et al., 2021), the informational value of forecast FLS and forecast tone is further enhanced.

This essay contributes in two ways. First, it explores the sources of informativeness of tone. It suggests that the disclosure tone is informative because it facilitates communication of managers' private information about the firm's future operations, which seems to be overlooked by the market. Second, it supports the usefulness of dictionary-based tone measures and textual analysis in classifying disclosure contexts in a corporate oral communication setting.

1.2. Summary of Essay 2

Though forward-looking disclosure can be valuable, its informativeness is hard to measure (e.g., Hutton et al., 2003; Hutton & Stocken, 2021; Rogers & Stocken, 2005), especially regarding general disclosure in addition to the quantified financial forecasts. Furthermore, different industries differ in the content of forecasts, adding to the difficulty of measuring informativeness. Some studies use disclosure indices that are unweighted or weighted scores about disclosure scopes (e.g., Krause et al., 2017; Petersen & Plenborg, 2006) or indices based on subjective analysts' opinions (Beretta & Bozzolan, 2008). Others infer indirectly from factors such as litigation risk and proprietary costs (e.g., Gigler, 1994; Ng et al., 2013; I. Y. Wang, 2007) which is more reflective of disclosure incentives.

This essay adopts a different and complementary approach based on a linguistic property of the forward-looking disclosure – whether the forward-looking statements (FLSs) specify time frames for the realization of the forecast. This alternative approach is based on the reasoning that time frames facilitate the comparison of the forecast with its realization and increase credibility (e.g., Rosenthal, 1971). Admittedly, some forecasts, by definition, come with time frames, such as earnings for the next quarter or this fiscal year. However, this essay focuses on whether managers mentioning the time frame explicitly makes a difference. Because this approach is based on managers' speeches, it is not as subjective as the quality measure based on analysts' opinions and captures disclosure behaviors directly. Besides, this approach readily applies to general forward-looking disclosures across industries.

First, I identify forward-looking statements (FLSs) with and without time frames in the managers' speech using a keyword search with keyword lists adapted from prior studies (Brochet et al., 2015; Muslu et al., 2015). Then I measure their proportions in managers' speeches respectively. Second, I use three angles to test the informativeness of the time frame property. Namely, I explore the relationship between the time frame property of forward-looking disclosures and uncertainty, its market responses, and its implications for the firm's future performance.

There are three major findings. First, uncertainty is positively associated with providing forward-looking disclosure without time frames after controlling for firm characteristics, year-fixed effect, and industry-fixed effects. This is probably because it is more difficult for managers to specify time frames when there is uncertainty or because managers do not want to be held accountable if forecasts are not realized when there is uncertainty. Consistent with this the impact of uncertainty on non-provision of

time frames is stronger for firms of larger sizes and higher institutional ownership, which attract more attention from the market.

Second, investors respond more quickly to FLSs with time frames than those without time frames in terms of absolute stock returns and share turnover. Analysts use FLSs—both those with and without time frames—to improve earnings forecasts. While FLSs without time frames lead to more disagreement among analysts on earnings forecasts, FLSs with time frames decrease disagreement. Collectively, evidence suggests that FLSs without time frames may be more difficult for the market to digest.

Third, the absolute change in future earnings and discretional accruals are greater with more FLSs without time frames in the managers' speech, and the capital investment in the next quarter only increases with FLSs that have time frames. This finding suggests that more FLSs with higher (lower) time frame verifiability may reveal a more (less) foreseeable future path for the firm.

Overall, this essay suggests that whether managers mention time frames of forward-looking disclosures varies as a function of uncertainty and the disclosure contains information.

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Chapter 2: Not all Tones are Equal: Forecast Tone in Earnings Conference Calls

Abstract

In this essay, I use refined tone measures to examine the informativeness of tone in the quarterly earnings conference calls of U.S. firms. Consistent with the expectation that associated contexts influence the informativeness of tone, I find that forecast tone—tone associated with earnings-oriented and quantitative forward-looking statements—drives the positive association between tone and firms' future earnings. Examining market responses to different tones, I find suggestive evidence that the market is aware of the informativeness of tone but does not fully realize where the informational value comes from, with the issue more severe with investors.

Keywords: disclosure tone, conference calls, textual analysis

2.1. Introduction

Prior research suggests that the tone of corporate communications is informative to markets. (e.g., Davis et al., 2012; Li, 2010), but it remains unclear why the tone is informative. In this essay, I use refined measures of the tone of corporate communications in quarterly earnings conference calls of US firms to explore this question.

The refined measures of tone that I consider focus on the nature of the underlying statements. The first dimension I identify is whether the statement relates to the past or the future. Prior research suggests that statements about the future—forward-looking statements—are informative (Bozanic et al., 2018; Matsumoto et al., 2011). To identify forward-looking statements (FLSs), I follow established measures in Muslu et al. (2015). The second dimension I focus on is whether the underlying statement is quantitative and related to earnings. To achieve this, I use the standards in Bozanic et al. (2018) to determine whether a sentence is both earnings-oriented and quantitative or not. The two dimensions help distinguish quantitative and earnings-related forward-looking statements, which are denoted as forecast FLSs

Then, I construct tone measures as the difference between the percentages of positive keywords and negative keywords as a proxy for the net positivity implied in tone, based on a dictionary specifically designed for financial reporting (Loughran & McDonald, 2011). The tone of these forecast FLSs is labeled as ***forecast tone***, and the tone of the whole presentation transcript, besides forecast FLSs, is the ***non-forecast tone*** in this essay.

The first hypothesis I test is that forecast tone is more informative of future earnings than the non-forecast tone in earnings conference calls. As detailed in Section 2.2.1, my rationale for that is that forecast FLSs are more about the firm's future operations, supported by numbers, and contain more details about forecasts or forecasts not covered in previously issued management guidance; besides, the tone of forecast FLSs could be incrementally informative since tone could contain more information in communication than the "hard information" of the numbers.

Empirically, I use the return on assets (ROA) of the following four quarters to proxy for future earnings. Specifically, I regress ROA on forecast tone and non-forecast tone, or the overall tone, controlling for firm characteristics, past earnings, industry fixed effect, year fixed effect, and different information signals (management earnings guidance issued in the three days around the call; the percentages of FLSs and forecast FLSs, and the present of forecast FLSs in the call).

I find that forecast tone significantly predicts firms' future earnings (ROA in subsequent quarters). In contrast, the non-forecast tone has no predicting power, and the overall tone has no or limited predicting power. The finding suggests that forecast tone could have inherent informativeness of firms' future earnings (i.e., the tone itself may not be informative, and its informativeness of future earnings may manifest only when associated with an earnings-related forecasting context).

The second hypothesis I test is that the market (investors and analysts) responds more to the forecast tone than the non-forecast tone. My rationale is as follows: Thoughtful participants in the market may allocate attention rationally (Kacperczyk et al., 2016) and assess the credibility based on evidence (Baginski et al., 2016). However, counterarguments exist, and market response may not

rationally reflect forecast tone's informativeness on future earnings since market participants could suffer from bias in processing information (e.g., Frydman & Wang, 2020) and the process is itself costly (Blankespoor et al., 2020).

Empirically, I measure investors' responses with cumulative market- or size-adjusted returns in the three-day event window and during the month after the call event window, as well as analysts' responses with analyst revisions around the conference call. I regress these market response measures on forecast tone and non-forecast tone, or the overall tone, with similar controls used in testing the first hypothesis.

I find that investors react positively to net positivity in overall tone, as shown in the positive association between abnormal returns during the 3-day event window (and during the month after the event) and the overall tone. However, there is evidence that investors may fail to distinguish the informativeness of forecast tone and non-forecast tone but somehow know the importance of the existence of forecast FLS, which helps them to respond to tone with less bias. I also find that analysts, like investors, respond (forecast revision) positively to positivity implied in the tone of the whole call presentation portions besides forecast FLS, and the difference is that analysts react positively to positivity implied in forecast tone while investors do not; They seem to note the incremental predictive power of forecast tone as they view the tone of the conference calls with forecast FLS present as more credible. The findings suggest that while analysts may still not fully understand where the informative tone comes from as investors, they may be more sensitive to forecast information than investors.

Additional analysis shows that the tone in all forward-looking statements does not have the incremental predicting power for firms' future earnings (proxied by ROA of the following four quarters) as forecast tone. Findings in a seemingly unrelated bivariate probit regression suggest that firms may be less willing to provide earnings guidance but more likely to provide forecast FLSs in conference calls when uncertainty is high. To the extent that managers' forecast information could be valuable when uncertainty about firms' operation is high, especially for outsiders (Maslar et al., 2021), the informational value of forecast FLS and forecast tone is further enhanced.

This essay contributes in two ways. First, it explores the sources of informativeness of tone and suggests that disclosure tone is informative because it facilitates communication of managers' private information about the firm's future operations. The market seems to have overlooked this.

Second, this essay supports the usefulness of dictionary-based tone measures and textual analysis in classifying contexts in disclosure. In a related study, Li (2010) uses machine learning to measure FLS tone in the MD&A section of SEC filings and argues against the usefulness of dictionary-based tone measures. Findings in this essay suggest that the null result in Li (2010) may result from using less suitable dictionaries for corporate disclosure or examining a disclosure setting where the tone is less relevant.

2.2. Hypothesis Development

2.2.1 The Informativeness of Forecast Tone

I classify tone based on its associated context and focus on forecast tone, the tone in the earnings-oriented and quantitative forward-looking statements (forecast FLSs). In the next section, I develop the theory for the informativeness of forecast tone.

2.2.1.1 The Informativeness of Forecasts in Voluntary Disclosure

Theory suggests that management forecasts are informative. While management forecasts are voluntary, there are reasons for managers to provide them and for them to be informative. First, the expectation adjustment hypothesis (Ajinkya & Gift, 1984) suggests that managers use forecasts to align the expectations of information receivers with their own. Management forecasts serve as a channel for informed insiders to share their private information about future performance, and financial statements are less feasible for this function. Second, quantitative forecasts are more ex-post verifiable than other disclosures, limiting managerial opportunism.

There is empirical evidence suggesting that management forecasts are informative. For example, Beyer et al. (2010) show that more than half of accounting-based information comes from management forecasts. Maslar et al. (2021) find that management forecasts are more valuable than analyst forecasts during economic downturns. Bozanic et al. (2018) find that earnings-related and quantitative forward-looking statements in earnings announcements are associated with more significant absolute abnormal returns during the announcement window and sharper improvements in the accuracy of analyst

earnings estimates. I further reason that forecast FLSs in the earnings conference call presentations can be incrementally informative to other disclosure channels where managers provide forecast information. Management guidance can be issued via special press releases, and earnings press releases may have been issued before calls and contain management guidance. First, to comply with the Reg FD, the managers often need to provide initial disclosure of material information (including guidance) in the earnings press release. However, they can still discuss details in the following conference calls.[1] Therefore, through forecast FLSs in earnings conference calls, managers may provide details on previously issued guidance, and these details can be incrementally informative. Second, managers may issue additional forecasts not considered material enough to be stated in the press release. Lansford et al. (2009) find that firms issue substantial forecast information exclusively via earnings conference calls.

To give a concrete example, the first quarter earnings press release of the year 2017 for Vaid Corp (VVI) and the related conference call transcript[2] are not the same in the guidance about this firm's Pursuit business.

[1] To comply with Reg FD, SEC suggests that "an issuer can use the press release to provide the initial broad distribution of the information, and then discuss its release with analysts in the subsequent conference call, without fear that if it should disclose additional material details related to the original disclosure it will be engaging in a selective disclosure of material information." For details, please refer to SEC website: https://www.sec.gov/rules/final/33-7881.htm#P172_66198

[2] Press release: http://s21.q4cdn.com/760353948/files/doc_news/2017/Q1/VVI-Earnings-Release-Q117-FINAL.pdf; call transcript: https://seekingalpha.com/article/4066500-viads-vvi-ceo-steve-moster-on-q1-2017-results-earnings-call-transcript

2.2.1.2 The Informativeness of Forecast Tone

To the extent that forecast FLSs are informative, I further reason that the associated tone (i.e., forecast tone) can be (incrementally) informative.

First, as suggested in prior research, "the replacement of soft with hard information inevitably results in a loss of information" (Liberti & Petersen, 2019), so managers may purposely leverage tone for better communication or convey more information via tone inadvertently. For example, Mayew and Venkatachalam (2012) find that "vocal cues from executives during conference calls can inform investors about a firm's future earnings and stock returns."

Second, numerical forecasts may be more conservative than tone. Overestimation of a forecast number may ruin managers' reputation for being transparent with investors or even lead to litigation risk. However, investors can reward underestimation followed by future confirmation of an increasing trend. The asymmetric penalty for errors is less of an issue with the tone, and therefore, the tone may be more neutral than the forecasted numbers. As evidence of managers' reputation concerns, Beyer and Dye (2012) find that some managers strategically "disclose the earnings forecasts they receive only when it is in their self-interest to do so", and "managers' incentive to build a reputation for being forthcoming may be so strong that they disclose even the most negative forecasts".

Third, managerial opportunism may decrease the informativeness of the disclosure tone. Huang et al. (2013) find that managers use a more positive tone when they have higher incentives to manage investor perceptions. To the extent that forecast FLSs are supported by earnings numbers, managerial opportunism is less likely to ruin the informativeness of the forecast tone.

While the above three reasons support the informativeness of forecast tone in conference calls, there are still some counterarguments. First, facilitating the communication of managers' informed forecast on a firm's future performance may only be one source of tone's informativeness. An important prerequisite to claiming the superior informativeness of forecast tone over non-forecast tone depends on the presumption that the classification of forecast and non-forecast tone is vertical to other classification dimensions that systematically determine tone's informativeness. Second, as suggested by Rogers and Van Buskirk (2009), litigation risk leads firms to decrease disclosures for which they may later be held accountable despite the increased protections offered by the safe harbor provisions in the 1995 Private Securities Litigation Reform Act. Hence, whether managers see protection for forward-looking statements as enough and are willing to provide informative voluntary forecasts is doubtful. Besides, if it is difficult for the market to assess the credibility of management forecasts with ex-post financial reports (for example, when earnings are volatile), there is still room for managerial opportunism (Rogers & Stocken, 2005b). Therefore, the informativeness of management forecasts and the forecast tone in conference calls is not guaranteed.

Considering the stronger supporting arguments, I put the first hypothesis as follows.

(H1) Forecast tone in the earnings conference calls is more informative of future earnings (ROA) than the non-forecast tone in earnings conference calls.

2.2.1.3 The Choice of Providing Forecast in Conference Calls

Note that the informativeness of forecast tone is conditional on the managers providing forecast FLS in the first place, which is also a choice of the managers. Therefore, the informational value of forecast FLS and forecast tone hinges on the situations in which firms provide forecast FLS. I classify situations based on an important dimension – a firm's future uncertainty.

First, managers' forecasts could be valuable when uncertainty is high. Hutton, Lee, and Shu (2012) find that in predicting a firm's annual EPS, while analysts provide more accurate forecasts than managers when the firm's "fortunes move in concert with macroeconomic factors such as Gross Domestic Product and energy costs", managers are more accurate than analysts when management's actions are opaque to outsiders (in cases that "the firm's inventories are abnormally high or the firm has the excess capacity or is experiencing a loss"). Similarly, Maslar, Serfling, and Shaikh (2021) argue that given the significantly increased uncertainty in economic downturns, managers are better positioned to predict the firm's future because they have easier access to inside information and can take strategic actions. Their argument is supported by the findings that "larger stock price reactions and analyst forecast revisions to news in management forecasts during downturns" and "management forecast accuracy increases during downturns".

Further, if managers are more likely to provide (or provide more) forecast FLS when uncertainty is high, the informational value of forecast FLS and forecast tone is enhanced. There are two lines of literature on managers' incentive to provide forecast information when uncertainty is high. As the first line, prior research suggests that managers are less likely to issue earnings guidance when a firm's

future is less predictable (S. Chen et al., 2011; Waymire, 1985). As the second line of literature, Matsumoto et al. (2011) find that managers provide more forward-looking statements in earnings conference calls when firm performance is poor. Bozanic et al. (2018) also document that managers provide more general forward-looking statements in earnings announcements when the firm experiences a recent loss, has higher earnings volatility, or has higher implied volatility. Evidence in the second line of the literature suggests that managers may substitute earnings guidance with forward-looking disclosure in other settings when uncertainty is high.

These two lines of literature can be aligned based on insights from Waymire (1985): providing forecasts is associated with additional costs and benefits for managers when uncertainty is high; on the cost side, goals are more likely to be unattained in uncertain situations, and this may increase the likelihood of penalties for managers; on the other hand, it is more beneficial to align the expectations of outsiders with theirs when the uncertainty is high. Therefore, managers may refrain from issuing formal earnings guidance and provide other less formal disclosures to offer their opinions on the future of their firm. Following this logic, whether managers decrease or increase the provision of forecast FLSs in conference calls when uncertainty is high depends on whether they view forecast FLSs as general discussions or discussions of a specific earnings goal. This is ex-ante unclear and requires empirical examination (section 2.5.2 explores this question).[3]

[3] In a related study, Bozanic et al. (2018) find that managers provide less quantitative earnings forecasts in forward looking statements in the 8-K filings when uncertainty is high. But it is unclear whether this conclusion applies to forecast-like FLS in earnings conference calls which are more flexible in formats and richer in content.

2.2.2 Market Reactions to Forecast Tone

Market reactions provide a measure of the informativeness of forecast tone. The Bayesian learning model implies that rational investors place a higher weight on signals of higher quality. Empirical evidence supports that some fund managers have skills and allocate attention rationally (Kacperczyk et al., 2016). Consistent with this rationale, if the informativeness of tone arises from tone facilitating communication of managers' forecasts, market reactions should be sharper to the predicted positivity implied by forecast tone than that implied by non-forecast tone. Further, prior research suggests that the market views tone as more credible when accompanied by a consistent management earnings forecast, which is a timely alternative to ex-post verification (Baginski et al., 2016). This logic readily applies to forecast tone since it is directly incorporated in the quantitative earnings forecast, strengthening the prediction that forecast tone leads to a sharper market reaction.

(H2) The market (investors and analysts) responds more to the forecast tone than the non-forecast tone.

However, counterarguments exist, and market reactions may not fully reflect the informativeness of the forecast tone. First, investors suffer from salience bias (Frydman & Wang, 2020), and quantitative information may compete away information receivers' limited attention for its higher salience, muting the market reaction to forecast tone. Second, tone is not necessarily easier to process than the quantitative information. Empirical evidence shows that investors, anticipating managerial opportunism, make efforts to debiasing tone (Baginski et al., 2016; Rogers & Stocken, 2005b). If information receivers view the information processing cost of the quantitative forecast as lower than

tone, they may underweight tone to save on information processing capacity, consistent with implications of rational inattention models (Blankespoor et al., 2020).

2.3. Data

2.3.1 Sample

I examine quarterly earnings conference calls for three reasons. First, quarterly earnings conference calls are an important disclosure setting, and market responses are usually significant. Studying market responses provides an alternative to looking at the informativeness of tone. Second, quarterly earnings conference calls are regular events not driven by special firm events, which may compound my empirical tests. Third, the tone should be more relevant in conference calls than SEC filings. I focus on the presentation part of conference calls since I cannot precisely extract managers' disclosure in the Q&A sessions. Admittedly, this may introduce biases to the results as some forecasts could be in Q&A sessions and are worthy of further investigation.

I obtain transcripts of quarterly earnings conference calls for US firms from 2000 to 2020 via StreetEvents and restrict the sample to firm-quarters with available financial information from Compustat (require non-missing quarterly earnings and lagged book value of total assets) and stock returns from CRSP. I construct tone measures for 146,152 calls. I get analyst forecasts from I/B/E/S and institutional ownership from Thompson Reuters. The number of firm-quarters used in each regression varies depending on the specification.

2.3.2 FLS (and forecast FLS) Identification and Tone Measures

In this essay, I use textual analysis to identify FLS and forecast FLS in the presentation part of conference calls. Therefore, an ex-ante caveat is that the analysis is a joint test of the validity of this method and the proposed theory. Identifying FLS may be imprecise because it requires subjective judgment, and a uniform classification algorithm may not properly tackle the challenge of different industries having different forward-looking information (Bozanic et al., 2018). I use the practice in prior research with relatively established effectiveness to improve methodological validity. Following Muslu et al. (2015), a sentence is classified as FLS if it includes (1) keywords that refer to the future (e.g., “next year”), (2) verb conjugations that refer to the future (e.g., "plan to"), (3) or references to a future year compared to the conference call year. The set of keywords is from the appendix of Muslu et al. (2015). Next, I use the standards in Bozanic et al. (2018) to further classify FLS as earnings-oriented or not, and quantitative or not, and take the earnings-oriented and quantitative FLS as forecast FLS. The Python code I use is adapted from Anand et al. (2020).

In prior research, Li (2010) argues against general dictionary-based tone measurement. In this essay, I construct tone measures based on a dictionary specifically designed for financial reporting (Loughran & McDonald, 2011). I take the difference between the percentage of positive and negative keywords as a proxy for the net positivity implied in tone. In this way, I construct tone measures for the whole presentation (TONE), the FLS portion (FL_TONE) and the remaining portion (NFL_TONE), the forecast FLS portion (FORECAST_TONE) and the remaining portion

(NONFORECAST_TONE)[4]. I construct a fog index for the presentation part as a proxy for disclosure transparency following Li (2010). The Python code is adapted from the *ling_features* GitHub repository.[5]

2.3.3 Proxies for Informativeness of and Market Responses to Tone

To test the informativeness of tone, I follow Li (2010) and examine whether the tone has incremental predicting power on the firm's future earnings, which is proxied by returns on assets for the subsequent four quarters.

I examine the short-term and medium-term stock market performance to measure market responses. Specifically, I accumulate market and size-adjusted[6] stock returns for the three trading days around the earnings conference call (CAR_CALL) and the following month starting from the second trading day after the call (REVERSAL_MONTH).

I examine the analyst revision (REVISION) on the next quarter's EPS to measure analyst responses. Adapted from Bonsall et al. (2013), analyst forecast revision (REVISION) is calculated as the difference between the median analyst forecast within 45 days before (and most adjacent to) the conference call and the median forecast within 30 days after (and most adjacent to) the call, scaled by

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[4] In the robustness analyses, I also consider tone measure for general guidance statement. Specifically, I pick up a portion of the presentation: for every speech from one speaker, if the key word "guidance" exists or the speech contains forecast FLS, I extract the forward-looking statements from that speech, and then I combine all those forward-looking statements, and construct tone measures.

[5] Ian Gow, ling_feuatures, (2018), GitHub repository, https://github.com/iangow/ling_features

[6] As the results are qualitatively similar whether using market-adjusted returns or size-adjusted returns, the appendix reports market-adjusted returns by default.

the stock price two trading days before the call.

2.3.4 Controls

Following previous studies (Bozanic et al., 2018; Campbell et al., 2021; Li, 2010), I include a set of controls in the analysis of the (incremental) informativeness of and market responses to tone.

Current performance is measured by EARN, quarterly earnings scaled by the beginning book value of assets, and LOSS, a dummy that equals one if earnings are negative and 0 otherwise. The LOSS dummy is to capture the asymmetric influence of negative earnings. ***Accruals*** (ACC) are calculated as the difference between the quarterly net income and operating cash flow scaled by the beginning book value of assets. Stock Returns (RET) are measured by the holding period return in the fiscal quarter calculated using CRSP monthly data. Firm size (SIZE) is the natural logarithm of the market value of equity at the end of the quarter. Market-to-book ratio (MTB) is the market value of equity plus the book value of total liabilities scaled by the book value of total assets. Firm age (FIRMAGE) is the number of years since the firm first appears in the CRSP monthly file to the focal conference call. Volatility of operations is measured by the standard deviation of quarterly returns on assets in the last five years (EARNVOL), the standard deviation of monthly stock returns in the 12 months before the end of the fiscal quarter using CRSP monthly data (RETVOL). The complexity of operations is measured by NITEMS, the number of non-missing items in the Compustat Quarterly File for each firm-quarters and NBSEG (NGSEG), the natural logarithm of 1 plus the number of business (geographic) segments. Firm events are captured in three items: SI, the amount of special items scaled

by the beginning book value of assets; MA, a dummy that equals one if the amount of acquisition (Compustat item AQC) is greater than 10 percent of the beginning total assets in that fiscal year, and 0 otherwise; and SEO, a dummy that equals one if the sale of common and preferred stock (Compustat item: SSTK) is greater than 10 percent of beginning total assets, and 0 otherwise. Incorporated State is measured with a dummy variable DLW that equals one if a firm is incorporated in Delaware and 0 otherwise. Disclosure transparency is captured by the fog index of the presentation part of the conference call (FOG), following Li (2010). The information environment is measured by the natural logarithm of 1 plus the number of analysts following (LANALYST). Unexpected earnings (SUE) is the difference between the realized EPS and the median analyst forecast right before the conference call, scaled by the stock price two trading days before the call. Institutional ownership (IOR) is the institutional ownership percentage. Reporting quarters are measured by quarter indicators Q2, Q3, and Q4. To deal with disproportional influences of extreme outliers, RET, ACC, SIZE, MTB, RETVOL, EARNVOL, and SI are winsorized at the top and bottom 0.5%, and EARN is winsorized at -3 and 3[7]. Variable definitions and calculation methods are detailed in Appendix A.

[7] The conclusion does not change without winsorization.

2.4. Research Design and Empirical Tests

2.4.1 Summary Statistics and Correlation between Different Tones

Table 1 reports sample distribution over the years and summary statistics. Around one-fifth of earnings conference calls annually provide forecast FLS (Panel C). Summary statistics in Panel A show that the forecast tone has a larger standard deviation than the non-forecast tone, and its mean value is negative (-0.6%). In comparison, the mean value of the overall tone is positive (0.9%). Panel D depicts the pair-wise correlations of selected variables. Different tones are significantly and positively correlated. However, the correlation coefficient between forecast tone and non-forecast tone (overall tone) is only 0.14 (0.19), while the correlation coefficient between non-forecast tones and overall tone is nearly 1. It is worth noting that the correlation between forecast tone and FLS tone is also small (0.26), suggesting that tone in forecast FLS may be different from tone in general FLS (Panel D). However, whether the difference indicates different informativeness requires further analysis.

Additionally, the balance check in Panel B shows that firm quarters with and without forecast FLS differ in firm characteristics, emphasizing the importance of controlling for them in the main analysis.

2.4.2 Informativeness of Forecast Tone

Following Li (2010), I use the returns on assets for the following four quarters as proxies for the firm's future earnings and use the following regression design to test the informativeness of different tones (See Appendix A for variable definition).

$$EARN_i = \beta_0 + \alpha Tone\ measures + \beta_1 EARN + \beta_2 LOSS + \beta_3 RET + \beta_4 ACC + \beta_5 SIZE + \beta_6 MTB$$
$$+ \beta_7 FIRMAGE + \beta_8 EARNVOL + \beta_9 RETVOL + \beta_{10} NITEMS + \beta_{11} NBSEG$$
$$+ \beta_{12} NGSEG + \beta_{13} SI + \beta_{14} MA + \beta_{15} SEO + \beta_{16} DLW + \beta_{17} FOG + \beta_{18} LANALYST$$
$$+ \beta_{19} SUE + \beta_{20} IOR + \beta_{21} Q2 + \beta_{22} Q3 + \beta_{23} Q4 + \gamma_1 GUIDANCE + \gamma_2 FORECAST$$
$$+ \gamma_3 FLS\_PCT + \gamma_4 FORECAST\_PCT + year\ fixed\ effect$$
$$+ industry\ fixed\ effect + \eta \qquad (2)$$

Firm characteristics, past earnings, industry (2-digit SIC) fixed effect, and year fixed effect are controlled for. I include four measures to capture the predictive power of other information signals. Specifically, GUIDANCE is a dummy that equals one if there exists at least one management earnings guidance record in the three trading days around the conference call in the I/B/E/S database, and the identifying measures include 'EPS', 'GPS', and 'NET', following Bozanic et al. (2018); FORECAST is a dummy indicating if there exist any forecast FLSs in the transcripts; FLS_PCT (FORECAST_PCT) is the number of forward-looking statements (forecast FLS) as a percentage of the total number of sentences in the presentation. Evidence in previous research (Bozanic et al., 2018; S. Chen et al., 2011) suggests that managers providing forecasts is likely to be driven by firms' performance and future uncertainty, and therefore the presence of guidance may have implications on a firm's future earnings. The conclusion does not change without controlling for them. Standard errors are clustered at the firm level[8] to control for autocorrelation induced by firm heterogeneity. Note that the tone measure is the

[8] The conclusion does not change with standard errors two-way clustered by year-quarter and firm.

difference between the proportions of negative and positive words rather than a percentage, and return on assets (EARN) is also measured as proportions. This facilitates the display of regression coefficients.

Table 2 Panel A examines how tone measures are associated with earnings in the subsequent four quarters.

In Panel B, for brevity, I only tabulate results for the subsequent quarter. The sample in the first four columns is the same as that used in Panel A, composed of conference call presentations with forecast FLS (To facilitate comparison, column 1 in Panel A is listed again here). These first four columns present different tone measures. The sample in the fifth column comprises conference call presentations without forecast FLS, and the sample in the sixth column is further restricted to conference call presentations from firms that never provide forecast FLS in earnings conference call presentations. Finally, the seventh column is the whole sample.

The results in Table 2 Panel A and the first four columns in Panel B show that forecast tone is persistently and positively associated with future return on assets. Non-forecast tone does not have predictive power. Second, the results in columns 4 to 7 of Panel B show that, with earnings of this quarter controlled for, the overall tone is not incrementally predictive of the future return on assets in the subsequent three quarters. In contrast, the forecast tone continues to show a significant positive association with returns on assets, and the effect decreases at a much slower pace (later quarters are not tabulated).

The results support H1 that the forecast tone is informative and more informative than the other general tones. Further, results also suggest that tone itself may not be informative, and its informational value may manifest only when associated with an earnings-related forecasting context.

2.4.3 Market Response to Forecast Tone

Next, I examine the market responses to different tones. Ex ante, I hypothesize that the market response may not be sharper for forecast tone than for non-forecast tone for reasons detailed in section 2.2.2.

$$
\begin{aligned}
&CAR\_CALL/REVERSAL\_MONTH/REVISION \\
&\quad = \beta_0 + \alpha Tone\ measures + \beta_1 EARN + \beta_2 LOSS + \beta_3 RET + \beta_4 ACC + \beta_5 SIZE \\
&\quad + \beta_6 MTB + \beta_7 FIRMAGE + \beta_8 EARNVOL + \beta_9 RETVOL + \beta_{10} NITEMS \\
&\quad + \beta_{11} NBSEG + \beta_{12} NGSEG + \beta_{13} SI + \beta_{14} MA + \beta_{15} SEO + \beta_{16} DLW + \beta_{17} FOG \\
&\quad + \beta_{18} LANALYST + \beta_{19} SUE + \beta_{20} IOR + \beta_{21} Q2 + \beta_{22} Q3 + \beta_{23} Q4 + \gamma_1 GUIDANCE \\
&\quad + \gamma_2 FORECAST + \gamma_3 FLS\_PCT + \gamma_4 FORECAST\_PCT + year\ fixed\ effect \\
&\quad + industry\ fixed\ effect + \eta \qquad (3)
\end{aligned}
$$

I examine the event window cumulative market- or size-adjusted returns (CAR_CALL), cumulative market- or size-adjusted returns in the subsequent month (REVERSAL_MONTH), and analyst revisions around the event window (REVISION). The regression design is like the regression examining the informativeness of tones, with market response proxies replacing future ROA as dependent variables. Note that the tone measure is the difference between the proportions of negative

and positive words rather than a percentage, and stock returns and analyst revision are also measured as proportions. This facilitates the display of regression coefficients.

Panel A in Table 3 presents the results for accumulated market-adjusted returns[9] (3 trading days around the conference call date) (CAR_CALL). In columns (4) to (7), the significantly positive coefficient estimates for TONE suggest that investors respond more positively to the implied positivity in overall tone, consistent with prior research (e.g. Davis et al., 2012; Li, 2010). Further, the presence of forecast FLS magnifies the pricing effect of tone, suggesting that the market may view tone with forecast FLS present as more credible. However, when comparing the forecast and non-forecast tones for firm quarters containing forecast FLS, most of the pricing effect is from the non-forecast tone. This finding may result from more salient and ex-post verifiable quantitative information competing away investors' limited attention, or investors may view tone as harder to process than quantitative information and underweight forecast tone to save on information processing capacity, consistent with implications of rational inattention models (Blankespoor et al., 2020).

Panel B displays the result of accumulated market-adjusted returns[10] from the second trading day to the 20th trading day after the conference call (REVERSAL_MONTH). While I expect some reversals to tone that do not incrementally predict future earnings, the result is the opposite. First, in columns (1) to (4), even when the conference call includes earnings forecast-like FLS, investors still positively respond to tone in other portion (NONFORECAST_TONE) or the overall tone (TONE), though in a

[9] Using size-adjusted returns give similar results and thus not shown.

[10] Using size-adjusted returns give similar results and thus not shown.

smaller magnitude than that during the three-day event window. However, there is no significant response to tone in earnings forecast-like FLS (i.e., forecast tone). Besides, investors respond positively to that quarter's return on assets (EARN), and this variable loads more weight than tone variables. Second, in column (5), with firm-quarters without forecast-like FLS, the overall tone is lower in informativeness (no significance if using size-adjusted returns), and return on assets positively affects cumulative stock returns. Third, in column (6), when the firm never provides forecast FLS in conference calls, investors do not respond to tone or return on assets during the month after the three-day event window. One possible explanation is that investors are more cautious with those firms.

Panel C reports results on analyst revision. In columns (4) to (7), results show that analysts adjust the forecast for the next quarter's EPS upward for more positive tones, with the effects being more significant with the presence of forecast FLS. For firms never providing forecast FLS, positivity implied in tone does not lead to a significant change in analysts' forecast, suggesting that, unlike investors, analysts view tone with forecast FLS as more credible. Unlike investors, analysts also respond to the positivity implied in the forecast tone. In the analysis not tabulated, the magnitudes of analyst revision responding to one standard deviation change in forecast tone and non-forecast tone are comparable when using standardized tone measures.

The above analyses suggest that the market does not fully respond to the most informative part of the tone, especially investors. However, analysts seem to note the incremental predictive power of forecast tone and view overall tone with forecast FLS present as more credible.

2.5. Additional Analyses

2.5.1 Forecast FLS Can be Incrementally Informative

In developing the first hypothesis, I argue that forecasting FLS in earnings conference calls can be incrementally informative. This section presents additional support for this argument. To proceed, I manually examine randomly chosen samples of forecast FLS identified by the algorithm. This also verifies the effectiveness of the algorithm in categorizing disclosure contexts.

First, I find that some firms provide forecast FLS to disclose details on previously issued guidance, a practice suggested by the SEC[11]. For example, in November 2018, Supernus Pharmaceuticals Inc (SUPN) disclosed in its third-quarter earnings conference its forecast for the licensing and royalty revenue for 2018, which was not included in its earnings press release.[12] Second, a substantial amount of forecast FLS contains forecasts that are not included in the prior earnings press release. As another example, in April 2017, during the first quarter earnings conference call, Mercantile Bank Corporation (MBWM) discussed the forecast of its non-interest income for the next three quarters of 2017[13] which was not stated in its press release.[14]

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[11] To comply with Reg FD, SEC suggests that "an issuer can use the press release to provide the initial broad distribution of the information, and then discuss its release with analysts in the subsequent conference call, without fear that if it should disclose additional material details related to the original disclosure it will be engaging in a selective disclosure of material information." For details, please refer to SEC website: https://www.sec.gov/rules/final/33-7881.htm#P172_66198

[12] https://seekingalpha.com/article/4219360-supernus-pharmaceuticals-supn-ceo-jack-khattar-on-q3-2018-results-earnings-call-transcript; https://ir.supernus.com/news-releases/news-release-details/supernus-announces-third-quarter-2018-financial-results-and

[13] https://seekingalpha.com/article/4063142-mercantile-banks-mbwm-ceo-bob-kaminski-on-q1-2017-results-earnings-call-transcript

[14] https://ir.mercbank.com/news-market-data/press-releases/press-release/2017/Mercantile-Bank-Corporation-Reports-Strong-First-Quarter-2017-Results/default.aspx

To further verify that forecast FLS can contain information not communicated in other ways, I look for records of management earnings guidance issued within 24 hours before the earnings call start time in the I/B/E/S database. I use I/B/E/S records as a proxy for the existence of management earnings guidance issued in the earnings press release, following the practice of Bozanic et al. (2018). Among the 32,242 conference calls with forecast FLSs, I can find records in I/B/E/S for only 46.9% (15,133) of those earnings calls. If I restrict records on the IBES database to only quarterly management earnings guidance, the percentage is only 26.6% (8,566). Note that I only focus on the existence of records, and an exact match between the forecast information and records in the I/B/E/S database will restrict the size further. The statistics further support the argument that the forecast FLS can contain information in addition to management earnings guidance issued in the press releases.

2.5.2 Managers Provide Forecast FLS When it is More Valuable

As discussed in section 2.2.1.3, the informational value of forecast FLS and forecast tone depends on the situations in which managers provide forecast FLS. If managers are more likely to provide (or provide more) forecast FLS when uncertainty is high, and managers' forecast is more valuable in uncertainty (Maslar et al., 2021), the informational value of forecast tone is enhanced.

To proceed, I examine the determinants of managers' decisions to issue formal earnings guidance and provide forecasts in conference calls. Since these two decisions will likely be determined together, I conduct a seemingly uncorrelated bivariate probit regression analysis of their determinants. The presence of earnings guidance is proxied by a dummy GUIDANCEQ, indicating the existence of at

least one record of management earnings guidance in I/B/E/S +/-90 days around the earnings conference call. The identifying measures include ‘EPS’, ‘GPS’, and ‘NET’, following Bozanic et al. (2018).

Though I/B/E/S records may include those disclosed through forecast FLS in conference calls (ideally, I want to have a proxy for the existence of other management earnings guidance), the significantly different coefficient estimates in Table 4 provide some assurance that the GUIDANCEQ dummy mostly captures other management guidance. The results show that managers in firms experiencing loss are more likely to provide forecasts in conference calls and less likely to issue management guidance. While managers in firms with more volatile earnings and stock returns are less likely to issue earnings guidance, the decision to provide forecasts in earnings conference calls is much less insensitive to operational volatility. These findings suggest that forecast FLSs are present when uncertainty is high (and when they are more valuable) and the informational value of forecast tone is enhanced.

2.5.3 It is Forecast Tone not Tone in Forward-looking Statements (or Tone in General Forecast Statements) that Matters

To verify that it is tone in forecast FLS rather than tone in general FLS that is informative, I examine the incremental predictive power of the firm's future earnings of tone in the FLS portion (FL_TONE) and tone in the non-FLS portion (NFL_TONE). Results are reported in Table 5 Panel A. When forecast tone is included, we can see that most of the informativeness comes from the forecast tone.

In the main analysis, the focus is on tone in forecast FLS. Following similar steps, I examine the incremental predictive power of the firm's future earnings of tone in general forecast statements (GF_TONE) and tone in the other portion (NONGF _TONE). Besides earnings, these general forecast statements also include forecasts on expenses, tax rates, etc. I pick up the tone from general forecast statements from the presentation of a conference call with the following steps: for every speech from one speaker, if the keyword "guidance" exists or the speech contains forecast FLS, I extract the forward-looking statements from that speech, and then I combine all those forward-looking statements in the "guidance" context and construct a tone measure, GF_TONE. The tone in the other portion of the presentation is denoted as NONGF _TONE. Results are reported in Panel B and reinforce that most informativeness comes from the forecast tone.

These findings strengthen the argument that the informativeness of tone comes from facilitating communication of managers' informed opinions on the firm's future.

2.6. Conclusion

Understanding why tone is informative is important for researchers and market participants to treat tone as a form of soft disclosure rather than a mere linguistic feature and for regulators to consider how to discipline it. In this essay, I am motivated to find the source of its informativeness.

The tone related to predicting a firm's future may be more informative. However, the validity of this argument depends on multiple factors. For example, it requires managers to have an informational

advantage and be willing to disclose voluntarily. Even when the forecast is informative, this does not translate into an incrementally informative tone. To proceed, I examine US firms' quarterly earnings conference calls, a situation where tone should be more relevant. Specifically, I classify tone based on its associated contexts using textual analysis and examine the predictive power of and the market reaction to different tones.

I find that forecast tone, the tone in the earnings-oriented and quantitative forward-looking statements, predicts the firm's future earnings, and the tone in the non-forecast part or tone in conference calls without forecast FLS seems to be much less informative on a firm's future. I suggest that forecast tone has its inherent informational value (i.e., the tone itself may not be informative, and its informational value may manifest only when associated with an earnings-related forecasting context). On the other hand, the market views tone with forecast FLS presents more credibility. However, investors seem not to respond to the most informative part of the tone (with the issue less severe with analysts).

Further analysis shows that it is the forecast tone rather than the tone in general forward-looking statements that is informative, supporting the argument that the informativeness of tone comes from facilitating communication of managers' informed opinions on the firm's future. Besides, the seemingly unrelated bivariate probit regression analysis suggests that firms are less willing to provide earnings guidance but more likely to provide forecasts in earnings conference calls when uncertainty is high. To the extent that managers' forecasts are valuable when uncertainty is high (Maslar et al., 2021), the informational value of forecast tone is enhanced.

The above analysis suggests that disclosure tone is informative (primarily) because it facilitates communication of managers' informed forecast on a firm's future, especially when uncertainty is high. The findings also support the usefulness of dictionary-based tone measures and textual analysis in classifying contexts in the earnings conference call, an important disclosure channel.

There are some caveats in this essay. First, to test the informativeness of tone, it is important to control for other predictors of a firm's future earnings. If the list of controls is not exhaustive (which is very likely), the validity of the test requires that uncontrolled factors are uncorrelated with tone. One mitigation for this concern is that the tone in forward-looking statements does not seem different from that in other portions regarding informativeness (both are uninformative). This finding at least rules out the possibility of missing controls correlated with both the tone in FLSs and that in forecast FLSs, because if they exist, I should document similar patterns for tone in FLSs.

Second, I focus on the presentation part of the conference call because it is delivered mainly by managers. This also assumes that the informativeness in the Q&A part is relatively uncorrelated with the informativeness of the presentation part. If managers who provide less forecast in the presentation are questioned more and thus provide more opinions on firms' future in the Q&A part, the assumption does not hold. One mitigation is that I capture forecast FLS by the criterion that a sentence must be both earnings-oriented and quantitative. I reason that managers are more likely to provide this information in the presentation part with prepared scripts. Future research could extend the analysis to include the Q&A part for a more comprehensive view.

Third, while the findings support the usefulness of dictionary-based tone measures and textual analysis in classifying FLS and forecast FLS, my test is still a joint test of the validity of the methodology and the proposed hypothesis. Even when the methodology is valid, the tone measure in this essay only captures one dimension of tone—implied positivity. Other dimensions of tone may also be informative, and future research can explore dimensions such as certainty, uncertainty, and sentiment complexity to enhance a more nuanced understanding.

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Appendix A: Variable Definition

Variable	Definition and Calculation
Linguistic Features of Conference Call Presentation	
FORECAST	FORECAST is a dummy if there is at least one forward-looking sentence that is both earnings-oriented and quantitative in the presentation.
FLS	FLS is a dummy if the presentation has at least one forward-looking sentence.
FORECAST_PCT	The number of forecast-like forward-looking sentences as a percentage of the number of all sentences in the presentation.
FLS_PCT	The number of forward-looking sentences is deflated by the number of all sentences in the presentation.
TONE	Tone is the difference between the percentage of positive keywords minus the percentage of negative keywords for the whole presentation part of the call. The keyword list is from Loughran & McDonald (2011)
FORECAST_TONE	It has a construction method similar to TONE, but it only considers the forecast FLS portion.
NONFORECAST_TONE	It has a similar construction method as TONE but only considers the non-forecast FLS portion.
FL_TONE	It has a similar construction method as TONE, but the difference is that it only considers the FLS portion.
NFL_TONE	It has a similar construction method as TONE, but the difference is that it only considers the non-FLS portion.
GF_TONE	It has a similar construction method as TONE, with the difference that it picks up a portion of the presentation: for every speech from one speaker, if the keyword "guidance" exists or the speech contains forecast FLS, I extract the forward-looking statements from that speech, and then I combine all those forward-looking statements, and construct tone measures. I use it as a proxy for tone in general forecast statements.
NONGF _TONE	It has a similar construction method as TONE, with the difference that it picks up a portion of the presentation: for every speech from one speaker, if the keyword "guidance" exists or the speech contains forecast FLS, I exclude the forward-looking statements from that

Variable	Definition and Calculation
	speech, and then combine all remaining part of the presentation, and construct tone measures.
Firms' Future Earnings Measure	
EARN	EARN is the quarterly earnings scaled by the beginning book value of assets (NIQ/Lag(ATQ)).
Market Response	
CAR_CALL [-1,1]	Accumulated three trading days' market or size-adjusted return around the conference call date.
REVERSAL_MONTH (i.e. CAR[2:20])	Accumulated market or size-adjusted returns for the month following the conference call, from the second to the 20th trading day after the conference call.
REVISION	Analyst forecast revision for the next quarter is calculated as the difference between the median analyst forecast 45 days before (and most adjacent to) the conference call and the median forecast within 30 days after (and most adjacent to) the conference call. Scaled by the stock price two trading days before the focal conference call.
Other Variables	
LOSS	LOSS is a dummy that equals one if EARN is negative.
ACC	ACC is the accruals scaled by the beginning book value of assets ((NIQ - OANCFQ)/ Lag(ATQ).
RET	RET is the holding period stock return in the fiscal quarter calculated using CRSP monthly return data.
SIZE	SIZE is the natural logarithm of the market value of equity at the end of the quarter (log(PRCCQ * CSHOQ)).
MTB	MTB is the equity market value plus the total liabilities' book value scaled by the total assets' book value (PRCCQ * CSHOQ + LTQ) / ATQ.
EARNVOL	EARNVOL is the standard deviation of EARN in the last five years.
RETVOL	RETVOL is the standard deviation of monthly stock returns in the 12 months before the end of the fiscal quarter, using CRSP monthly return data.
FIRMAGE	FIRMAGE is the number of years since a firm appears in the CRSP monthly file.

Variable	Definition and Calculation
NITEMS	NITEMS is the number of non-missing items in the Compustat Quarterly File for each firm-quarters.
NBSEG/NGSEG	NBSEG is the natural logarithm of 1 plus the number of business segments, and NGSEG is the natural logarithm of 1 plus the number of geographic segments. Data is from the Compustat Segmentation File.
SI	SI is the amount of special items scaled by the book value of assets (SPIQ/Lag(ATQ)).
MA	MA is a dummy that equals one if the amount of acquisition (AQC) is greater than 10 percent of the beginning total assets and 0 otherwise.
SEO	SEO is a dummy that equals one if the sale of common and preferred stock (SSTK) exceeds 10 percent of the beginning total assets and 0 otherwise. I use Compustat Year File for both MA and SEO measures, as quarterly information on acquisition and seasoned offerings is often missing.
DLW	DLW is a dummy variable that equals one if a firm is incorporated in Delaware and 0 otherwise. Data is from the Compustat Company File.
LANALYST	NANALUST is the natural logarithm of the number of analysts following the firm, proxied by the number of quarterly EPS forecasts in the record just before the focal conference call. Data is from I/B/E/S.
SUE	SUE is standard unexpected earnings calculated as the difference between the realized EPS and the median analyst forecast just before the conference call, scaled by the stock price two trading days before the focal conference call. Data is from I/B/E/S.
IOR	Institutional ownership (percentage). Data is obtained from Thompson Reuters.
IO_G1	Institutional ownership (percentage) larger than 1%. Data is obtained from Thompson Reuters.
FOG	FOG is the fog index for the presentation part of the conference call to capture disclosure transparency.
Q2/Q3/Q4	The quarter indicator. For example, if the conference call occurs in the first quarter and the corresponding earnings reflect the firm's

Variable	Definition and Calculation
	performance in the fourth quarter of the past calendar year. Q4 is set to 1, while Q2 and Q3 are set to zero.
GUIDANCE	GUIDANCE is a dummy that equals one if the company issued earnings guidance on the three trading days around the conference call. Data is from the I/B/E/S management guidance dataset (the identifying measures include 'EPS', 'GPS', and 'NET', following Bozanic et al. (2018))
GUIDANCEQ	GUIDANCEQ is a dummy that equals one if the company issued an earnings guidance in the +/- 90 days around the conference call. Data is from the I/B/E/S management guidance dataset (the identifying measures include 'EPS', 'GPS', and 'NET', following Bozanic et al. (2018))

Table 1 Initial Look at Sample and Variables

Panel A: Summary Statistics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	N	MEAN	P50	SD	P1	P25	P75	P99
TONE	146,152	0.914	0.909	0.808	-1.064	0.394	1.438	2.842
FORECAST_TONE	32,242	-0.615	0	2.870	-9.091	-1.961	0	6.452
NONFORECAST_TONE	146,152	0.919	0.914	0.809	-1.058	0.398	1.443	2.851
FL_TONE	146,117	0.749	0.734	1.083	-2.008	0	1.405	3.448
NFL_TONE	146,152	0.952	0.945	0.876	-1.183	0.389	1.515	3.038
GUIDANCE_TONE	97,266	0.759	0.703	1.403	-2.857	0	1.508	4.494
NONGUIDANCE_TONE	146,152	0.928	0.921	0.837	-1.109	0.386	1.468	2.935
EARN	146,152	-0.00112	0.00779	0.0749	-0.252	-0.00153	0.0194	0.0962
LOSS	146,152	0.270	0	0.444	0	0	1	1
RET	145,711	0.0281	0.0234	0.216	-0.536	-0.0896	0.134	0.800
ACC	145,667	-0.0149	-0.0113	0.0414	-0.196	-0.0283	0.000954	0.124
SIZE	146,152	7.145	7.111	1.836	2.853	5.919	8.324	11.72
MTB	146,149	1.989	1.478	1.434	0.680	1.104	2.259	8.689
RETVOL	142,040	0.112	0.0941	0.0684	0.0296	0.0647	0.139	0.399
EARNVOL	145,190	0.0307	0.0141	0.0491	0.000403	0.00652	0.0335	0.340
NITEMS	146,152	316.7	310	45.39	239	279	351	422
NBSEG	123,621	1.119	1.099	0.461	0.693	0.693	1.609	2.079
NGSEG	113,768	1.231	1.099	0.509	0.693	0.693	1.609	2.639
FIRMAGE	146,152	20.16	15.18	18.14	0.414	6.844	27.36	85.22
SI	144,469	-0.00265	0	0.0104	-0.0757	-0.00128	0	0.0154
SEO	141,395	0.106	0	0.308	0	0	0	1

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	N	MEAN	P50	SD	P1	P25	P75	P99
MA	139,023	0.0924	0	0.290	0	0	0	1
DLW	146,152	0.647	1	0.478	0	0	1	1
FOG	146,152	15.58	15.59	1.770	11.25	14.48	16.68	19.75
LANALYST	127,433	2.043	2.079	0.710	0.693	1.609	2.565	3.466
IOR	115,924	0.679	0.746	0.284	0.00144	0.513	0.889	1.162
IO_G1	115,924	0.0729	0	0.260	0	0	0	1
SUE	127,343	-0.000394	0.000472	0.0145	-0.0902	-0.000845	0.00227	0.0527
CAR_CALL_MKT	115,109	0.00171	0.000897	0.0812	-0.246	-0.0386	0.0418	0.252
CAR_CALL_SZ	115,074	0.00221	0.00138	0.0807	-0.244	-0.0378	0.0420	0.251
REVERSAL_MONTH_MKT	125,600	0.00216	-0.000967	0.0931	-0.263	-0.0461	0.0450	0.340
REVERSAL_MONTH_SZ	125,562	0.00172	-0.00137	0.0914	-0.258	-0.0459	0.0443	0.333
REVISION	121,040	-0.142	-0.0160	0.636	-3.728	-0.172	0.0325	1.856
GUIDANCE	146,152	0.333	0	0.471	0	0	1	1
FORECAST	146,152	0.221	0	0.415	0	0	0	1

Variable definitions in Appendix A.

Panel B: Balance Check between Forecast and No-Forecast Group

VARIABLE	(1) NO-FORECAST	(2) FORECAST	(3) DIFFERENCE
TONE	0.911	0.926	0.015***
	(0.814)	(0.786)	(0.002)
EARN	-0.002	0.004	0.006***
	(0.078)	(0.062)	(0.000)
LOSS	0.271	0.268	-0.002
	(0.444)	(0.443)	(0.410)
RET	0.028	0.029	0.002
	(0.218)	(0.212)	(0.215)
ACC	-0.015	-0.015	-0.001*
	(0.041)	(0.043)	(0.054)
SIZE	7.098	7.312	0.213***
	(1.862)	(1.733)	(0.000)
MTB	1.979	2.027	0.048***
	(1.427)	(1.460)	(0.000)
RETVOL	0.113	0.109	-0.004***
	(0.070)	(0.063)	(0.000)
EARNVOL	0.032	0.028	-0.004***
	(0.051)	(0.040)	(0.000)
NITEMS	315.593	320.427	4.834***
	(45.120)	(46.144)	(0.000)
NBSEG	1.110	1.149	0.039***
	(0.460)	(0.466)	(0.000)
NGSEG	1.213	1.290	0.077***
	(0.509)	(0.505)	(0.000)
FIRMAGE	19.954	20.866	0.912***
	(17.799)	(19.278)	(0.000)
SI	-0.003	-0.003	-0.001***
	(0.010)	(0.011)	(0.000)
SEO	0.113	0.084	-0.029***
	(0.316)	(0.278)	(0.000)
MA	0.088	0.109	0.022***
	(0.283)	(0.312)	(0.000)
DLW	0.638	0.678	0.040***
	(0.480)	(0.467)	(0.000)
FOG	15.529	15.740	0.211***
	(1.746)	(1.842)	(0.000)
LANALYST	2.028	2.097	0.069***

	(1)	(2)	(3)
VARIABLE	NO-FORECAST	FORECAST	DIFFERENCE
	(0.719)	(0.677)	(0.000)
IOR	0.668	0.717	0.049***
	(0.289)	(0.262)	(0.000)
IO_G1	0.070	0.083	0.013***
	(0.255)	(0.276)	(0.000)
SUE	-0.001	0.000	0.001***
	(0.015)	(0.014)	(0.000)
CAR_CALL_MKT	0.002	0.002	0.001
	(0.080)	(0.086)	(0.180)
CAR_CALL_SZ	0.002	0.003	0.001
	(0.079)	(0.085)	(0.254)
REVERSAL_MONTH_MKT	0.002	0.003	0.002**
	(0.094)	(0.090)	(0.013)
REVERSAL_MONTH_SZ	0.001	0.003	0.002**
	(0.092)	(0.089)	(0.011)
REVISION	-0.134	-0.168	-0.034***
	(0.632)	(0.650)	(0.000)
GUIDANCE	0.292	0.476	0.184***
	(0.455)	(0.499)	(0.000)
OBSERVATIONS	113,910	32,242	146,152

Variable definitions in Appendix A; Standard errors in parentheses.

Panel C: Distribution of Observations by Year

YEAR	NO FORECAST	FORECAST	TOTAL	% OF CALLS WITH FORECAST
2000	2	0	2	0%
2001	177	83	260	47%
2002	2,778	973	3,751	35%
2003	3,961	1,272	5,233	32%
2004	4,201	1,605	5,806	38%
2005	4,697	1,539	6,236	33%
2006	5,082	1,498	6,580	29%
2007	5,472	1,695	7,167	31%
2008	5,986	1,822	7,808	30%
2009	6,240	1,670	7,910	27%
2010	6,651	1,742	8,393	26%
2011	7,034	1,850	8,884	26%
2012	6,919	1,869	8,788	27%
2013	6,817	1,878	8,695	28%
2014	7,815	2,114	9,929	27%
2015	8,244	2,189	10,433	27%
2016	8,094	2,224	10,318	27%
2017	8,154	2,289	10,443	28%
2018	8,954	2,367	11,321	26%
2019	6,632	1,563	8,195	24%
TOTAL	113,910	32,242	146,152	28%

Panel D: Correlation Matrix of Selected Variables

VARIABLES	TONE	FORECAST_TONE	NONFORECAST_TONE	FL_TONE	NFL_TONE	EARN	EARN1	LOSS	RET	SIZE	MTB	RETVOL	EARNVOL
TONE	1.00												
FORECAST_TONE	0.19***	1.00											
NONFORECAST_TONE	1.00***	0.14***	1.00										
FL_TONE	0.58***	0.26***	0.58***	1.00									
NFL_TONE	0.97***	0.14***	0.97***	0.39***	1.00								
EARN	0.09***	0.17***	0.09***	0.02***	0.10***	1.00							
EARN1	0.08***	0.17***	0.08***	0.01***	0.09***	0.46***	1.00						
LOSS	-0.14***	-0.27***	-0.14***	-0.01***	-0.16***	-0.47***	-0.36***	1.00					
RET	0.11***	0.04***	0.10***	0.02***	0.11***	0.07***	0.10***	-0.08***	1.00				
SIZE	0.18***	0.14***	0.18***	0.04***	0.20***	0.24***	0.26***	-0.37***	0.10***	1.00			
MTB	0.11***	-0.06***	0.12***	0.02***	0.13***	-0.10***	-0.07***	0.07***	0.16***	0.13***	1.00		
RETVOL	-0.11***	-0.14***	-0.11***	-0.02***	-0.12***	-0.28***	-0.27***	0.40***	0.07***	-0.47***	0.08***	1.00	
EARNVOL	-0.05***	-0.12***	-0.04***	-0.01**	-0.05***	-0.31***	-0.32***	0.34***	-0.02***	-0.32***	0.25***	0.39***	1.00

*** p<0.01, ** p<0.05, * p<0.1. Variable definitions in Appendix A

Table 2 Informativeness of Forecast Tone

Panel A: Forecasting ROA for the next four quarters (EARN1-4) (Tone measures in proportions)

	(1)	(2)	(3)	(4)
VARIABLES	EARN1	EARN2	EARN3	EARN4
FORECAST_TONE	0.124***	0.096***	0.065***	0.067***
	(0.023)	(0.019)	(0.021)	(0.021)
NONFORECAST_TONE	-0.068	-0.027	-0.076	0.009
	(0.082)	(0.076)	(0.077)	(0.083)
EARN	0.198***	0.154***	0.135***	0.117***
	(0.048)	(0.039)	(0.039)	(0.034)
LOSS	-0.022***	-0.021***	-0.022***	-0.021***
	(0.002)	(0.002)	(0.002)	(0.002)
OBSERVATIONS	14,584	14,554	14,509	14,433
R-SQUARED	0.184	0.162	0.182	0.172
2-SIC FE	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES
CONTROLS	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1 Standard errors in parentheses, clustered at firm level. Other controls: RET, ACC, SIZE, MTB, FIRMAGE, RETVOL, EARNVOL, NBSEG, NGSEG, NITEMS, SI, SEO, MA, DLW, FOG, SUE, LANALYST, Q2, Q3, Q4, FORECAST, FORECAST_PCT, FLS_PCT, GUIDANCE, IOR, definition detailed in Appendix A. Sample: quarterly earnings call presentations with at least one forecast FLS.

Panel B: Forecasting ROA for next quarter (EARN1) with different specifications (Tone measures in proportions)

	Dep. Var.: ROA for next quarter (EARN1)						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FORECAST_TONE	0.124***	0.122***					
	(0.023)	(0.023)					
NONFORECAST_TONE	-0.068		-0.022				
	(0.082)		(0.084)				
TONE				0.007	0.072*	0.378*	0.050
				(0.085)	(0.040)	(0.193)	(0.039)
EARN	0.198***	0.198***	0.201***	0.201***	0.369***	0.435***	0.335***
	(0.048)	(0.048)	(0.048)	(0.048)	(0.040)	(0.073)	(0.035)
LOSS	-0.022***	-0.022***	-0.024***	-0.024***	-0.016***	-0.006	-0.018***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)	(0.002)
OBSERVATIONS	14,584	14,584	14,584	14,584	48,955	4,776	63,539
R-SQUARED	0.184	0.184	0.181	0.181	0.336	0.523	0.300
2-SIC FE	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES
CONTROLS	YES	YES	YES	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1 Robust SE in parentheses, clustered at firm level. Other controls: RET, ACC, SIZE, MTB, FIRMAGE, RETVOL, EARNVOL, NBSEG, NGSEG, NITEMS, SI, SEO, MA, DLW, FOG, SUE, LANALYST, Q2, Q3, Q4, FORECAST, FORECAST_PCT, FLS_PCT, GUIDANCE, IOR, definition detailed in Appendix A. Sample in Col (1) to Col (4): firm-quarters with at least one forecast FLS; Col (5): firm-quarters without forecast FLS; Col (6): firm-quarters from firms that never provide forecast FLS; Col (7): the whole sample.

Table 3 Market Response to Forecast Tone

Panel A: 3-day Cumulative Event Window Market-adjusted Return (CAR_CALL) (Tone measures in proportions)

	Dep. Var.: 3-day Cumulative Event Window Market-adjusted Return (CAR_CALL)						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FORECAST_TONE	0.035	0.070**					
	(0.029)	(0.029)					
NONFORECAST_TONE	1.467***		1.480***				
	(0.117)		(0.117)				
TONE				1.499***	1.255***	0.934***	1.294***
				(0.119)	(0.062)	(0.246)	(0.056)
EARN	0.037	0.033	0.038	0.037	0.080***	0.022	0.068***
	(0.024)	(0.023)	(0.024)	(0.024)	(0.014)	(0.030)	(0.013)
LOSS	-0.015***	-0.017***	-0.015***	-0.015***	-0.016***	-0.016***	-0.016***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.005)	(0.001)
OBSERVATIONS							
R-SQUARED	12,659	12,659	12,659	12,659	42,726	3,837	55,385
2-SIC FE	0.070	0.057	0.070	0.070	0.074	0.069	0.071
YEAR FE	YES	YES	YES	YES	YES	YES	YES
CONTROLS	YES	YES	YES	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1 Robust standard errors in parentheses, clustered at firm level. Other controls: RET, ACC, SIZE, MTB, FIRMAGE, RETVOL, EARNVOL, NBSEG, NGSEG, NITEMS, SI, SEO, MA, DLW, FOG, SUE, LANALYST, Q2, Q3, Q4, FORECAST, FORECAST_PCT, FLS_PCT, GUIDANCE, IOR. The definition is detailed in Appendix A. Sample in Col (1) to Col (4): firm-quarters with at least one forecast FLS; Col (5): firm-quarters without forecast FLS; Col (6): firm-quarters from firms that never provide forecast FLS; Col (7): the whole sample.

Panel B: Cumulative Market-adjusted Returns in 1 Month (REVERSAL_MONTH) (Tone measures in proportions)

	Dep. Var.: Cumulative Market-adjusted Returns in 1 Month (REVERSAL_MONTH)						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FORECAST_TONE	-0.023	-0.016					
	(0.031)	(0.031)					
NONFORECAST_TONE	0.264**		0.255**				
	(0.114)		(0.113)				
TONE				0.250**	0.101*	-0.213	0.140**
				(0.114)	(0.061)	(0.311)	(0.055)
EARN	0.099***	0.098***	0.098***	0.098***	0.069***	0.060	0.075***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.015)	(0.042)	(0.012)
LOSS	-0.005*	-0.005*	-0.004*	-0.004*	-0.003**	-0.005	-0.003***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.006)	(0.001)
OBSERVATIONS	13,954	13,954	13,954	13,954	46,663	4,400	60,617
R-SQUARED	0.027	0.026	0.027	0.027	0.022	0.045	0.021
2-SIC FE	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES
CONTROLS	YES	YES	YES	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1 Robust standard errors in parentheses, clustered at firm level. Other controls: RET, ACC, SIZE, MTB, FIRMAGE, RETVOL, EARNVOL, NBSEG, NGSEG, NITEMS, SI, SEO, MA, DLW, FOG, SUE, LANALYST, Q2, Q3, Q4, FORECAST, FORECAST_PCT, FLS_PCT, GUIDANCE, IOR, definition in Appendix A. Sample in Col (1) to Col (4): firm-quarters with at least one forecast FLS; Col (5): firm-quarters without forecast FLS; Col (6): firm-quarters from firms that never provide forecast FLS; Col (7): the whole sample.

Panel C: Analyst Revision (REVISION) (Tone measures in proportions)

	Dep. Var.: Analyst Revision (REVISION)						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FORECAST_TONE	1.521***	1.703***					
	(0.265)	(0.266)					
NONFORECAST_TONE	7.515***		8.082***				
	(0.905)		(0.914)				
TONE				8.445***	5.417***	2.481	5.967***
				(0.928)	(0.478)	(2.026)	(0.452)
EARN	-0.179	-0.201	-0.135	-0.139	-0.609***	-0.673***	-0.501***
	(0.132)	(0.136)	(0.130)	(0.130)	(0.117)	(0.230)	(0.095)
LOSS	-0.105***	-0.113***	-0.126***	-0.123***	-0.138***	-0.107***	-0.137***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.012)	(0.039)	(0.011)
OBSERVATIONS	13,990	13,990	13,990	13,990	46,765	4,552	60,755
R-SQUARED	0.173	0.167	0.169	0.170	0.167	0.154	0.164
2-SIC FE	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES
CONTROLS	YES	YES	YES	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1 Robust standard errors in parentheses, clustered at firm level. Other controls: RET, ACC, SIZE, MTB, FIRMAGE, RETVOL, EARNVOL, NBSEG, NGSEG, NITEMS, SI, SEO, MA, DLW, FOG, SUE, LANALYST, Q2, Q3, Q4, FORECAST, FORECAST_PCT, FLS_PCT, GUIDANCE, IOR. The definition is detailed in Appendix A. Sample in Col (1) to Col (4): firm-quarters with at least one forecast FLS; Col (5): firm-quarters without forecast FLS; Col (6): firm-quarters from firms that never provide forecast FLS; Col (7): the whole sample.

Table 4 Seemingly Uncorrelated Bivariate Probit Regression on Earnings Guidance and Providing Forecast in Conference Call Presentations

	(1)	(2)
VARIABLES	GUIDANCEQ	FORECAST
EARN	0.916***	0.775***
	(0.255)	(0.200)
LOSS	-0.168***	0.187***
	(0.039)	(0.030)
RET	0.094***	0.018
	(0.031)	(0.029)
RETVOL	-1.713***	-0.440**
	(0.314)	(0.202)
EARNVOL	-2.105***	0.156
	(0.555)	(0.289)
OBSERVATIONS	63,599	63,599
2-SIC FE	YES	YES
YEAR FE	YES	YES
CONTROLS	YES	YES

*** p<0.01, ** p<0.05, * p<0.1 Robust standard errors in parentheses, clustered at firm level.

Other controls include ACC, SIZE, MTB, FIRMAGE, NBSEG, NGSEG, NITEMS, SI, SEO, MA, DLW, FOG, SUE, LANALYST, IOR, Q2, Q3, Q4. The definition is detailed in Appendix A.

Table 5 It is Forecast Tone not Tone in Forward-looking Statements (or Tone in General Forecast Statements) that Matters

Panel A: It is Forecast Tone not Tone in Forward-looking Statements that Are Informative

	FUTURE EARNINGS			
VARIABLES	EARN1	EARN2	EARN3	EARN4
FORECAST_TONE	0.125***	0.096***	0.070***	0.064***
	(0.023)	(0.019)	(0.021)	(0.021)
FL_TONE	-0.021	-0.015	-0.081	0.055
	(0.054)	(0.055)	(0.060)	(0.058)
NFL_TONE	-0.035	-0.012	-0.015	-0.028
	(0.077)	(0.075)	(0.073)	(0.078)
OBSERVATIONS	14,584	14,554	14,509	14,433
R-SQUARED	0.184	0.162	0.182	0.172
2-SIC FE	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES
CONTROLS	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1 Robust standard errors in parentheses, clustered at firm level.

Other controls include EARN, LOSS, RET, ACC, SIZE, MTB, FIRMAGE, RETVOL, EARNVOL, NBSEG, NGSEG, NITEMS, SI, SEO, MA, DLW, FOG, SUE, LANALYST, Q2, Q3, Q4, FORECAST, FORECAST_PCT, FLS_PCT, GUIDANCE, IOR. The Definition is detailed in Appendix A. The sample comprises quarterly earnings conference call presentations with at least one forecast FLS.

Panel B: It is Forecast Tone not Tone in General Forecast Statements that Matters

	FUTURE EARNINGS			
VARIABLES	EARN1	EARN2	EARN3	EARN4
FORECAST_TONE	0.121***	0.101***	0.067***	0.059***
	(0.022)	(0.019)	(0.021)	(0.021)
GF_TONE	0.015	-0.043	-0.017	0.055
	(0.045)	(0.037)	(0.049)	(0.043)
NONGF_TONE	-0.062	0.007	-0.054	-0.024
	(0.073)	(0.072)	(0.071)	(0.080)
OBSERVATIONS	14,584	14,554	14,509	14,433
R-SQUARED	0.184	0.162	0.182	0.172
2-SIC FE	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES
CONTROLS	YES	YES	YES	YES

*** p<0.01, ** p<0.05, * p<0.1 Robust standard errors in parentheses, clustered at firm level.

Other controls include EARN, LOSS, RET, ACC, SIZE, MTB, FIRMAGE, RETVOL, EARNVOL, NBSEG, NGSEG, NITEMS, SI, SEO, MA, DLW, FOG, SUE, LANALYST, Q2, Q3, Q4, FORECAST, FORECAST_PCT, FLS_PCT, GUIDANCE, IOR. The Definition is detailed in Appendix A. The sample comprises quarterly earnings conference call presentations with at least one forecast FLS.

Chapter 3: Forward-looking Disclosure with and Without Time Frames in Earnings Conference Calls: Determinants, Market Responses, and Implications

Abstract

This essay explores the informativeness in forward-looking disclosures with and without time frames when the forecast is realized. After using a keyword search to classify the forward-looking statements (FLSs) in the managers' speech in the quarterly earnings conference calls of U.S. firms into two categories – with and without specific time frames, tests on the determinants, market responses, and implications on the firm's future performance of the different types of forward-looking disclosure are conducted to explore their informativeness. First, uncertainty is only positively associated with forward-looking disclosure without time frames, probably because it is more difficult for managers to specify time frames in uncertainty or their unwillingness to be held accountable. Moreover, the positive effect is stronger with firms of larger size and higher institutional ownership. Second, investors respond to FLSs – – more quickly to those with time frames and later to those without time frames in terms of absolute stock returns and share turnover; analysts use FLSs – both those with and without time frames – to improve earnings forecasts; FLSs without time frames lead to more disagreement among analysts on earnings forecasts, and FLSs with time frames decrease disagreement. These patterns suggest that information in the FLSs without time frames may be more difficult for the market to digest. Third, the absolute change in future earnings and discretional accruals are larger with more FLSs without time frames in the managers' speech, and the capital investment in the next quarter only increases with more FLSs with time frames, suggesting that more FLSs with (without) time frame verifiability may reveal a more (less) foreseeable future path for the firm. Collectively, this essay adds to the understanding of general forward-looking disclosure and its time frame verifiability property.

Keywords: disclosure, earnings conference calls, forward-looking statements, time frame

3.1. Introduction

Corporate forward-looking disclosure is of critical importance for the capital market (Bozanic et al., 2018). Since the implementation of Regulation Fair Disclosure (Reg FD) (Bushee et al., 2004; Gow et al., 2021), corporate earnings conference calls have become an important disclosure channel, and they facilitate the communication of managers' forward-looking opinions to the market due to their flexibility in format and interactive nature. However, the usefulness of the voluntary and non-audited forward-looking disclosure is a major concern (e.g., Hutton et al., 2003; Hutton & Stocken, 2021; Rogers & Stocken, 2005). The quantity of disclosure does not itself guarantee informativeness and sometimes can even dilute the information density of forward-looking disclosures (Krause et al., 2017).

Admittedly, it can be challenging to measure the quality of disclosures. Prior studies have used disclosure indices. Some indices are essentially unweighted or weighted scores telling whether specific disclosure items are included (e.g., Krause et al., 2017; Petersen & Plenborg, 2006). Moreover, these indices are better viewed as measuring the scope of the disclosure rather than the quality. Besides, with narrative disclosure becoming more important, it is harder to use quantity to proxy for quality (Beretta & Bozzolan, 2008). Other indices like the AIMR disclosure evaluation (e.g., Drake et al., 2009; Heflin et al., 2016) are based on analysts' opinions and are often criticized for their subjectivity in evaluation (Beretta & Bozzolan, 2008). Some studies infer disclosure quality indirectly from factors such as litigation risk and proprietary costs (e.g., Gigler, 1994; Ng et al., 2013; I. Y. Wang, 2007). However, these factors are proxies for disclosure incentives and may not be fully reflected in disclosure behaviors. Besides the problems in measuring disclosure quality, the measurement can be even more difficult for

the forward-looking disclosure because the vagueness in regulation usually allows a significant variation in forward-looking disclosure (Krause et al., 2017).

This essay adopts a different and complementary approach based on properties of the forward-looking disclosure – whether the forward-looking statements (FLSs) specify time frames for the realization of the forecast. This alternative approach follows the reasoning that time frames specified – an important information dimension of forward-looking disclosures besides the projected level (of income, revenue, etc.), which has already been a focus of existing research – facilitate the comparison of the forecast with its realization and the increased verifiability is important for credibility (e.g., Rosenthal, 1971). For example, some forward-looking statements – "we will continue to manage the company to strike a balance between capital investment, operational and financial discipline, and cost impact to customers" – can be general in time frames, making it hard for the information receivers to figure out when the vision is likely to materialize. In contrast, others are more specific in time frames – "a balance of approximately $32 million will be amortized in 2016, and the amortization for this year [2015] is expected to be $18 million"[15], making it easier for the information receivers to figure out when the vision materializes. Admittedly, some forecasts, by definition, implicitly include time frames, such as earnings for the next quarter or this fiscal year. However, this essay focuses on whether managers mentioning the time frame explicitly makes a difference.

Because this approach is based on managers' speeches, it is not as subjective as the quality measure based on analysts' opinions and captures disclosure behaviors directly. This approach also has two

[15] Both examples come from the conference held by Alliant Energy Corporation for its 2015 third quarter's earnings; more examples are included in the appendix.

additional benefits. First, while different industries differ in the content of forward-looking disclosures, time frame property is readily applicable across industries. Second, while prior research examines forecast numbers in formal earnings guidance and press releases (e.g., Call et al., 2014; Chen et al., 2011; García Osma et al., 2023) or is focused on the financial forecast (e.g., Bozzolan et al., 2009), time frame property can be readily applied to more general forward-looking disclosures. Research on it can also be helpful to the market (Bozanic et al., 2018).

In this essay, I identify forward-looking statements (FLSs) with and without time frames with a keyword search of the quarterly earnings conference calls' scripts and measure their respective proportions in the managers' speech for each call. Then, to test the informativeness of the time frame property, I explore the relationship between the time frame property of forward-looking disclosures and uncertainty, its market responses, and its implications for the firm's future performance.

Three findings emerge. First, uncertainty is positively associated with providing forward-looking disclosure without time frames after controlling for firm characteristics, year-fixed effect, and industry-fixed effects. It is probably because it is more difficult for managers to specify time frames in uncertainty, or managers do not want to be held accountable if forecasts are not realized, which is more likely in uncertain situations. The positive effect is stronger with firms of larger sizes and higher institutional ownership, which attract more attention from the market. Second, investors respond to FLSs – more quickly to those with time frames and later to those without time frames in terms of absolute stock returns and share turnover; analysts use FLSs – both those with and without time frames – to improve earnings forecasts while FLSs without time frames leads to more disagreement among

analysts on earnings forecast, FLSs with time frames decreases disagreement. These findings suggest that information in the FLSs without time frames may be more difficult for the market to digest. Third, the absolute change in future earnings and discretional accruals are larger with more FLSs without time frames in the managers' speech, and the capital investment in the next quarter only increases with more FLSs with time frames, suggesting that more FLSs with higher (lower) time frame verifiability may reveal a more (less) foreseeable future path for the firm.

Overall, this essay suggests that whether managers mention time frames of forward-looking disclosures contains information. While forward-looking disclosures with time frames can be easier for the market to digest, they are provided less in uncertainty. In contrast, forward-looking disclosures without time frames are more likely to be provided in uncertainty. However, they are harder for the market to digest and may reveal a less foreseeable future for the firms.

3.2. Hypothesis Development

3.2.1 The Effect of Uncertainty on the Provision of FLSs with and Without Specific Time Frames

While voluntary corporate disclosure can have other determinants, I focus on uncertainty for its significant influences on the information needs of the capital market. Previous research has documented that managers' forward-looking disclosure can be more useful under higher uncertainty. For example, Hutton, Lee, and Shu (2012) find that managers are more accurate than analysts when the management's actions are opaque to outsiders; Maslar, Serfling, and Shaikh (2021) find that there

are “larger stock price reactions and analyst forecast revisions to news in management forecasts during downturns” and that “management forecast accuracy increases during downturns”, suggesting that under increased uncertainty, managers are better positioned to predict the firm’s future because of their access to inside information and readiness of taking strategic actions. To the extent that uncertainty increases the market’s need for information about the future, the informational value of the forward-looking disclosure increases.

On the supply side of information, uncertainty positively and negatively affects voluntary forecasting disclosure. On the one hand, with higher uncertainty, managers may be more willing to provide forecasting information to adjust investors’ inaccurate expectations (Ajinkya & Gift, 1984) or reduce information asymmetry in the stock market (Coller & Yohn, 1997). On the other hand, uncertainty can decrease the provision of forecasting disclosure because it adds to the difficulty for managers to forecast (Chen et al., 2011; Waymire, 1985), and/or managers are more likely to be held accountable in litigation for inaccurate disclosure ex-post (Rogers & Van Buskirk, 2009) despite protections offered by the safe harbor provisions in the 1995 Private Securities Litigation Reform Act.

Prior research has documented that managers provide more forward-looking information in press releases and MD&A sessions of the financial reports when the firm experiences poor performance (Matsumoto et al., 2011), has more volatile earnings, or its stock options imply higher volatility (Bozanic et al., 2018). Earnings conference calls also provide a flexible form for forward-looking disclosures besides or in place of formal earnings guidance under uncertainty. Further, it is more

difficult for managers to specify time frames with higher uncertainty, and more specific FLSs are also more likely to hold them responsible for errors ex-post. Therefore, I expect that:

H1a: Uncertainty has a stronger positive effect on the provision of forward-looking statements without specific time frames in earnings calls than forward-looking statements with specific time frames.

Besides, I also expect that the positive effect of uncertainty on the provision of forward-looking statements without time frames in the earnings calls should be stronger when there is a higher demand for disclosure and/or higher incentives for the managers to provide information. For example, prior studies suggest that larger firms benefit more from disclosure (e.g., Embong et al., 2012), and institutional investors may prefer lower information asymmetry (Boone & White, 2015)In turn, I expect that the positive effect of uncertainty on the provision of forward-looking disclosure without specific time frames is stronger with larger firms and firms with higher institutional ownership.

H1b: The positive effect of uncertainty on the provision of forward-looking statements without specific time frames in earnings calls is stronger with firms of larger size and firms with higher institutional ownership.

Admittedly, the relationship between uncertainty and the provision of forward-looking statements in earnings calls may not exist because managers may turn to other disclosure channels. Therefore, the hypothesis remains to be tested empirically.

3.2.2 Market Reactions to FLSs with and Without Specific Time Frames in Earnings Calls

The second angle to see the informativeness of the forward-looking disclosures with and without time frames is from market reactions. Empirical research has documented that general FLSs generate detectable reactions in stock prices and analysts' forecasts. For example, Li (2010) finds that the tone of FLSs in the 10-K and 10-Q filings' MD&A part helps to mitigate the accrual anomaly in the firm's stock price. Bozanic et al. (2018) find that general FLSs in earnings announcements not explicitly related to earnings and not quantitative can still lead to measurable market reactions. Besides theories like the Bayesian learning model, which suggest that rational investors value information signals of higher quality (e.g., Hautsch & Hess, 2007), empirical evidence also supports that signals of higher quality generate quicker and sharper reactions (e.g., Bozzolan et al., 2009). Since forward-looking disclosure with time frames specified may be more verifiable ex-post and thus valued by market participants, I expect that:

H2: Providing forward-looking statements with time frames is associated with more significant stock price reactions and more considerable analyst forecast improvements than those without time frames.

3.2.3 Implications of FLSs with and Without Time Frames on the Firm's Future Performance

Prior studies have shown that features in corporate disclosure can reveal firms' fundamentals. For example, Brochet et al. (2015) find that language emphasized during conference calls can reflect

managerial myopia, and firms that discuss more short-term issues tend to be those with higher capital market pressure and higher short-term executive incentives. Andreou et al. (2020) find that textual analysis of 10-K filings can help to identify market-oriented firms.

For this essay, additional exploratory analysis to see the informativeness of forward-looking disclosure is also by examining the implications (not necessarily a causal effect) of FLSs with and without specific time frames on the firm's future performance – here, I look at the profitability[16] for shorter-term performance and capital investments for longer-term growth.

When the firm's future performance is less foreseeable, it can be more difficult for managers to specify time frames in the forward-looking disclosure. Therefore, with more FLSs without time frames, future profitability will likely experience a sharper change, managers may use more discretionary accruals to affect the reported profitability, and capital investment may also be lower with firms adopting defensive strategies in uncertainty.

H3: The provision of FLSs without time frames is associated with a more significant change in the firm's profitability, more accrual-based earnings management, and lower investment in future quarters than the provision of FLSs with time frames.

[16] Additionally, I look at discretionary accruals in the future, which impacts on the reported profitability.

3.3. Sample Selection and Measurement

3.3.1 Sample

The sample covers 101,458 quarterly earnings conference calls of publicly traded companies in the U.S. from 2002 to 2019. To be included in the sample, I also require the call transcripts to be available in the StreetEvents database, the financial data to be available from Compustat, stock prices to be available from CSRP, and analyst forecasting and management guidance to be available from IBES. The number of observations used in each regression varies depending on the specification. Table 1 presents the yearly distribution of quarterly earnings conference calls.

3.3.2 Identification and Classification of FLSs with and Without Time Frames

First, I extract text from managers' presentations and their answers in the QA session of the quarterly earnings conference call and use a keyword search to identify the forward-looking statements in managers' speeches. It can be challenging to use a single algorithm to catch forward-looking disclosure of different industries (Bozanic et al., 2018). In this essay, I used the method in prior research with documented validity. Specifically, following Muslu et al. (2015), a sentence is identified as FLS if it contains: (1) keywords that refer to the future (e.g., "next year"), (2) verb conjugations that refer to the future (e.g., "plan to"), (3) or references to a future year compared to the year that the conference call took place. The list of keywords is the same as detailed in their appendix except for adding "'ll" to accommodate the different context (conference call versus SEC filings).

Second, among all the FLSs, I identify a sentence as an FLS with time frames if it contains any keyword related to time frames (Appendix C) or references to a future year compared to the year that the conference call took place. The time frame keyword list is in Appendix C and adapted from Brochet et al. (2015) to suit the aim of this essay. For example, "look ahead", "looking ahead" and "outlook" are excluded as they may not necessarily refer to time frames. Besides, references to a future year compared to the conference call year are added to the original keyword list. The keyword list in Brochet et al. (2015) is chosen as a starting point for the list of time horizon terms. In their essay, the authors "create a proxy for the time horizon that senior executives emphasize in their communications" and find that their "measure of disclosure time horizon is associated with capital market pressures and executives' short-term monetary incentives". Unlike their research, my research does not distinguish between short-term and long-term, and I combine their word lists for short and long time horizons. Besides words in the combined word list, the reference to a future year is also a time frame keyword and, therefore, added to the list. The other changes to the original word list are made to attain a satisfactory classification accuracy with a random sample of conference call transcripts where I manually identify time frame phrases (this validation step is detailed in Appendix D to the essay with supporting materials on Github). With the refined keyword list, I classify FLSs into two categories – those with and without time frames. Appendix E also includes examples of forward-looking statements with and without time frames in earnings calls.

Finally, the time frame trait of the forward-looking disclosure is measured as the number of FLSs for each type divided by the total number of sentences in the managers' speech (***FLS_qt*** and ***FLS_nqt***).

Besides, I also divide the number of forward-looking statements by the total number of sentences in the managers' speech to measure the provision of forward-looking disclosures (***FLS***).

3.3.3 An Initial Look at the FLS Measures

Table 2 Panel A displaces the mean values of FLS measures by year. About 65% of all FLSs are without a specific time frame, and this proportion has been relatively stable over time. Panel B shows that these three FLS measures for earnings calls all follow a positively skewed unimodal distribution, with a mean value of 0.160, 0.104, and 0.056, respectively, for the proportion of forward-looking statements (***FLS***), FLSs without specific time frames (***FLS_nqt***) and FLSs with time frames (***FLS_qt***). Panel C displays the density distribution of the first-order autocorrelation coefficient for the three FLS measures, and the mean values of autocorrelation coefficients for ***FLS***, ***FLS_nqt***, and FLS_qt are 0.139, 0.108, and 0.115, respectively, suggesting a moderate level of time persistence.

Table 3 Panel B shows that the proportion of FLSs (***FLS***), FLSs with specific time frames (***FLS_qt***), and FLSs without specific time frames (***FLS_nqt***) are significantly and positively correlated. In terms of magnitude, the correlation coefficient between the proportion of FLSs with time frames (***FLS_qt***) and the proportion of FLSs without time frames (***FLS_nqt***) is around 0.25. This echoes the different properties of the two kinds of forward-looking disclosure and mitigates the concern of multicollinearity in regression analyses.

3.3.4 Proxies for Uncertainty, Market Responses, and Firms' Future Performance

Following prior research (Bozanic et al., 2018), four proxies of uncertainty (financial outcomes in lack of informativeness or the difficulties in predicting the firm's future performance) are used to examine the effect of uncertainty on firms' forward-looking disclosure in earnings calls. They are ***loss*** – if the firm's current earnings are negative, earnings volatility ***(earnvol)*** – the standard deviation of the firm's earnings before extraordinary items deflated by lagged assets over the last 12 quarters, analysts' expectation gap (***expect_gap***) – the absolute value of the gap between analyst forecasts for the next quarter's earnings and the actual earnings, deflated by stock price, and ***analyst dispersion*** – the standard deviation of analyst forecasts of the current quarter's earnings.

For market responses to forward-looking disclosures, investors' response is represented by the absolute value of cumulative stock returns in the three days around the earnings call (***abs_window_ret***) and in the two weeks following the earnings call (***abs_lead_ret***), and the change of average daily share turnover during the three days around the earnings call (***window_vol***) and in the two weeks following (***lead_dvol***) compared to the average daily share turnover in the two weeks before the earnings call. Analysts' response is reflected in the improvement of earnings forecast accuracy for the next quarter's earnings (***fe_change***) and the change in analysts' EPS estimate disagreement after the call (***analyst_dispersion_change***).

I construct the following measures to reflect the firms' future performance – profitability and capital investments. Unexpected future earnings for the next four quarters are measured as the absolute value of change in the scaled earnings yearly to account for earnings' seasonal volatility (***d_earn1-4***).

Accrual-based earnings management activities are measured by the absolute value of discretionary accruals in the next quarter (***em***), and I use five alternative methods for discretionary accruals used in prior accrual research to enhance robustness. Specifically, Healy (1985) uses the mean accruals over time as non-discretionary accruals; Dechow, Sloan, and Sweeney (1995) do not assume non-discretionary accruals to be constant over time but that "variation in the determinants of non-discretionary accruals are common across firms in the same industry" and thus non-discretionary accruals are a firm-specific function of the median value of accruals in the industry; DeAngelo (1986) uses last period's accruals as non-discretionary accruals; Jones (1991) assumes that non-discretionary accruals as a firm-specific linear function of one over total assets, scaled PPE, and scaled change in revenue, in an attempt to "control for the effect of changing economic circumstances on accounting accruals"; and Dechow et al. (1995) relax the implicit assumption in the Jones Model (1991) that revenue is nondiscretionary and modify the model by replacing the scaled changes in revenue with the scaled changes in revenue minus receivables. Finally, future capital investment is calculated as the quarterly capital expenditure scaled by the beginning balance of net property, plant, and equipment (PPE) for the next quarter (***capexq1***).

3.3.5 Controls

When testing the effect of uncertainty on the forward-looking disclosure in earnings calls, the market responses to the disclosure, and predictive implications on the firm's future performance of the

forward-looking disclosure, I control for different sets of factors that have been used in prior research (e.g., Bozanic et al., 2018; Call et al., 2014).

The definitions of the controls are in Appendix A, and the specification of controls used in different tests is detailed in the following empirical section. Table 3 Panel A displays a statistical summary of the variables, and Panel B shows pairwise correlations of selected variables. All the consecutive variables except the linguistic measures of the earnings call transcripts are winsorized at the top and bottom one percent, and quarterly earnings scaled by lagged assets are winsorized at -3 and 3[17].

3.4. Empirical Tests and Results

4.1 Uncertainty and Forward-looking Disclosure in Earnings Calls

First, following Bozanic et al. (2018), I examine the effect of uncertainty on forward-looking disclosure in earnings calls. The following regression design is adopted:

$$\text{FLS measures / Guidance} = \beta_0 + \beta_1 * \text{size} + \beta_2 * \text{btm} + \beta_3 * \text{ret\_lag} + \beta_4 * \text{lanalyst} + \beta_5 * \text{FLS measure in last call} + \alpha * \text{Unvertainty} + \text{industry FE} + \text{year FE} + \eta \quad (1)$$

[17] Winsorizing the variables does not change results qualitatively.

Here, FLS measures (namely, the proportion of FLSs, FLSs with and without time frames) are regressed on the uncertainty proxies, with firm characteristics, their values in the previous earnings call, and industry (2-digit sic) and year fixed effects controlled for. Standard errors are clustered at the firm level to control for the autocorrelation from firm heterogeneity. To facilitate analyses, the proportion of FLSs in the managers' speech is multiplied by 100 to be a percentage.

Table 4 displays the results. First, between Panels A and B, I compare how the proportions of FLSs with and without specific time frames correlate with uncertainty. Comparing results in Panel A and Panel B, we can see that the proportion of FLSs without time frames is more significantly and strongly associated with uncertainty than FLSs with time frames. Combined, as shown in Panel C, the proportion of FLSs in managers' speech is positively correlated with uncertainty proxies. In Panel D, in contrast, the probability of issuing earnings guidance is negatively correlated with those uncertainty proxies.

These results suggest that managers refrain from issuing earnings guidance with higher uncertainty. Instead of formal guidance, they provide less formal forward-looking disclosure in earnings conference calls to satisfy the market's increased information needs. They also tend to provide more forward-looking statements with less specificity in time frames, confirming H1a.

Additionally, to account for the fact that the decisions to disclose forward-looking information in the earnings call and issue earnings guidance are likely to be made simultaneously, following Bozanic et al. (2018), I use a seemingly unrelated regression to estimate the relationship between uncertainty proxies and the proportion of FLSs in earnings calls, as well as the relationship between uncertainty

proxies and the decision to issue earnings guidance together. All disclosure measures being compared are standardized to allow comparison between coefficients. Table 4 Panel E only displays the coefficient estimates of uncertainty proxies. Again, these results agree with what we see in single regressions and suggest that uncertainty decreases earnings guidance issuance but promotes forward-looking disclosure in earnings calls, especially FLSs without precious reference to time frames.

Furthermore, Table 4, Panel F and G display the results from subsample regression analysis, where I divide observations into those with larger and smaller firm sizes (or subsamples with higher and lower institutional ownership). A comparison between the coefficients (in absolute value) between subsamples confirms H1b that the positive effect of uncertainty on the provision of forward-looking statements without specific time frames in earnings calls is stronger with firms of a larger size and firms with higher institutional ownership.

4.2 Market Responses to Disclosure

Second, I examine the market reactions to forward-looking disclosure in earnings calls. The following regression design is adopted:

$$\begin{aligned}\text{Market response proxies} &= \beta_0 + \alpha * \text{FLS measures} + \beta_1 * \text{sue\_pos} + \beta_2 * \text{sue\_neg} + \beta_3 * \text{earnvol} + \beta_4 \\ &* \text{loss} + \beta_5 * \text{btm} + \beta_6 * \text{size} + \beta_7 * \text{retvol} + \beta_8 * \text{guidance dummy} + \beta_9 * \text{lsent} \\ &+ \text{industry FE} + \text{year FE} + \eta \qquad (2)\end{aligned}$$

Here, investors and analysts' responses[18] are regressed against the forward-looking disclosures (namely, the proportion of FLSs, the proportion of FLSs with time frames, and the proportion of FLSs without time frames in managers' speech), with firm characteristics, earnings surprises, whether the firm issued earnings guidance, the length of managers' speech, and industry (2-digit sic) and year fixed effects controlled for. Again, standard errors are clustered at the firm level.

Table 5 displays the results. In panel A, the absolute value of stock returns over the 3-day event window is positively associated with the proportion of forward-looking statements in the managers' speech, especially with the proportion of FLSs with time frames, but not significantly related to the proportion of FLSs without time frames. In Panel B, we can see that while the market continues to respond to the forward-looking disclosure with time frames in the following two weeks, it also responds to the forward-looking disclosure without time frames.

I also examine the trading activities. In Panel C, the changes in the daily share turnover during the 3-day event window increase with more FLSs in the earnings call, whether with or without specific time frames. However, in the two weeks following the earnings call (Panel D), only the proportion of FLSs without time frames positively correlates with the change in the daily share turnover.

In Panel E, we can see that analysts use forward-looking information in earnings conference calls to improve their forecast for the next quarter. As seen in column 5, the improvement in the forecast of next quarter's earnings results from both FLSs with and without time frames. As shown in Panel F, the

[18] For market response proxies, see the definition in Section 3.3.4 and Appendix A. Some response variables are scaled by 100 to facilitate analyses.

fractional change of the analyst earnings forecast disagreement increases with more FLSs without time frames but decreases with more FLSs with time frames.

Overall, the above results show that investors respond to FLSs – more quickly to those with time frames and later to those without. Similarly, a higher proportion of FLSs with time frames leads to higher share turnover more quickly, while a higher proportion of FLSs without time frames leads to higher share turnover later. Analysts use FLSs – with and without time frames – to improve earnings forecasts. However, providing FLSs without time frames leads to more disagreement among analysts on earnings forecasts, while providing FLSs with time frames decreases the disagreement. These findings suggest that information in the FLSs without time frames may be more difficult for the market to digest.

4.3 Implications on the Firm's Future Performance

Finally, I examine the implications of the forward-looking disclosure in the earnings calls. To test if there are any implications on the firm's future profitability and capital investment, I use the following regression design following Call et al. (2014):

Profitability measure and accrual measure

$$= \beta_0 + \alpha * \text{FLS measures} + \beta_1 * \text{levq} + \beta_2 * \text{btm} + \beta_3 * \text{opcycle} + \beta_4 * \text{capint}$$
$$+ \beta_5 * \text{ibqearn} + \beta_6 * \text{size} + \beta_7 * \text{ior} + \beta_8 * \text{cfovol}$$
$$+ \beta_9 * \text{earnvol} + \beta_{10} * \text{pers} + \beta_{11} * \text{pred} + \beta_{12} * \text{guidance dummy} + \beta_{13} * \text{lsent}$$
$$+ \text{fiscal quarter FE} + \text{industry FE} + \text{year FE} + \eta \qquad (3)$$

Capital Investment measure

$$= \beta_0 + \alpha * \text{FLS measures} + \beta_1 * \text{logatq} + \beta_2 * \text{levq} + \beta_3 * \text{Q} + \beta_4 * \text{rated dummy}$$
$$+ \beta_5 * \text{dividend dymmy} + \beta_6 * \text{cashq} + \beta_7 * \text{cashflow} + \beta_8 * \text{saleq} + \beta_9$$
$$* \text{guidance dummy} + \beta_{10} * \text{lsent} + \text{fiscal quarter FE} + \text{industry FE} + \text{year FE}$$
$$+ \eta \qquad (4)$$

The definition of the firm's future profitability measures (***d_earn1-4***), accrual-based earnings management measures (***em***), and capital investment measures (***capexpq1***) is detailed in section 3.3.4. These measures for the firm's future operations are regressed against the provision of forward-looking disclosures (namely, the proportion of FLSs, the proportion of FLSs with time frames, and the proportion of FLSs without time frames in the managers' speech), with firm characteristics[19], whether the firm issued earnings guidance, the length of managers' speech, and industry (2-digit sic), fiscal quarter, and year fixed effects controlled for. Here, I explicitly control for the fiscal quarter effect besides the year effect. This is because earnings and investments may vary among quarters, and

[19] When the dependent variables are profitability and accruals, I use fundamentals documented in prior studies to be a determinant of earnings and earnings reporting and management (Barton & Waymire, 2004; Call et al., 2014; Cohen, 2008; Dechow & Dichev, 2002; DeFond & Jiambalvo, 1994; Skinner & Sloan, 2002; Waymire, 1985), and when the dependent variable is capital investment, I use fundamentals found in prior studies to be a determinant of capital investment (Doshi et al., 2018).

managers' incentives for earnings management may also differ in different quarters, as documented in prior studies[20] (Das et al., 2009; Dhaliwal et al., 2004). Again, the standard errors are clustered at the firm level. All the dependent variables are multiplied by 100 to facilitate analysis, and FLS measures are standardized to compare magnitudes in effects.

The results for implications on profitability, accrual-based earnings management, and investment are summarized in Table 6 Panel A, Table 7 Panel A, and Table 8 Panel A, respectively. After controlling for firm fundamentals and other information signals, the quarterly earnings change on a year-to-year basis and the accrual-based earnings management in future quarters are only positively correlated with the proportion of FLSs without time frames (***FLS_nqt***). However, the capital investment for the next quarter is only positively correlated with the proportion of FLSs with specific time frames (***FLS_qt***) in the earnings calls. These findings suggest that a higher proportion of FLSs without specific time frames may reveal a less foreseeable future path for the firm, which in turn is reflected in sharper changes in earnings and a higher need for accrual-based adjustment of the earnings numbers in the future. A higher proportion of FLSs with specific time frames reveals a more foreseeable future path for the firm, which in turn is reflected in more capital investment in the future.

[20] When testing the relation between uncertainty and disclosure as well as the market responses to disclosure features in earnings call, adding fiscal quarter fixed effect also does not change results qualitatively.

3.5. Conclusion

In this essay, I explore the informativeness of the general forward-looking disclosure and its time frame verifiability property – whether the forward-looking disclosure specifies time frames when the forecast is realized, by looking at the determinants, market responses, and implications on the firm's future performance of the forward-looking disclosure with and without time frames in earnings conference calls. I find that the proportion of FLSs, especially FLSs without time frames in earnings calls is positively correlated with uncertainty, and the positive effect is stronger with firms of larger size and higher institutional ownership. Per the market responses, investors respond to FLSs – – more quickly to those with time frames and later to those without time frames as well in terms of absolute stock returns and share turnover; analysts use FLSs – both those with and without time frames – to improve earnings forecast, while FLSs without time frames leads to more disagreement among analysts on earnings forecast and FLSs with time frames decreases disagreement. These patterns suggest that information in the FLSs without time frames may be more difficult for the market to digest. As for the implications on the firm's operation, the absolute change in future earnings and discretional accruals are both larger with more FLSs without time frames in the managers' speech, while the capital investment in the next quarter only increases with more FLSs with specific time frames, suggesting that more FLSs with (without) time frames may reveal a more (less) foreseeable future path for the firm. Collectively, this essay adds to the understanding of general forward-looking disclosure and its time frame verifiability property.

There are also several caveats in my essay. First, both managers' incentives and the firm's fundamentals can affect disclosure quality. My essay shows that uncertainty increases forward-looking disclosure without time frames, but it remains silent on how much managers' disclosure choices influence the results under uncertainty. Second, my essay does not distinguish between different kinds of forecasts and different time frames. Future research can focus more on specific forecasts (e.g., cash flow forecasts and earnings forecasts) and distinguish between short-term and long-term time frames.

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Appendix A: Variable definition

Variable	Definition and Calculation
Linguistic Features of Earnings Call	
FLSs	The number of FLSs divided by the total number of sentences in the managers' speech.
FLS_qt	The number of FLSs with time frames divided by the total number of sentences in the managers' speech.
FLS_nqt	The number of FLSs without time frames divided by the total number of sentences in the managers' speech.
lsent	the natural logarithm of the total sentence count plus one of the managers' speeches.
Uncertainty Proxies	
loss	Dummy indicating whether the firm's current earnings are negative.
earnvol	Earnings volatility is measured as the standard deviation of the firm's earnings before extraordinary items deflated by lagged assets over the last 12 quarters, with data from at least 4 quarters required for calculation.
expect_gap	The gap between analyst forecasts for the next quarter's earnings and the actual earnings is deflated by the stock price.
analyst_dispersion	The standard deviation of analyst forecasts of the current quarter's earnings before the earnings call.
Firms' Future Profitability and Capital Investment	
d_earn1-4	Unexpected future earnings for the next four quarters are calculated as the absolute value of the change in quarterly earnings on a year-to-year basis, where earnings are calculated as the quarterly earnings before extraordinary items scaled by the beginning book value of assets.
capexq1	The quarterly capital expenditure is scaled by the beginning balance of the next quarter's net property, plant, and equipment (capex).
Earnings Management	
em	Accrual-based earnings management is measured by the absolute value of discretionary accruals scaled by beginning assets for the next quarter. Five different methods in prior research are adopted, and the produced measures are denoted as ***em_healy***

Variable	Definition and Calculation
	(Healy, 1985), ***em_deangelo*** (DeAngelo, 1986)***, em_industry*** (Dechow et al., 1995)***, em_jones*** (Jones, 1991) and ***em_mod_jones*** (Dechow et al., 1995) respectively.
Market Response	
abs_window_ret	The absolute value of 3-day cumulative stock returns around the earnings call, i.e., trading days [-1, 1].
abs_lead_ret	The absolute value of cumulative stock returns in the following two weeks after the earnings call, i.e., trading days [2,9].
window_dvol	The directional change of average daily share turnover during the three days around the earnings call, i.e., trading days [-1, 1], compared to the average daily share turnover in the two weeks before the earnings call, i.e., trading days [-9,-2].
lead_dvol	The directional change of average daily share turnover in the two weeks after the earnings call, i.e., trading days [2, 9], compared to the average daily share turnover in the two weeks before the earnings call, i.e., trading days [-9,-2].
fe_change	The improvement of earnings forecast accuracy for the next quarter's earnings. Earnings forecast accuracy is measured as the absolute value of discrepancy between actual and consensus EPS deflated by stock price two trading days before the earnings call, and the improvement is calculated as the forecast accuracy before the earnings call minus the forecast accuracy after.
analyst_dispersion_change	The ratio of the standard deviation of analyst forecasts for quarterly earnings per share after the earnings call to the standard deviation of analyst forecasts before the earnings call.
Other Variables	
size	Firm size is the natural logarithm of the market value of equity at the end of the fiscal quarter.
logatq	The natural logarithm of the total assets.
btm	The book-to-market ratio is the book value of common equity divided by the market value of common shares outstanding at the end of the fiscal quarter.

Variable	Definition and Calculation
Q	Tobin's Q is calculated as the ratio of the sum of the market value of equity and the book value of debt to the sum of the book values of equity and debt.
levq	The leverage ratio is the ratio of long-term debt to the total assets.
capint	Capital intensity is the ratio of the property, plant, and equipment to the total assets.
cashq	Cash and equivalents are scaled by the total assets.
cashflowq	The sum of earnings before extraordinary items and depreciation and amortization expenses scaled by net PPE.
saleq	Quarterly net sales scaled by PPE.
opcycle	The operating cycle is the natural log of the operating cycle in days, accounting for accounts receivable and inventory turnover. $\ln[180 * \left(\frac{rectq + rectq_{lag}}{salesq} + \frac{invtq + invtq_{lag}}{cogsq}\right)]$
ibqearn	Earnings is the ratio of the earnings before extraordinary items to beginning total assets.
cfovol	The standard deviation of quarterly cash flows from operating activities scaled by lagged assets and is calculated using data from the last 12 quarters.
pers	Like Call et al. (2014), earnings persistence is measured by the slope from a seasonally adjusted AR (1) model of quarterly earnings with a rolling window of 12 quarters.
pred	Like Call et al. (2014), earnings predictivity is measured by the standard deviation of errors from a seasonally adjusted AR (1) model of quarterly earnings with a rolling window of 12 quarters.
dividendq	A dummy indicating whether the firm issues cash dividends during the current quarter.
lag_ret	Lagged return is the cumulative stock return covering the period from three trading days before the current earnings announcement to three trading days after the last.
retvol	Return volatility is the standard deviation of stock returns for the period from three trading days before the current earnings announcement and three trading days after the last one.

Variable	Definition and Calculation
ior	Institutional investors' ownership is the ratio of shares held by institutional investors to the total shares outstanding.
lanayst	The natural log of analysts following plus 1.
rated	A dummy indicating whether the firm has a long-term S&P credit rating, which may affect the firm's ability to borrow debt.
sue	Earnings surprise is calculated as the realized earnings minus the analyst consensus (mean value of) forecast just before the earnings call, scaled by stock price two trading days before the announcement date.
sue_pos	If the earnings surprise is positive, it is its absolute value of ***sue***; and when it is negative, zero is assigned as the value.
sue_neg	If the earnings surprise is negative, it is its absolute value of ***sue***; and when it is positive, zero is assigned as the value.
guidance	A dummy indicating if the firm issued an earnings guidance in the three trading days around the conference call. Data is from the I/B/E/S management guidance dataset (the identifying measures include 'EPS', 'GPS', and 'NET', following Bozanic et al. (2018))

Appendix B: Keyword list for forward-looking

'll, will, future, next fiscal, next month, next period, next quarter, next year, incoming fiscal, incoming month, incoming period, incoming quarter, incoming year, coming fiscal, coming month, coming period, coming quarter, coming year, upcoming fiscal, upcoming month, upcoming period, upcoming quarter, upcoming year, subsequent fiscal, subsequent month, subsequent period, subsequent quarter, subsequent year, following fiscal, following month, following period, following quarter, following year, we expect, and expect, but expect, do not expect, company expects, corporation expects, firm expects, management expects, and expects, but expects, does not expect, is expected, are expected, not expected, is expecting, are expecting, not expecting, normally expect, normally expects, currently expect, currently expects, also expect, also expects, we aim, and aim, but aim, do not aim, company aims, corporation aims, firm aims, management aims, and aims, but aims, does not aim, is aimed, are aimed, not aimed, is aiming, are aiming, not aiming, normally aim, normally aims, currently aim, currently aims, also aim, also aims, we anticipate, and anticipate, but anticipate, do not anticipate, company anticipates, corporation anticipates, firm anticipates, management anticipates, and anticipates, but anticipates, does not anticipate, is anticipated, are anticipated, not anticipated, is anticipating, are anticipating, not anticipating, normally anticipate, normally anticipates, currently anticipate, currently anticipates, also anticipate, also anticipates, we assume, and assume, but assume, do not assume, company assumes, corporation assumes, firm assumes, management assumes, and assumes, but assumes, does not assume, is assumed, are assumed, not assumed, is assuming, are assuming, not assuming, normally assume, normally assumes, currently assume, currently assumes, also assume, also assumes, we commit, and commit, but commit, do not commit, company commits, corporation

commits, firm commits, management commits, and commits, but commits, does not commit, is committed, are committed, not committed, is committing, are committing, not committing, normally commit, normally commits, currently commit, currently commits, also commit, also commits, we expect, and expect, but expect, do not expect, company expects, corporation expects, firm expects, management expects, and expects, but expects, does not expect, is expected, are expected, not expected, is expecting, are expecting, not expecting, normally expect, normally expects, currently expect, currently expects, also expect, also expects, we forecast, and forecast, but forecast, do not forecast, company forecasts, corporation forecasts, firm forecasts, management forecasts, and forecasts, but forecasts, does not forecast, is forecasted, are forecasted, not forecasted, is forecasting, are forecasting, not forecasting, normally forecast, normally forecasts, currently forecast, currently forecasts, also forecast, also forecasts, we foresee, and foresee, but foresee, do not foresee, company foresees, corporation foresees, firm foresees, management foresees, and foresees, but foresees, does not foresee, is foreseen, are foreseen, not foreseen, is foreseeing, are foreseeing, not foreseeing, normally foresee normally foresees, currently foresee, currently foresees, also foresee, also foresees, we hope, and hope, but hope, do not hope, company hopes, corporation hopes, firm hopes, management hopes, and hopes, but hopes, does not hope, is hoped, are hoped, not hoped, is hoping, are hoping, not hoping, normally hope, normally hopes, currently hope, currently hopes, also hope, also hopes, we intend, and intend, but intend, do not intend, company intends, corporation intends, firm intends, management intends, and intends, but intends, does not intend, is intended, are intended, not intended, is intending, are intending, not intending, normally intend, normally intends, currently intend, currently intends, also intend, also intends, we plan, and plan, but plan, do not plan, company plans, corporation plans, firm

plans, management plans, and plans, but plans, does not plan, is planed, are planed, not planed, is planning, are planning, not planning, normally plan, normally plans, currently plan, currently plans, also plan, also plans, we seek, and seek , but seek, do not seek, company seeks, corporation seeks, firm seeks, management seeks, and seeks, but seeks, does not seek, is sought, are sought, not sought, is seeking, are seeking, not seeking, normally seek, normally seeks, currently seek, currently seeks, also seek, also seeks, we project, and project, but project, do not project, company projects, corporation projects, firm projects, management projects, and projects, but projects, does not project, is projected, are projected, not projected, is projecting, are projecting, not projecting, normally project, normally projects, currently project, currently projects, also project, also projects, we target, and target, but target, do not target, company targets, corporation targets, firm targets, management targets, and targets, but targets, does not target, is targeted, are targeted, not targeted, is targeting, are targeting, not targeting, normally target, normally targets, currently target, currently targets, also target, also targets

Appendix C: Keyword list for time frames

day, days, daily, week, weeks, weekly, month, months, monthly, quarter, quarters, quarterly, year, years, annual, annually, January, February, March, April, May, June, July, August, September, October, November, December, Q1, Q2, Q3, Q4

Appendix D: Time Frames in Forward-looking Statements: Measurement Approach

In this essay, using keyword search, I classify one sentence as FLSs with time frames if the FLSs (1) contains any keyword of time frames (2) or references to a future year compared to the conference call year. Further among FLSs, I differentiate between those with and without specific reference to time frames (***FLS_qt*** and ***FLS_nqt***). The reason to look at how specific time frames are in the forward-looking statement is that the time frames are an important dimension for the information content of forward-looking disclosures, apart from how specific they are in the projected level (of income, revenue, etc.), which has already been a focus of existing research. In this sense, this essay is to complement our knowledge of the information content of the corporate forward-looking disclosures. This appendix provides details on the measurement.

1. Gold Standard

To develop classification algorithms, I constructed a "gold standard" which is composed of 200 randomly picked-up paragraphs of the management (1288 sentences). Then I manually determine whether each sentence is a forward-looking statement (***FLSs***), and further, if it is a forward-looking statement, whether it contains a specific time frame (***FLS_qt***). For each sentence, two indicators are recorded, one for whether it is a forward-looking statement, and the other for whether it contains specific time frames if it is a forward-looking statement.

The whole corpus is divided into the training and test sub-samples, with the former composed of 882 sentences and the latter 406 sentences. The online file contains the gold corpus used for the measurement.[21]

2. Develop Classification Algorithm

I developed a set of regular expressions based on manually identified forward-looking and time frame phrases using the training sample until in-sample classification performance was satisfactory – classification accuracy of the algorithm correctly classifying forward-looking statements (and forward-looking statements with time frames) exceeds 95%.

3. Out-of-Sample Classification Performance

After determining the regular expressions, I applied the algorithm to the holdout test sample, and the accuracy of the algorithm classifying forward-looking statements (and forward-looking statements with time frames) also exceeds 95%. The algorithm development and performance statistics are reported online.[22]

[21] https://github.com/yiyangw2/time_frame_gold_corpus/blob/main/Gold%20Standard%20Corpus.xlsx

[22] https://github.com/yiyangw2/time_frame_gold_corpus/blob/main/classification_algorithm_perf.ipynb

Appendix E: Examples of forward-looking statements with and without time frames in earnings calls

In the Electromed's (ELMD) Q1 2018 earnings call[23], CFO Jeremy Brock:

Forward-looking statements with time frames: "Although quarter-to-quarter sales variability can be expected due to the nature of our business, we anticipate stronger revenue growth in the back half of fiscal 2018, as the impact of our increased level of investment and sales initiatives begin to take hold. …… We believe that gross margins will range in the mid to upper 70s in fiscal 2018, in part reflecting several new contracts that we signed in the previous year and planned for at lower average ASPs."

Forward-looking statements without time frames: "These new payer contracts will broaden our ability to grow revenue and gross profit dollars and improve the utilization of our resources as individuals who are out-of-network become in-network."

In the Alliant Energy Corporation's (LNT) Q3 2017 earnings call[24], Pat Kampling, the President and CEO:

Forward-looking statements with time frames: "We will file a joint application with the PSCW for the purchase of this Wisconsin wind farm before year-end.…… We anticipate filing a request for

[23] https://seekingalpha.com/article/4123616-electromeds-elmd-ceo-jeremy-brock-on-q1-2018-results-earnings-call-transcript

[24] https://seekingalpha.com/article/4120777-alliant-energy-corporations-lnt-ceo-pat-kampling-on-q3-2017-results-earnings-call-transcript

additional wind investments with the Public Service Commission before the year-end……. We expect FERC approval of the wholesale supply agreement within the coming months……. It's too early for us to know the potential impacts of tax reform on our company and customers, especially given that changes are expected in the coming weeks…….Our dedicated employees delivered solid third-quarter results and will deliver on full-year financial and operating objectives."

Forward-looking statements without time frames: "And as energy technologies evolve, we will continue to evaluate our investment plans to best serve the needs of our customers……. We will remain involved in the process and will continue to advocate for our customers for the economic growth in the communities we are privileged to serve……."

Table 1 Sample Distribution by Year

Distribution of quarterly earnings call by year

Year	No	%
2002	1358	1.34
2003	2888	2.85
2004	3447	3.40
2005	3775	3.72
2006	4072	4.01
2007	4472	4.41
2008	5094	5.02
2009	5284	5.21
2010	5540	5.46
2011	5931	5.85
2012	6121	6.03
2013	6143	6.05
2014	7070	6.97
2015	7682	7.57
2016	7930	7.82
2017	7616	7.51
2018	8686	8.56
2019	8349	8.23
Total	101458	100.00

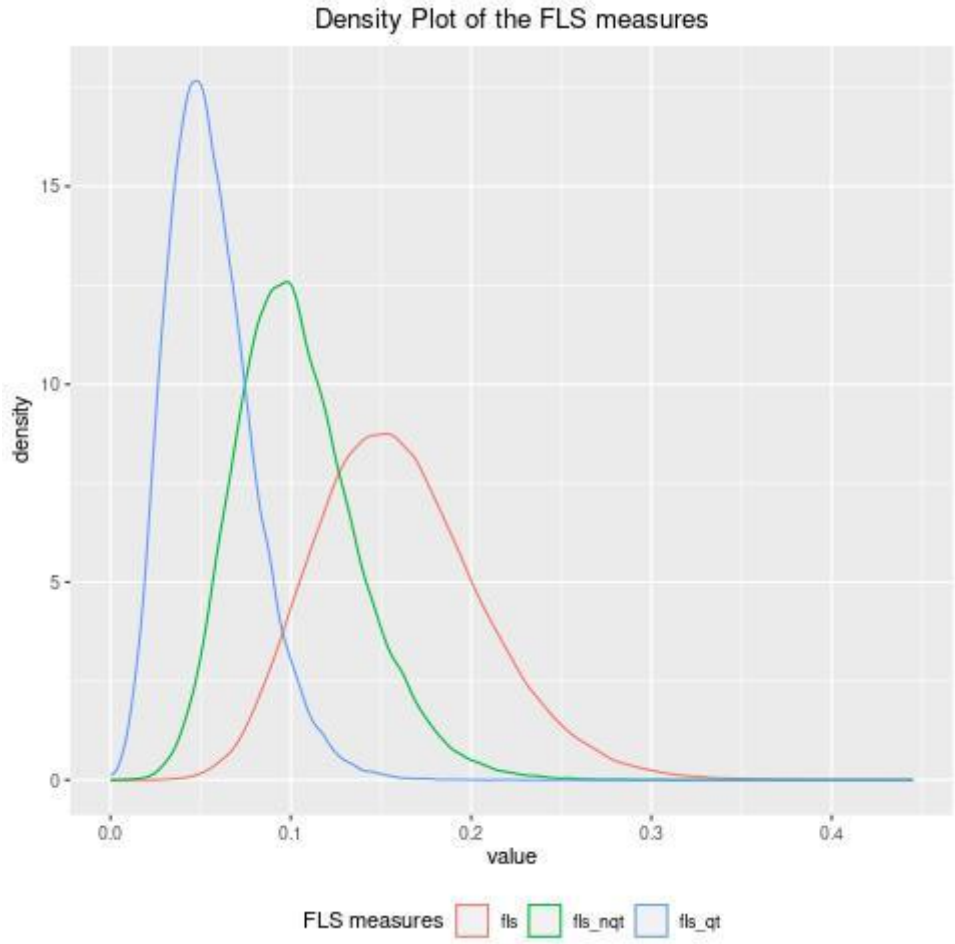
Table 2 An Initial Look at FLS Measures

Panel A: FLS measures by year

year	FLSs	FLS_nqt	% of FLSs	FLS_qt	% of FLSs
2002	0.141	0.086	61	0.055	39
2003	0.149	0.093	63	0.056	37
2004	0.154	0.096	63	0.057	37
2005	0.153	0.097	63	0.056	37
2006	0.155	0.099	64	0.056	36
2007	0.160	0.103	65	0.057	35
2008	0.161	0.105	65	0.056	35
2009	0.162	0.106	65	0.056	35
2010	0.161	0.105	65	0.056	35
2011	0.162	0.104	65	0.057	35
2012	0.163	0.105	64	0.058	36
2013	0.163	0.106	65	0.058	35
2014	0.163	0.106	65	0.057	35
2015	0.164	0.107	66	0.056	34
2016	0.163	0.107	66	0.056	34
2017	0.161	0.106	66	0.055	34
2018	0.161	0.107	67	0.054	33
2019	0.159	0.106	66	0.054	34
Total	0.160	0.104	65	0.056	35

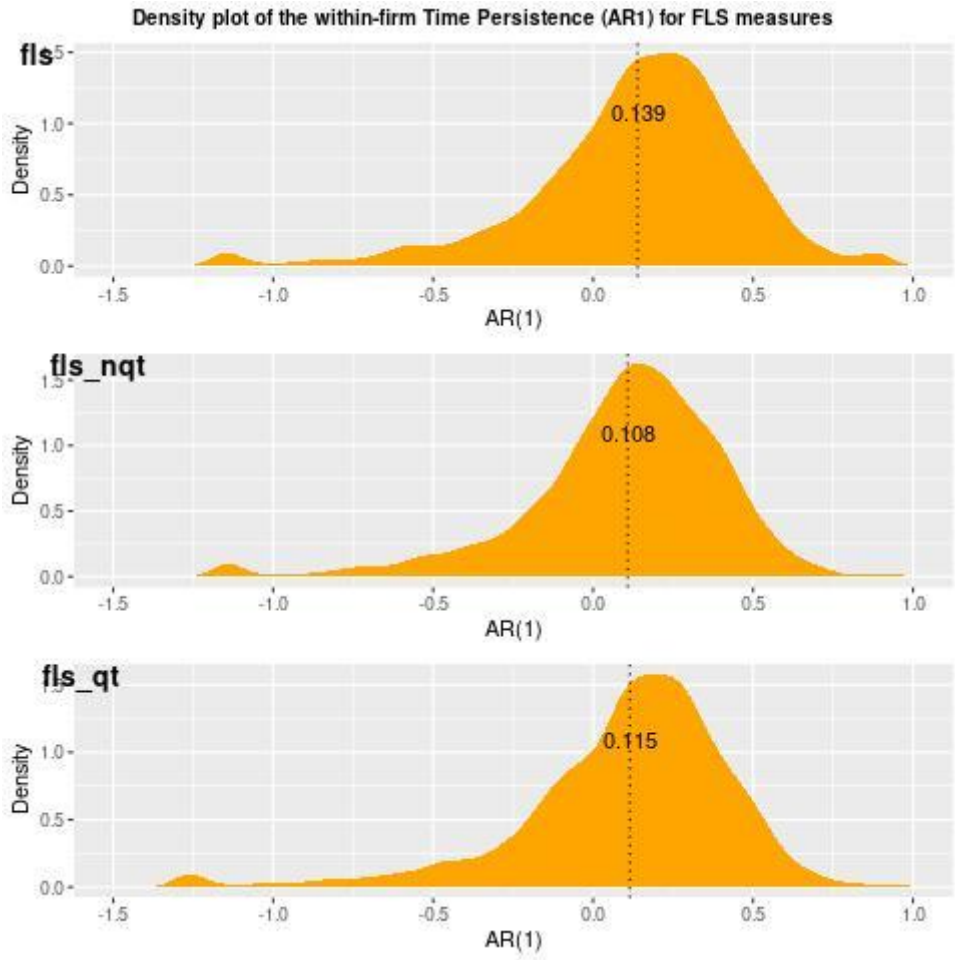
Note: Definitions of variables are in Appendix A.

Panel B: Density plot of the FLS measures



Note: ***FLS measure***s the proportion of forward-looking statements in managers' speech. ***FLS_nqt*** (***FLS_qt***) refers to the proportion of forward-looking statements in managers' speech with (without) specific time frames. The plot displays the density distribution for the three FLS measures.

Panel C: Time persistence – Density plot of the within-firm 1st-order autocorrelation for FLS measures



Note: ***FLS measure***s the proportion of forward-looking statements in managers' speech. ***FLS_nqt*** (***FLS_qt***) refers to the proportion of forward-looking statements in managers' speech with (without) specific time frames. The plot displays within-firm AR(1) for the three FLS measures.

Table 3 Summary Statistics and Correlations

Panel A: Summary Statistics:

Statistic	N	Mean	St. Dev.	Pctl(25)	Median	Pctl(75)
FLSs	101,458	0.16	0.05	0.13	0.16	0.19
FLS_nqt	101,458	0.10	0.03	0.08	0.10	0.12
FLS_qt	101,458	0.06	0.02	0.04	0.05	0.07
lsent	101,458	5.68	0.37	5.46	5.73	5.95
loss	101,421	0.25	0.43	0	0	0
earnvol	99,822	0.02	0.04	0.005	0.01	0.02
expect_gap	99,403	0.01	0.02	0.001	0.002	0.01
analyst_dispersion	92,172	0.003	0.01	0.001	0.001	0.003
d_earn1	99,790	0.02	0.07	0.002	0.01	0.02
d_earn2	100,136	0.02	0.07	0.002	0.01	0.02
d_earn3	100,317	0.02	0.07	0.002	0.01	0.02
d_earn4	100,010	0.02	0.07	0.002	0.01	0.02
em_mod_jones	50,458	0.02	0.03	0.01	0.01	0.03
em_jones	50,458	0.02	0.03	0.01	0.01	0.03
em_industry	50,458	0.02	0.03	0.01	0.01	0.03
em_healy	50,458	0.02	0.03	0.01	0.01	0.03
em_deangelo	50,273	0.04	0.04	0.01	0.02	0.05
capexq1	92,261	0.07	0.07	0.03	0.05	0.08
abs_window_ret	101,454	0.06	0.06	0.02	0.04	0.08
abs_lead_ret	101,444	0.05	0.05	0.02	0.03	0.07
window_dvol	101,454	0.01	0.01	0.001	0.004	0.01
lead_dvol	101,454	0.002	0.01	-0.0004	0.001	0.003
fe_change	99,403	0.001	0.005	-0.0002	0.0002	0.001
analyst_dispersion_change	89,479	1.01	0.75	0.50	1.00	1.00
size	101,458	7.35	1.69	6.18	7.27	8.42
btm	101,458	0.51	0.41	0.24	0.44	0.71
ret_lag	101,458	0.03	0.17	-0.06	0.02	0.11
retvol	101,458	0.02	0.01	0.01	0.02	0.03
lanalyst	101,458	2.06	0.69	1.61	2.08	2.56
sue	101,452	0.0000	0.01	-0.001	0.0005	0.002
sue_pos	101,452	0.003	0.01	0.00	0.0005	0.002

sue_neg	101,452	0.003	0.01	0.00	0.00	0.001
guidance	101,458	0.39	0.49	0	0	1
levq	100,631	0.22	0.21	0.03	0.18	0.36
opcycle	95,278	6.19	1.40	5.46	6.02	6.60
capint	95,344	0.23	0.25	0.04	0.13	0.35
ibqearn	101,423	0.001	0.07	0.0002	0.01	0.02
ior	83,860	0.71	0.26	0.56	0.77	0.90
cfovol	98,243	0.03	0.03	0.01	0.02	0.04
pers	91,466	0.20	0.48	-0.10	0.12	0.48
pred	96,233	0.39	0.57	0.10	0.19	0.42
logatq	101,457	7.47	1.90	6.13	7.45	8.72
q	92,271	2.63	2.47	1.24	1.77	2.95
rated	101,458	0.34	0.47	0	0	1
dividendq	101,458	0.51	0.50	0	1	1
cashq	101,447	0.17	0.22	0.03	0.08	0.23
cashflowq	88,647	-0.10	1.83	0.03	0.10	0.27
saleq	93,005	3.22	5.83	0.57	1.38	3.07

Note: The definition of variables is in Appendix A

Panel B: Correlation Matrix of Selected Variables

	FLSs	FLS_nqt	FLS_qt	loss	earnvol	expect_gap	analyst_dispersion	size	btm	ret_lag	retvol
FLSs											
FLS_nqt	**0.86*** **										
FLS_qt	**0.70*** **	**0.25*** **									
loss	0.15***	0.17***	0.05***								
earnvol	0.14***	0.16***	0.05***	0.35***							
expect_gap	0.09***	0.10***	0.03***	0.29***	0.18***						
analyst_dispers	0.14***	0.16***	0.04***	0.38***	0.29***	0.60***					
size	-0.03***	-0.01***	-0.03***	-0.33***	-0.27***	-0.29***	-0.35***				
btm	-0.02***	-0.01**	-0.03***	0.04***	-0.14***	0.23***	0.22***	-0.23***			
ret_lag	-0.02***	-0.02***	0.00	-0.03***	0.00	-0.14***	-0.14***	0.03***	-0.07***		
retvol	0.11***	0.12***	0.04***	0.39***	0.35***	0.41***	0.49***	-0.44***	0.15***	-0.10***	
lanalyst	0.00	0.00	-0.01	-0.14***	-0.13***	-0.17***	-0.16***	0.66***	-0.15***	-0.01**	-0.16***

*** p<0.01, ** p<0.05, * p<0.1. Definitions of variables are in Appendix A.

Table 4 Uncertainty and Forward-looking Disclosure in Earnings Calls

Panel A: Proportion of FLSs with time frames in managers' speech and uncertainty

	Dep. var: the proportion of FLSs with time frames in managers' speech (percentage)					
	(1)	(2)	(3)	(4)	(5)	(6)
size	-0.01 (0.02)	-0.0004 (0.01)	0.002 (0.01)	0.004 (0.01)	0.001 (0.01)	0.003 (0.01)
btm	0.11* (0.06)	0.06* (0.03)	0.06* (0.03)	0.07** (0.03)	0.05 (0.03)	0.07** (0.04)
ret_lag	-0.13*** (0.04)	-0.17*** (0.04)	-0.16*** (0.04)	-0.16*** (0.04)	-0.15*** (0.04)	-0.13*** (0.04)
lanalyst	-0.04 (0.05)	-0.04 (0.03)	-0.05 (0.03)	-0.05 (0.03)	-0.05* (0.03)	-0.11*** (0.03)
FLS_qt_lag		0.45*** (0.01)	0.45*** (0.01)	0.45*** (0.01)	0.45*** (0.01)	0.45*** (0.01)
loss			0.03 (0.03)			
earnvol				0.37 (0.30)		
expect_gap					1.45** (0.57)	
analyst_dispersion						2.31 (2.09)
year and ind FE	Y	Y	Y	Y	Y	Y
Observations	101,458	99,184	99,148	98,057	97,217	90,283
Adjusted R^2	0.08	0.27	0.27	0.27	0.27	0.28

Note: *p<0.1**p<0.05***p<0.01; Definition of variables are in Appendix A.

Panel B: Proportion of FLSs without time frames in managers' speech and uncertainty

	Dep. var: the proportion of FLSs without time frames in managers' speech (percentage)					
	(1)	(2)	(3)	(4)	(5)	(6)
size	-0.07** (0.03)	-0.04** (0.02)	0.01 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.005 (0.02)
btm	0.16* (0.08)	0.09* (0.05)	0.07 (0.05)	0.15*** (0.05)	0.02 (0.05)	0.02 (0.05)
ret_lag	-0.21*** (0.06)	-0.30*** (0.06)	-0.28*** (0.06)	-0.31*** (0.06)	-0.21*** (0.06)	-0.17*** (0.06)
lanalyst	0.06 (0.07)	0.06 (0.04)	0.02 (0.04)	0.05 (0.04)	0.08** (0.04)	0.11** (0.04)
FLS_nqt_lag		0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)
loss			0.53*** (0.04)			
earnvol				4.45*** (0.44)		
expect_gap					8.97*** (0.76)	
analyst_dispersion						40.42*** (3.24)
year and ind FE	Y	Y	Y	Y	Y	Y
Observations	101,458	99,184	99,148	98,057	97,217	90,283
Adjusted R^2	0.12	0.28	0.28	0.28	0.28	0.28

Note: *p<0.1**p<0.05***p<0.01; Definition of variables are in Appendix A.

Panel C: Proportion of FLSs in managers' speech and uncertainty

	dep. var: the proportion of FLSs in managers' speech (percentage)					
	(1)	(2)	(3)	(4)	(5)	(6)
size	-0.08* (0.04)	-0.04 (0.02)	0.01 (0.02)	-0.003 (0.02)	-0.02 (0.02)	-0.0005 (0.02)
btm	0.27** (0.12)	0.13** (0.06)	0.12* (0.06)	0.19*** (0.06)	0.06 (0.06)	0.09 (0.07)
ret_lag	-0.34*** (0.08)	-0.48*** (0.08)	-0.46*** (0.08)	-0.49*** (0.08)	-0.38*** (0.08)	-0.33*** (0.08)
lanalyst	0.02 (0.10)	0.02 (0.05)	-0.02 (0.05)	0.003 (0.05)	0.03 (0.05)	-0.01 (0.06)
FLSs_lag		0.50*** (0.01)	0.49*** (0.01)	0.50*** (0.01)	0.50*** (0.01)	0.50*** (0.01)
loss			0.48*** (0.05)			
earnvol				4.22*** (0.53)		
expect_gap					9.58*** (1.01)	
analyst_dispersion						38.45*** (3.95)
year and ind FE	Y	Y	Y	Y	Y	Y
Observations	101,458	99,184	99,148	98,057	97,217	90,283
Adjusted R^2	0.13	0.34	0.34	0.34	0.34	0.34

Note: *p<0.1**p<0.05***p<0.01; Definition of variables are in Appendix A.

Panel D: Issuing earnings guidance and uncertainty.

	dep. var: guidance dummy				
	(1)	(2)	(3)	(4)	(5)
size	0.06*** (0.01)	0.05*** (0.01)	0.05*** (0.01)	0.06*** (0.01)	0.05*** (0.01)
btm	-0.01 (0.02)	-0.01 (0.01)	-0.03** (0.02)	0.001 (0.02)	0.01 (0.02)
ret_lag	0.004 (0.01)	-0.002 (0.01)	0.002 (0.01)	-0.02*** (0.01)	-0.04*** (0.01)
lanalyst	0.05*** (0.01)	0.06*** (0.01)	0.05*** (0.01)	0.04*** (0.01)	0.04** (0.02)
loss		-0.13*** (0.01)			
earnvol			-1.27*** (0.12)		
expect_gap				-1.93*** (0.19)	
analyst_dispersion					-10.30*** (0.83)
year and ind FE	Y	Y	Y	Y	Y
Observations	101,458	101,421	99,822	99,403	92,172
Adjusted R^2	0.22	0.23	0.23	0.23	0.23
Note:	*p<0.1**p<0.05***p<0.01. Definition of variables are in Appendix A.				

Panel E: Issuing earnings guidance and uncertainty.

	(1)	(2)	(3)
	Proportion of FLSs (standardized)	Guidance dummy (standardized)	p value for comparison
loss	0.103*** (0.007)	-0.26*** (0.007)	P<0.01
earnvol	0.916*** (0.077)	-2.593*** (0.081)	P<0.01
expect_gap	2.07*** (0.167)	-3.96*** (0.179)	P<0.01
analyst_dispersion	8.32*** (0.591)	-21.071*** (0.638)	P<0.01

	(1)	(2)	(3)
	Proportion of FLSs without time frames (standardized)	Proportion of FLSs with time frames (standardized)	p value for comparison
loss	0.156*** (0.007)	0.011 (0.007)	P<0.01
earnvol	1.319*** (0.08)	0.153* (0.081)	P<0.01
expect_gap	2.645*** (0.174)	0.601*** (0.176)	P<0.01
analyst_dispersion	11.935*** (0.617)	0.971 (0.621)	P<0.01

Note: $^{*}p<0.1$ $^{**}p<0.05$ $^{***}p<0.01$; Definition of variables are in Appendix A.

Panel F: Proportion of FLSs without time frames in managers' speech and uncertainty (subsample analysis)

With larger firm size:	dep. var: the proportion of FLSs without time frames in managers' speech (percentage)					
	(1)	(2)	(3)	(4)	(5)	(6)
size	0.01 (0.05)	-0.01 (0.03)	0.02 (0.03)	0.02 (0.03)	0.0004 (0.03)	0.01 (0.03)
btm	0.50*** (0.16)	0.29*** (0.09)	0.26*** (0.09)	0.34*** (0.09)	0.20** (0.09)	0.18* (0.09)
ret_lag	-0.24** (0.11)	-0.48*** (0.10)	-0.51*** (0.10)	-0.51*** (0.10)	-0.41*** (0.10)	-0.38*** (0.10)
lanalyst	0.06 (0.11)	0.08 (0.06)	0.05 (0.06)	0.06 (0.06)	0.09 (0.06)	0.13* (0.07)
FLS_nqt_lag		0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)
loss			0.52*** (0.06)			
earnvol				5.90*** (0.85)		
expect_gap					14.55*** (1.78)	
analyst_dispersion						65.69*** (8.77)
year and ind FE	Y	Y	Y	Y	Y	Y
Observations	50,729	50,047	50,038	49,662	49,319	48,091
Adjusted R^2	0.12	0.28	0.28	0.28	0.28	0.28

Note: *p<0.1**p<0.05***p<0.01; Definition of variables are in Appendix A.

With smaller firm size:	dep. var: the proportion of FLSs without time frames in managers' speech (percentage)					
	(1)	(2)	(3)	(4)	(5)	(6)
size	-0.17*** (0.05)	-0.10*** (0.03)	-0.02 (0.03)	-0.06* (0.03)	-0.04 (0.03)	-0.02 (0.04)
btm	0.04 (0.09)	0.01 (0.05)	0.02 (0.05)	0.07 (0.05)	-0.04 (0.05)	-0.03 (0.06)
ret_lag	-0.16** (0.07)	-0.19** (0.07)	-0.16** (0.07)	-0.20*** (0.07)	-0.10 (0.07)	-0.04 (0.08)
lanalyst	0.11 (0.08)	0.09* (0.05)	0.04 (0.05)	0.08 (0.05)	0.11** (0.05)	0.15*** (0.06)
FLS_nqt_lag		0.42*** (0.01)	0.42*** (0.01)	0.42*** (0.01)	0.42*** (0.01)	0.42*** (0.01)
loss			0.48*** (0.05)			
earnvol				3.38*** (0.48)		
expect_gap					7.89*** (0.84)	
analyst_dispersion						35.35*** (3.48)
year and ind FE	Y	Y	Y	Y	Y	Y
Observations	50,729	49,137	49,110	48,395	47,898	42,192
Adjusted R^2	0.13	0.28	0.29	0.29	0.29	0.29

Note: *p<0.1**p<0.05***p<0.01; Definition of variables are in Appendix A.

Panel G: Proportion of FLSs without time frames in managers' speech and uncertainty (subsample analysis)

With higher institutional ownership:	dep. var: the proportion of FLSs without time frames in managers' speech (percentage)					
	(1)	(2)	(3)	(4)	(5)	(6)
size	-0.04 (0.05)	-0.03 (0.03)	0.03 (0.03)	0.01 (0.03)	-0.01 (0.03)	0.001 (0.03)
btm	0.49*** (0.13)	0.29*** (0.08)	0.27*** (0.08)	0.34*** (0.08)	0.21*** (0.08)	0.20** (0.08)
ret_lag	-0.13 (0.10)	-0.29*** (0.09)	-0.29*** (0.09)	-0.30*** (0.09)	-0.21** (0.09)	-0.18* (0.09)
lanalyst	0.25** (0.10)	0.17*** (0.06)	0.11* (0.06)	0.15** (0.06)	0.20*** (0.06)	0.22*** (0.06)
FLS_nqt_lag		0.42*** (0.01)	0.41*** (0.01)	0.41*** (0.01)	0.42*** (0.01)	0.42*** (0.01)
loss			0.55*** (0.06)			
earnvol				5.68*** (0.82)		
expect_gap					11.86*** (1.57)	
analyst_dispersion						48.05*** (6.05)
year and ind FE	Y	Y	Y	Y	Y	Y
Observations	41,930	41,512	41,503	41,228	41,039	40,245
Adjusted R^2	0.11	0.26	0.27	0.27	0.27	0.27

Note: *p<0.1**p<0.05***p<0.01; Definition of variables are in Appendix A.

With lower ownership:	dep. var: the proportion of FLSs without time frames in managers' speech (percentage)					
	(1)	(2)	(3)	(4)	(5)	(6)
size	-0.12*** (0.04)	-0.07*** (0.03)	-0.01 (0.02)	-0.05* (0.02)	-0.05** (0.03)	-0.04 (0.03)
btm	0.20* (0.10)	0.11* (0.06)	0.10 (0.06)	0.17*** (0.06)	0.04 (0.06)	0.04 (0.07)
ret_lag	-0.11 (0.09)	-0.17** (0.08)	-0.14* (0.08)	-0.18** (0.09)	-0.10 (0.09)	-0.04 (0.10)
lanalyst	0.12 (0.10)	0.09 (0.06)	0.03 (0.06)	0.08 (0.06)	0.09 (0.06)	0.09 (0.07)
FLS_nqt_lag		0.44*** (0.01)	0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)	0.43*** (0.01)
loss			0.54*** (0.05)			
earnvol				3.51*** (0.52)		
expect_gap					7.31*** (0.92)	
analyst_dispersion						32.84*** (3.94)
year and ind FE	Y	Y	Y	Y	Y	Y
Observations	41,930	40,424	40,402	39,811	39,375	35,029
Adjusted R^2	0.16	0.31	0.32	0.32	0.32	0.32

Note: *p<0.1**p<0.05***p<0.01; Definition of variables are in Appendix A.

Table 5 Market Responses to Forward-looking Disclosure in Earnings Calls

Panel A: stock price reactions to forward-looking disclosure in earnings calls (***abs_window_ret***)

	dep. var: absolute value of cumulative returns over the three-day event window, scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	1.33*** (0.51)				
FLS_nqt		0.99 (0.66)		0.62 (0.67)	0.02 (0.02)
FLS_qt			2.73*** (0.98)	2.56*** (0.99)	0.06*** (0.02)
sue_pos	60.60*** (4.81)	60.69*** (4.81)	60.76*** (4.81)	60.67*** (4.81)	60.67*** (4.81)
sue_neg	28.81*** (3.27)	28.85*** (3.27)	28.93*** (3.27)	28.88*** (3.27)	28.88*** (3.27)
earnvol	-0.48 (0.79)	-0.45 (0.79)	-0.43 (0.79)	-0.45 (0.79)	-0.45 (0.79)
loss	0.04 (0.07)	0.04 (0.07)	0.05 (0.07)	0.04 (0.07)	0.04 (0.07)
btm	-0.27*** (0.09)	-0.27*** (0.09)	-0.27*** (0.09)	-0.27*** (0.09)	-0.27*** (0.09)
size	-0.41*** (0.02)	-0.41*** (0.02)	-0.41*** (0.02)	-0.41*** (0.02)	-0.41*** (0.02)
retvol	90.42*** (2.68)	90.53*** (2.68)	90.74*** (2.68)	90.59*** (2.68)	90.59*** (2.68)
guidance	0.16** (0.07)	0.17*** (0.07)	0.16** (0.07)	0.16** (0.07)	0.16** (0.07)
lsent	1.20*** (0.08)	1.19*** (0.08)	1.21*** (0.08)	1.21*** (0.08)	1.21*** (0.08)
year and ind FE	Y	Y	Y	Y	Y
Observations	99,780	99,780	99,780	99,780	99,780
Adjusted R^2	0.16	0.16	0.16	0.16	0.16

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Panel B: stock price reactions to forward-looking disclosure in earnings calls (***abs_lead_ret***)

dep. var: absolute value of cumulative returns in the two weeks following the call, scaled by 100

	(1)	(2)	(3)	(4)	(5)
FLSs	2.17*** (0.33)				
FLS_nqt		2.52*** (0.45)		2.22*** (0.46)	0.08*** (0.02)
FLS_qt			2.71*** (0.62)	2.09*** (0.63)	0.05*** (0.02)
sue_pos	28.79*** (3.29)	28.80*** (3.29)	29.12*** (3.29)	28.78*** (3.29)	28.78*** (3.29)
sue_neg	23.28*** (2.59)	23.25*** (2.59)	23.48*** (2.59)	23.28*** (2.59)	23.28*** (2.59)
earnvol	2.53*** (0.56)	2.53*** (0.56)	2.64*** (0.56)	2.53*** (0.56)	2.53*** (0.56)
loss	0.53*** (0.05)	0.54*** (0.05)	0.55*** (0.05)	0.53*** (0.05)	0.53*** (0.05)
btm	-0.003 (0.05)	-0.0003 (0.05)	-0.001 (0.05)	-0.003 (0.05)	-0.003 (0.05)
size	-0.23*** (0.01)	-0.23*** (0.01)	-0.22*** (0.01)	-0.23*** (0.01)	-0.23*** (0.01)
retvol	106.81*** (2.15)	106.75*** (2.16)	107.34*** (2.15)	106.80*** (2.16)	106.80*** (2.16)
guidance	-0.18*** (0.04)	-0.16*** (0.04)	-0.17*** (0.04)	-0.18*** (0.04)	-0.18*** (0.04)
lsent	0.30*** (0.05)	0.28*** (0.05)	0.30*** (0.05)	0.30*** (0.05)	0.30*** (0.05)
year and ind FE	Y	Y	Y	Y	Y
Observations	99,770	99,770	99,770	99,770	99,770
Adjusted R^2	0.21	0.21	0.21	0.21	0.21

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Panel C: changes in the stock trading liquidity in response to forward-looking disclosure in earnings calls (***window_dvol***)

dep. var: the directional change of average daily share turnover in the 3-day earnings call event window i.e., trading days [-1,1], compared to that in the two weeks prior to the earnings call, i.e., trading days [-9,-2], scaled by 100

	(1)	(2)	(3)	(4)	(5)
FLSs	0.80*** (0.17)				
FLS_nqt		0.80*** (0.21)		0.64*** (0.21)	0.02*** (0.01)
FLS_qt			1.25*** (0.35)	1.07*** (0.35)	0.03*** (0.01)
sue_pos	7.89*** (1.11)	7.91*** (1.11)	8.00*** (1.11)	7.90*** (1.11)	7.90*** (1.11)
sue_neg	2.24*** (0.83)	2.25*** (0.83)	2.32*** (0.83)	2.26*** (0.83)	2.26*** (0.83)
earnvol	0.73*** (0.25)	0.74*** (0.25)	0.77*** (0.25)	0.74*** (0.25)	0.74*** (0.25)
loss	-0.02 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.02 (0.02)
btm	-0.15*** (0.03)	-0.14*** (0.03)	-0.14*** (0.03)	-0.15*** (0.03)	-0.15*** (0.03)
size	0.003 (0.01)	0.003 (0.01)	0.004 (0.01)	0.003 (0.01)	0.003 (0.01)
retvol	10.02*** (0.84)	10.03*** (0.84)	10.22*** (0.84)	10.06*** (0.84)	10.06*** (0.84)
guidance	0.05* (0.03)	0.05** (0.03)	0.05* (0.03)	0.05* (0.03)	0.05* (0.03)
lsent	0.55*** (0.03)	0.54*** (0.03)	0.55*** (0.03)	0.55*** (0.03)	0.55*** (0.03)
year and ind FE	Y	Y	Y	Y	Y
Observations	99,780	99,780	99,780	99,780	99,780
Adjusted R^2	0.14	0.14	0.14	0.14	0.14

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Panel D: changes in the stock trading liquidity in response to forward-looking disclosure in earnings calls (***lead_dvol***)

dep. var: the directional change of average daily share turnover in the two weeks after the earnings call, i.e., trading days [2,9], compared to that in the two weeks prior to the earnings call, i.e., trading days [-9,-2], scaled by 100

	(1)	(2)	(3)	(4)	(5)
FLSs	0.13*** (0.05)				
FLS_nqt		0.17*** (0.06)		0.16*** (0.06)	0.01*** (0.002)
FLS_qt			0.12 (0.09)	0.07 (0.09)	0.002 (0.002)
sue_pos	3.64*** (0.43)	3.64*** (0.43)	3.67*** (0.43)	3.64*** (0.43)	3.64*** (0.43)
sue_neg	1.40*** (0.33)	1.40*** (0.33)	1.42*** (0.33)	1.40*** (0.33)	1.40*** (0.33)
earnvol	0.34*** (0.08)	0.33*** (0.08)	0.34*** (0.08)	0.33*** (0.08)	0.33*** (0.08)
loss	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
btm	-0.03*** (0.01)	-0.03*** (0.01)	-0.03*** (0.01)	-0.03*** (0.01)	-0.03*** (0.01)
size	-0.02*** (0.002)	-0.02*** (0.002)	-0.02*** (0.002)	-0.02*** (0.002)	-0.02*** (0.002)
retvol	-2.95*** (0.29)	-2.96*** (0.29)	-2.92*** (0.29)	-2.96*** (0.29)	-2.96*** (0.29)
guidance	-0.001 (0.01)	0.0000 (0.01)	0.0000 (0.01)	-0.0004 (0.01)	-0.0004 (0.01)
lsent	0.08*** (0.01)	0.08*** (0.01)	0.08*** (0.01)	0.08*** (0.01)	0.08*** (0.01)
year and ind FE	Y	Y	Y	Y	Y
Observations	99,780	99,780	99,780	99,780	99,780
Adjusted R^2	0.03	0.03	0.03	0.03	0.03

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Panel E: the improvement of analyst forecast accuracy for the next quarter to forward-looking disclosure in earnings calls (***fe_change***).

	dep. var: the improvement of analyst forecast accuracy for the next quarter, scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	0.27*** (0.04)				
FLS_nqt		0.25*** (0.05)		0.19*** (0.05)	0.01*** (0.002)
FLS_qt			0.46*** (0.08)	0.41*** (0.08)	0.01*** (0.002)
sue_pos	9.77*** (0.70)	9.78*** (0.70)	9.80*** (0.70)	9.77*** (0.70)	9.77*** (0.70)
sue_neg	9.91*** (0.53)	9.91*** (0.53)	9.93*** (0.53)	9.91*** (0.53)	9.91*** (0.53)
earnvol	-0.04 (0.08)	-0.04 (0.08)	-0.03 (0.08)	-0.04 (0.08)	-0.04 (0.08)
loss	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)
btm	0.06*** (0.01)	0.06*** (0.01)	0.06*** (0.01)	0.06*** (0.01)	0.06*** (0.01)
size	-0.01*** (0.002)	-0.01*** (0.002)	-0.01*** (0.002)	-0.01*** (0.002)	-0.01*** (0.002)
retvol	3.74*** (0.27)	3.75*** (0.27)	3.81*** (0.27)	3.76*** (0.27)	3.76*** (0.27)
guidance	0.001 (0.004)	0.003 (0.004)	0.001 (0.004)	0.0001 (0.004)	0.0001 (0.004)
lsent	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
year and ind FE	Y	Y	Y	Y	Y
Observations	97,767	97,767	97,767	97,767	97,767
Adjusted R^2	0.10	0.10	0.10	0.10	0.10
Note:	*p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.				

Panel F: the change of analysts' forecast disagreement to forward-looking disclosure in earnings calls (***analyst_dispersion_change***).

dep. var: the ratio of the standard deviation of analyst forecasts for quarterly earnings per share after the earnings call to the standard deviation of analyst forecasts before the earnings call

	(1)	(2)	(3)	(4)	(5)
FLSs	0.23*** (0.07)				
FLS_nqt		0.52*** (0.10)		0.58*** (0.10)	0.02*** (0.003)
FLS_qt			-0.20 (0.14)	-0.36*** (0.14)	-0.01*** (0.003)
sue_pos	5.00*** (0.66)	4.96*** (0.66)	5.06*** (0.66)	4.97*** (0.66)	4.97*** (0.66)
sue_neg	8.39*** (0.56)	8.37*** (0.56)	8.42*** (0.56)	8.37*** (0.56)	8.37*** (0.56)
earnvol	-0.38*** (0.10)	-0.40*** (0.10)	-0.36*** (0.10)	-0.39*** (0.10)	-0.39*** (0.10)
loss	-0.01 (0.01)	-0.02* (0.01)	-0.01 (0.01)	-0.02* (0.01)	-0.02* (0.01)
btm	-0.02* (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.02* (0.01)
size	-0.02*** (0.003)	-0.02*** (0.003)	-0.02*** (0.003)	-0.02*** (0.003)	-0.02*** (0.003)
retvol	-1.45*** (0.33)	-1.53*** (0.33)	-1.39*** (0.33)	-1.54*** (0.33)	-1.54*** (0.33)
guidance	-0.13*** (0.01)	-0.13*** (0.01)	-0.13*** (0.01)	-0.13*** (0.01)	-0.13*** (0.01)
lsent	0.01 (0.01)	0.01 (0.01)	0.004 (0.01)	0.01 (0.01)	0.01 (0.01)
year and ind FE	Y	Y	Y	Y	Y
Observations	88,029	88,029	88,029	88,029	88,029
Adjusted R^2	0.03	0.03	0.03	0.04	0.04

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Table 6 Implications of the Time Frame Trait of FLSs in Earnings Calls on the Firm's Future Profitability Change

Panel A: Implications of the time frame trait of FLSs in earnings calls on the firm's unexpected earnings the next four quarters.

Dep.var	d_earn1	d_earn2	d_earn3	d_earn4
FLS_nqt	0.17*** (0.04)	0.16*** (0.03)	0.13*** (0.04)	0.20*** (0.06)
FLS_qt	-0.002 (0.03)	0.03 (0.03)	0.005 (0.03)	0.05* (0.03)
levq	0.41 (0.26)	0.16 (0.22)	0.02 (0.24)	-0.03 (0.34)
btm	-0.23** (0.10)	-0.15 (0.10)	-0.15 (0.11)	-0.43*** (0.13)
opcycle	-0.04 (0.05)	-0.05 (0.06)	-0.07 (0.08)	-0.34*** (0.07)
capint	-0.34* (0.19)	-0.48*** (0.17)	-0.56*** (0.19)	-1.23*** (0.27)
ibqearn	-8.48*** (1.31)	-9.27*** (1.60)	-10.68*** (1.90)	-8.25 (8.20)
size	-0.09*** (0.02)	-0.10*** (0.02)	-0.12*** (0.03)	-0.26*** (0.06)
ior	-0.81*** (0.13)	-0.72*** (0.12)	-0.84*** (0.13)	-1.51*** (0.23)
cfovol	10.39*** (3.07)	9.00*** (2.90)	6.66* (3.41)	13.26*** (3.77)
earnvol	58.01*** (3.59)	53.84*** (3.73)	52.21*** (3.84)	26.25*** (4.41)
pers	-0.01 (0.08)	0.03 (0.07)	0.14 (0.09)	0.13 (0.10)
pred	-0.21*** (0.07)	-0.16** (0.07)	-0.13 (0.09)	0.32*** (0.11)
guidance	-0.22*** (0.04)	-0.23*** (0.05)	-0.16*** (0.05)	-0.34*** (0.08)
lsent	0.16* (0.09)	-0.01 (0.08)	0.01 (0.09)	0.22 (0.13)
year, qtr, sic2 FE	Y	Y	Y	Y
Observations	69,541	69,307	69,020	68,701
Adjusted R^2	0.19	0.20	0.18	0.13

Note: *p<0.1**p<0.05***p<0.01 FLS measures are standardized. Definition of variables are in Appendix A.

Panel B: Implications of the time frame trait of FLSs in earnings calls on the firm's unexpected earnings the next quarter.

	dep. var: absolute value of the change in quarterly earnings for the next quarter on a year to year basis, scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	3.14*** (0.70)				
FLS_nqt		5.01*** (1.08)		5.01*** (1.11)	0.17*** (0.04)
FLS_qt			1.35 (0.99)	-0.06 (1.03)	-0.002 (0.03)
levq	0.40 (0.26)	0.41 (0.26)	0.42 (0.26)	0.41 (0.26)	0.41 (0.26)
btm	-0.23** (0.10)	-0.23** (0.10)	-0.20** (0.10)	-0.23** (0.10)	-0.23** (0.10)
opcycle	-0.04 (0.05)	-0.04 (0.05)	-0.05 (0.05)	-0.04 (0.05)	-0.04 (0.05)
capint	-0.37* (0.19)	-0.34* (0.19)	-0.34* (0.19)	-0.34* (0.19)	-0.34* (0.19)
ibqearn	-8.53*** (1.30)	-8.48*** (1.31)	-8.67*** (1.29)	-8.48*** (1.31)	-8.48*** (1.31)
size	-0.09*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)	-0.09*** (0.02)
ior	-0.83*** (0.13)	-0.81*** (0.13)	-0.82*** (0.13)	-0.81*** (0.13)	-0.81*** (0.13)
cfovol	10.52*** (3.08)	10.39*** (3.07)	10.64*** (3.09)	10.39*** (3.07)	10.39*** (3.07)
earnvol	58.00*** (3.59)	58.01*** (3.60)	58.21*** (3.58)	58.01*** (3.59)	58.01*** (3.59)
pers	-0.01 (0.08)	-0.01 (0.08)	-0.02 (0.08)	-0.01 (0.08)	-0.01 (0.08)
pred	-0.20*** (0.07)	-0.21*** (0.07)	-0.20*** (0.08)	-0.21*** (0.07)	-0.21*** (0.07)
guidance	-0.24*** (0.05)	-0.22*** (0.04)	-0.21*** (0.04)	-0.22*** (0.04)	-0.22*** (0.04)
lsent	0.18** (0.09)	0.16* (0.09)	0.14 (0.09)	0.16* (0.09)	0.16* (0.09)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	69,541	69,541	69,541	69,541	69,541
Adjusted R^2	0.19	0.19	0.19	0.19	0.19
Note:	*p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.				

Panel C: Implications of the time frame trait of FLSs in earnings calls on the firm's unexpected earnings the next second quarter

	Dep Var: absolute value of the change in quarterly earnings for the next second quarter on a year-to-year basis, scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	3.36*** (0.60)				
FLS_nqt		4.76*** (0.89)		4.57*** (0.92)	0.16*** (0.03)
FLS_qt			2.58** (1.01)	1.28 (1.05)	0.03 (0.03)
levq	0.16 (0.22)	0.17 (0.22)	0.17 (0.22)	0.16 (0.22)	0.16 (0.22)
btm	-0.14 (0.10)	-0.14 (0.10)	-0.12 (0.10)	-0.15 (0.10)	-0.15 (0.10)
opcycle	-0.05 (0.06)	-0.05 (0.06)	-0.06 (0.06)	-0.05 (0.06)	-0.05 (0.06)
capint	-0.49*** (0.17)	-0.47*** (0.17)	-0.48*** (0.17)	-0.48*** (0.17)	-0.48*** (0.17)
ibqearn	-9.31*** (1.60)	-9.27*** (1.60)	-9.45*** (1.61)	-9.27*** (1.60)	-9.27*** (1.60)
size	-0.10*** (0.02)	-0.10*** (0.02)	-0.09*** (0.02)	-0.10*** (0.02)	-0.10*** (0.02)
ior	-0.74*** (0.12)	-0.72*** (0.12)	-0.74*** (0.12)	-0.72*** (0.12)	-0.72*** (0.12)
cfovol	9.08*** (2.91)	8.97*** (2.90)	9.22*** (2.92)	9.00*** (2.90)	9.00*** (2.90)
earnvol	53.83*** (3.73)	53.87*** (3.73)	54.03*** (3.72)	53.84*** (3.73)	53.84*** (3.73)
pers	0.03 (0.07)	0.03 (0.07)	0.02 (0.07)	0.03 (0.07)	0.03 (0.07)
pred	-0.16** (0.07)	-0.16** (0.07)	-0.15** (0.07)	-0.16** (0.07)	-0.16** (0.07)
guidance	-0.23*** (0.05)	-0.22*** (0.05)	-0.22*** (0.05)	-0.23*** (0.05)	-0.23*** (0.05)
lsent	0.01 (0.08)	-0.02 (0.08)	-0.03 (0.08)	-0.01 (0.08)	-0.01 (0.08)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	69,307	69,307	69,307	69,307	69,307
Adjusted R^2	0.20	0.20	0.20	0.20	0.20

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Panel D: Implications of the time frame trait of FLSs in earnings calls on the firm's unexpected earnings the next third quarter

	Dep Var: absolute value of the change in quarterly earnings for the next third quarter on a year-to-year basis, scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	2.54*** (0.75)				
FLS_nqt		3.96*** (1.18)		3.93*** (1.22)	0.13*** (0.04)
FLS_qt			1.30 (1.02)	0.19 (1.07)	0.005 (0.03)
levq	0.01 (0.24)	0.02 (0.24)	0.02 (0.24)	0.02 (0.24)	0.02 (0.24)
btm	-0.14 (0.11)	-0.15 (0.11)	-0.13 (0.11)	-0.15 (0.11)	-0.15 (0.11)
opcycle	-0.07 (0.08)	-0.07 (0.08)	-0.08 (0.08)	-0.07 (0.08)	-0.07 (0.08)
capint	-0.58*** (0.19)	-0.56*** (0.19)	-0.56*** (0.19)	-0.56*** (0.19)	-0.56*** (0.19)
ibqearn	-10.73*** (1.89)	-10.68*** (1.90)	-10.84*** (1.88)	-10.68*** (1.90)	-10.68*** (1.90)
size	-0.12*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)	-0.12*** (0.03)
ior	-0.86*** (0.13)	-0.84*** (0.13)	-0.85*** (0.13)	-0.84*** (0.13)	-0.84*** (0.13)
cfovol	6.76** (3.43)	6.66* (3.42)	6.85** (3.43)	6.66* (3.41)	6.66* (3.41)
earnvol	52.21*** (3.84)	52.22*** (3.84)	52.38*** (3.83)	52.21*** (3.84)	52.21*** (3.84)
pers	0.13 (0.09)	0.14 (0.09)	0.13 (0.09)	0.14 (0.09)	0.14 (0.09)
pred	-0.13 (0.09)	-0.13 (0.09)	-0.12 (0.09)	-0.13 (0.09)	-0.13 (0.09)
guidance	-0.17*** (0.05)	-0.16*** (0.05)	-0.16*** (0.05)	-0.16*** (0.05)	-0.16*** (0.05)
lsent	0.03 (0.09)	0.01 (0.09)	-0.005 (0.09)	0.01 (0.09)	0.01 (0.09)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	69,020	69,020	69,020	69,020	69,020
Adjusted R^2	0.18	0.18	0.18	0.18	0.18

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Panel E: Implications of the time frame trait of FLSs in earnings calls on the firm's unexpected earnings the next fourth quarter

	Dep Var: absolute value of the change in quarterly earnings for the next fourth quarter on a year-to-year basis, scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	4.33*** (1.15)				
FLS_nqt		6.06*** (1.70)		5.78*** (1.69)	0.20*** (0.06)
FLS_qt			3.49*** (1.23)	1.85* (1.12)	0.05* (0.03)
levq	-0.03 (0.34)	-0.03 (0.34)	-0.02 (0.34)	-0.03 (0.34)	-0.03 (0.34)
btm	-0.43*** (0.13)	-0.43*** (0.13)	-0.40*** (0.13)	-0.43*** (0.13)	-0.43*** (0.13)
opcycle	-0.34*** (0.07)	-0.34*** (0.07)	-0.35*** (0.07)	-0.34*** (0.07)	-0.34*** (0.07)
capint	-1.25*** (0.27)	-1.22*** (0.27)	-1.23*** (0.28)	-1.23*** (0.27)	-1.23*** (0.27)
ibqearn	-8.29 (8.19)	-8.25 (8.20)	-8.48 (8.15)	-8.25 (8.20)	-8.25 (8.20)
size	-0.26*** (0.06)	-0.26*** (0.06)	-0.25*** (0.05)	-0.26*** (0.06)	-0.26*** (0.06)
ior	-1.52*** (0.23)	-1.50*** (0.23)	-1.53*** (0.23)	-1.51*** (0.23)	-1.51*** (0.23)
cfovol	13.36*** (3.79)	13.22*** (3.77)	13.55*** (3.81)	13.26*** (3.77)	13.26*** (3.77)
earnvol	26.24*** (4.41)	26.29*** (4.42)	26.50*** (4.43)	26.25*** (4.41)	26.25*** (4.41)
pers	0.13 (0.10)	0.13 (0.10)	0.12 (0.10)	0.13 (0.10)	0.13 (0.10)
pred	0.32*** (0.11)	0.31*** (0.11)	0.33*** (0.11)	0.32*** (0.11)	0.32*** (0.11)
guidance	-0.35*** (0.08)	-0.33*** (0.08)	-0.33*** (0.08)	-0.34*** (0.08)	-0.34*** (0.08)
lsent	0.24* (0.14)	0.20 (0.13)	0.19 (0.13)	0.22 (0.13)	0.22 (0.13)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	68,701	68,701	68,701	68,701	68,701
Adjusted R^2	0.13	0.13	0.13	0.13	0.13

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Table 7 Implications of the Time Frame Trait of FLSs in Earnings Calls on the Firm's Future Accrual-based Earnings Management

Panel A: Implications of the time frame trait of FLSs in earnings calls on the accrual-based earnings management next quarter.

	dep. var: absolute value of scaled discretionary accruals next quarter, scaled by 100 (Five different methods for discretionary accruals, detailed in Appendix A				
	em_healy	em_industry	em_deangelo	em_jones	em_mod_jones
FLS_nqt	0.08*** (0.02)	0.08*** (0.02)	0.13*** (0.03)	0.09*** (0.02)	0.09*** (0.02)
FLS_qt	0.01 (0.02)	0.01 (0.02)	0.03 (0.03)	0.02 (0.02)	0.02 (0.02)
levq	-0.81*** (0.17)	-0.81*** (0.17)	-1.10*** (0.23)	-0.71*** (0.14)	-0.53*** (0.14)
btm	-0.31*** (0.09)	-0.31*** (0.09)	-0.64*** (0.11)	-0.47*** (0.07)	-0.38*** (0.07)
opcycle	0.13* (0.08)	0.13* (0.08)	0.20* (0.10)	0.10* (0.05)	0.11** (0.06)
capint	-0.89*** (0.20)	-0.89*** (0.20)	-0.96*** (0.26)	-0.81*** (0.16)	-0.87*** (0.16)
ibqearn	-0.76 (0.51)	-0.76 (0.51)	0.97 (0.92)	-0.46 (0.44)	-0.67 (0.47)
size	-0.22*** (0.02)	-0.22*** (0.02)	-0.34*** (0.03)	-0.24*** (0.02)	-0.23*** (0.02)
ior	-0.32*** (0.12)	-0.32*** (0.12)	-0.34** (0.16)	-0.44*** (0.10)	-0.33*** (0.10)
cfovol	25.96*** (2.35)	25.96*** (2.35)	44.57*** (3.76)	20.65*** (2.00)	21.66*** (2.03)
earnvol	-1.60 (1.40)	-1.60 (1.40)	-4.42** (2.00)	-0.76 (1.19)	-0.32 (1.24)
pers	0.09** (0.05)	0.09** (0.05)	0.17*** (0.06)	0.01 (0.04)	0.05 (0.04)
pred	0.13*** (0.04)	0.13*** (0.04)	0.24*** (0.06)	0.11*** (0.03)	0.10*** (0.04)
guidance	-0.20*** (0.06)	-0.20*** (0.06)	-0.21*** (0.08)	-0.13*** (0.04)	-0.17*** (0.05)
lsent	0.01 (0.08)	0.01 (0.08)	0.08 (0.11)	0.01 (0.06)	-0.01 (0.07)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	38,341	38,341	38,312	38,341	38,341
Adjusted R^2	0.21	0.21	0.20	0.20	0.20

Note: *p<0.1**p<0.05***p<0.01 FLS measures are standardized. Definition of variables are in Appendix A.

Panel B: Implications of the time frame trait of FLSs in earnings calls on the accrual-based earnings management next quarter.

	dep. var: absolute value of scaled discretionary accruals next quarter (Healy, 1985) (***em_healy***), scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	1.53*** (0.53)				
FLS_nqt		2.32*** (0.70)		2.27*** (0.69)	0.08*** (0.02)
FLS_qt			0.89 (0.83)	0.29 (0.81)	0.01 (0.02)
levq	-0.81*** (0.17)	-0.81*** (0.17)	-0.80*** (0.17)	-0.81*** (0.17)	-0.81*** (0.17)
btm	-0.31*** (0.09)	-0.31*** (0.09)	-0.30*** (0.09)	-0.31*** (0.09)	-0.31*** (0.09)
opcycle	0.13* (0.08)	0.13* (0.08)	0.13* (0.08)	0.13* (0.08)	0.13* (0.08)
capint	-0.90*** (0.20)	-0.89*** (0.20)	-0.89*** (0.20)	-0.89*** (0.20)	-0.89*** (0.20)
ibqearn	-0.78 (0.51)	-0.76 (0.51)	-0.83 (0.51)	-0.76 (0.51)	-0.76 (0.51)
size	-0.21*** (0.02)	-0.21*** (0.02)	-0.21*** (0.02)	-0.22*** (0.02)	-0.22*** (0.02)
ior	-0.33*** (0.12)	-0.32*** (0.12)	-0.33*** (0.12)	-0.32*** (0.12)	-0.32*** (0.12)
cfovol	26.04*** (2.35)	25.95*** (2.36)	26.09*** (2.34)	25.96*** (2.35)	25.96*** (2.35)
earnvol	-1.60 (1.40)	-1.59 (1.41)	-1.47 (1.41)	-1.60 (1.40)	-1.60 (1.40)
pers	0.09** (0.05)	0.09** (0.05)	0.09** (0.05)	0.09** (0.05)	0.09** (0.05)
pred	0.13*** (0.04)	0.13*** (0.04)	0.13*** (0.04)	0.13*** (0.04)	0.13*** (0.04)
guidance	-0.20*** (0.06)	-0.19*** (0.06)	-0.19*** (0.06)	-0.20*** (0.06)	-0.20*** (0.06)
lsent	0.02 (0.08)	0.002 (0.08)	-0.01 (0.08)	0.01 (0.08)	0.01 (0.08)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	38,341	38,341	38,341	38,341	38,341
Adjusted R^2	0.21	0.21	0.21	0.21	0.21
Note:	*p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.				

Panel C: Implications of the time frame trait of FLSs in earnings calls on the accrual-based earnings management next quarter.

	dep. var: absolute value of scaled discretionary accruals next quarter (Dechow et al., 1995) (***em_industry***), scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	1.53*** (0.53)				
FLS_nqt		2.32*** (0.70)		2.27*** (0.69)	0.08*** (0.02)
FLS_qt			0.89 (0.83)	0.29 (0.81)	0.01 (0.02)
levq	-0.81*** (0.17)	-0.81*** (0.17)	-0.80*** (0.17)	-0.81*** (0.17)	-0.81*** (0.17)
btm	-0.31*** (0.09)	-0.31*** (0.09)	-0.30*** (0.09)	-0.31*** (0.09)	-0.31*** (0.09)
opcycle	0.13* (0.08)	0.13* (0.08)	0.13* (0.08)	0.13* (0.08)	0.13* (0.08)
capint	-0.90*** (0.20)	-0.89*** (0.20)	-0.89*** (0.20)	-0.89*** (0.20)	-0.89*** (0.20)
ibqearn	-0.78 (0.51)	-0.76 (0.51)	-0.83 (0.51)	-0.76 (0.51)	-0.76 (0.51)
size	-0.21*** (0.02)	-0.21*** (0.02)	-0.21*** (0.02)	-0.22*** (0.02)	-0.22*** (0.02)
ior	-0.33*** (0.12)	-0.32*** (0.12)	-0.33*** (0.12)	-0.32*** (0.12)	-0.32*** (0.12)
cfovol	26.04*** (2.35)	25.95*** (2.36)	26.09*** (2.34)	25.96*** (2.35)	25.96*** (2.35)
earnvol	-1.60 (1.40)	-1.59 (1.41)	-1.47 (1.41)	-1.60 (1.40)	-1.60 (1.40)
pers	0.09** (0.05)	0.09** (0.05)	0.09** (0.05)	0.09** (0.05)	0.09** (0.05)
pred	0.13*** (0.04)	0.13*** (0.04)	0.13*** (0.04)	0.13*** (0.04)	0.13*** (0.04)
guidance	-0.20*** (0.06)	-0.19*** (0.06)	-0.19*** (0.06)	-0.20*** (0.06)	-0.20*** (0.06)
lsent	0.02 (0.08)	0.002 (0.08)	-0.01 (0.08)	0.01 (0.08)	0.01 (0.08)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	38,341	38,341	38,341	38,341	38,341
Adjusted R^2	0.21	0.21	0.21	0.21	0.21
Note:	*p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.				

Panel D: Implications of the time frame trait of FLSs in earnings calls on the accrual-based earnings management next quarter.

	dep. var: absolute value of scaled discretionary accruals next quarter (DeAngelo, 1986) (***em_deangelo***), scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	2.73*** (0.65)				
FLS_nqt		3.88*** (0.85)		3.72*** (0.86)	0.13*** (0.03)
FLS_qt			2.08* (1.14)	1.10 (1.14)	0.03 (0.03)
levq	-1.10*** (0.23)	-1.09*** (0.23)	-1.08*** (0.23)	-1.10*** (0.23)	-1.10*** (0.23)
btm	-0.64*** (0.11)	-0.64*** (0.11)	-0.62*** (0.11)	-0.64*** (0.11)	-0.64*** (0.11)
opcycle	0.20* (0.10)	0.20* (0.10)	0.19* (0.10)	0.20* (0.10)	0.20* (0.10)
capint	-0.98*** (0.26)	-0.95*** (0.26)	-0.96*** (0.26)	-0.96*** (0.26)	-0.96*** (0.26)
ibqearn	0.94 (0.92)	0.97 (0.92)	0.84 (0.91)	0.97 (0.92)	0.97 (0.92)
size	-0.34*** (0.03)	-0.34*** (0.03)	-0.33*** (0.03)	-0.34*** (0.03)	-0.34*** (0.03)
ior	-0.35** (0.16)	-0.34** (0.16)	-0.36** (0.16)	-0.34** (0.16)	-0.34** (0.16)
cfovol	44.68*** (3.76)	44.52*** (3.76)	44.78*** (3.75)	44.57*** (3.76)	44.57*** (3.76)
earnvol	-4.42** (2.00)	-4.39** (2.00)	-4.21** (2.00)	-4.42** (2.00)	-4.42** (2.00)
pers	0.17*** (0.06)	0.17*** (0.06)	0.16** (0.06)	0.17*** (0.06)	0.17*** (0.06)
pred	0.24*** (0.06)	0.24*** (0.06)	0.24*** (0.06)	0.24*** (0.06)	0.24*** (0.06)
guidance	-0.21*** (0.08)	-0.20*** (0.08)	-0.20*** (0.08)	-0.21*** (0.08)	-0.21*** (0.08)
lsent	0.09 (0.11)	0.07 (0.11)	0.06 (0.11)	0.08 (0.11)	0.08 (0.11)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	38,312	38,312	38,312	38,312	38,312
Adjusted R^2	0.20	0.20	0.20	0.20	0.20

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Panel E: Implications of the time frame trait of FLSs in earnings calls on the accrual-based earnings management next quarter.

	dep. var: absolute value of scaled discretionary accruals next quarter (Jones, 1991) (***em_jones***), scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	2.08*** (0.38)				
FLS_nqt		2.88*** (0.50)		2.73*** (0.51)	0.09*** (0.02)
FLS_qt			1.71** (0.70)	0.99 (0.71)	0.02 (0.02)
levq	-0.71*** (0.15)	-0.70*** (0.14)	-0.69*** (0.15)	-0.71*** (0.14)	-0.71*** (0.14)
btm	-0.47*** (0.07)	-0.47*** (0.07)	-0.46*** (0.07)	-0.47*** (0.07)	-0.47*** (0.07)
opcycle	0.10* (0.05)	0.10* (0.05)	0.10* (0.05)	0.10* (0.05)	0.10* (0.05)
capint	-0.82*** (0.16)	-0.80*** (0.16)	-0.81*** (0.16)	-0.81*** (0.16)	-0.81*** (0.16)
ibqearn	-0.48 (0.44)	-0.46 (0.44)	-0.56 (0.44)	-0.46 (0.44)	-0.46 (0.44)
size	-0.24*** (0.02)	-0.24*** (0.02)	-0.24*** (0.02)	-0.24*** (0.02)	-0.24*** (0.02)
ior	-0.44*** (0.10)	-0.43*** (0.10)	-0.45*** (0.10)	-0.44*** (0.10)	-0.44*** (0.10)
cfovol	20.72*** (2.00)	20.61*** (2.00)	20.81*** (1.99)	20.65*** (2.00)	20.65*** (2.00)
earnvol	-0.76 (1.19)	-0.73 (1.19)	-0.60 (1.19)	-0.76 (1.19)	-0.76 (1.19)
pers	0.01 (0.04)	0.01 (0.04)	0.004 (0.04)	0.01 (0.04)	0.01 (0.04)
pred	0.11*** (0.03)	0.11*** (0.03)	0.11*** (0.03)	0.11*** (0.03)	0.11*** (0.03)
guidance	-0.14*** (0.05)	-0.13*** (0.05)	-0.13*** (0.05)	-0.13*** (0.04)	-0.13*** (0.04)
lsent	0.02 (0.06)	0.001 (0.06)	-0.003 (0.06)	0.01 (0.06)	0.01 (0.06)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	38,341	38,341	38,341	38,341	38,341
Adjusted R^2	0.20	0.20	0.20	0.20	0.20

Note: *p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.

Panel F: Implications of the time frame trait of FLSs in earnings calls on the accrual-based earnings management next quarter.

	dep. var: absolute value of scaled discretionary accruals next quarter (Dechow et al., 1995) (***em_mod_jones***), scaled by 100				
	(1)	(2)	(3)	(4)	(5)
FLSs	1.82*** (0.39)				
FLS_nqt		2.61*** (0.50)		2.51*** (0.51)	0.09*** (0.02)
FLS_qt			1.35* (0.74)	0.69 (0.75)	0.02 (0.02)
levq	-0.53*** (0.14)	-0.53*** (0.14)	-0.52*** (0.14)	-0.53*** (0.14)	-0.53*** (0.14)
btm	-0.38*** (0.07)	-0.38*** (0.07)	-0.37*** (0.07)	-0.38*** (0.07)	-0.38*** (0.07)
opcycle	0.11** (0.05)	0.11** (0.06)	0.11** (0.05)	0.11** (0.06)	0.11** (0.06)
capint	-0.88*** (0.16)	-0.86*** (0.16)	-0.87*** (0.16)	-0.87*** (0.16)	-0.87*** (0.16)
ibqearn	-0.69 (0.48)	-0.67 (0.48)	-0.76 (0.48)	-0.67 (0.47)	-0.67 (0.47)
size	-0.23*** (0.02)	-0.23*** (0.02)	-0.23*** (0.02)	-0.23*** (0.02)	-0.23*** (0.02)
ior	-0.34*** (0.10)	-0.33*** (0.10)	-0.34*** (0.10)	-0.33*** (0.10)	-0.33*** (0.10)
cfovol	21.73*** (2.03)	21.63*** (2.03)	21.80*** (2.02)	21.66*** (2.03)	21.66*** (2.03)
earnvol	-0.33 (1.24)	-0.30 (1.24)	-0.18 (1.24)	-0.32 (1.24)	-0.32 (1.24)
pers	0.05 (0.04)	0.05 (0.04)	0.04 (0.04)	0.05 (0.04)	0.05 (0.04)
pred	0.10*** (0.04)	0.10*** (0.04)	0.10*** (0.04)	0.10*** (0.04)	0.10*** (0.04)
guidance	-0.18*** (0.05)	-0.17*** (0.05)	-0.17*** (0.05)	-0.17*** (0.05)	-0.17*** (0.05)
lsent	-0.001 (0.07)	-0.02 (0.06)	-0.03 (0.07)	-0.01 (0.07)	-0.01 (0.07)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	38,341	38,341	38,341	38,341	38,341
Adjusted R^2	0.20	0.20	0.20	0.20	0.20
Note:	*p<0.1**p<0.05***p<0.01 Column 5 FLS measures are standardized. Definition of variables are in Appendix A.				

Table 8 Implications of the Time Frame Trait of FLSs in Earnings Calls on the Firm's Next Quarter's Capital Investment

	dep. var: capital investment scaled by the beginning value of PPE in the next quarter, scaled by 100, detailed in Appendix A				
	(1)	(2)	(3)	(4)	(5)
FLSs	1.88** (0.92)				
FLS_nqt		0.73 (1.19)		-0.02 (1.19)	-0.001 (0.04)
FLS_qt			5.11*** (1.69)	5.11*** (1.70)	0.12*** (0.04)
logatq	-0.27*** (0.05)	-0.27*** (0.05)	-0.27*** (0.05)	-0.27*** (0.05)	-0.27*** (0.05)
levq	-1.92*** (0.35)	-1.91*** (0.35)	-1.92*** (0.35)	-1.92*** (0.35)	-1.92*** (0.35)
q	0.30*** (0.03)	0.30*** (0.03)	0.30*** (0.03)	0.30*** (0.03)	0.30*** (0.03)
dividendq	-1.36*** (0.13)	-1.37*** (0.13)	-1.37*** (0.13)	-1.37*** (0.13)	-1.37*** (0.13)
cashq	4.87*** (0.42)	4.89*** (0.42)	4.91*** (0.42)	4.91*** (0.42)	4.91*** (0.42)
cashflowq	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.04)
saleq	0.16*** (0.02)	0.16*** (0.02)	0.16*** (0.02)	0.16*** (0.02)	0.16*** (0.02)
rated	-0.30** (0.15)	-0.30** (0.15)	-0.31** (0.15)	-0.31** (0.15)	-0.31** (0.15)
guidance	0.20* (0.12)	0.21* (0.12)	0.18 (0.12)	0.18 (0.12)	0.18 (0.12)
lsent	1.34*** (0.14)	1.30*** (0.14)	1.36*** (0.14)	1.36*** (0.14)	1.36*** (0.14)
year, qtr, sic2 FE	Y	Y	Y	Y	Y
Observations	83,746	83,746	83,746	83,746	83,746
Adjusted R^2	0.20	0.20	0.20	0.20	0.20

Note: *p<0.1**p<0.05***p<0.01 In column 5, FLS measures are standardized. Definitions of variables are in Appendix A.