Does ESG Decrease Information Asymmetry? Evidence from Earnings Conference Call Tones and Subsequent Returns

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Abstract

This paper examines how firm ESG performance affects the managerial and analyst tones in quarterly earnings conference calls, and its incremental effect on post-earnings returns. We find that high ESG firms exhibit more optimistic management tone after controlling for quarterly financial performance metrics. Tone difference in conference calls between managers and analysts predicts negative abnormal returns in the three-day window around earnings announcements. In the 60-day period post earnings announcement, low ESG firms exhibit return reversals related to tone difference, but high ESG firms exhibit neither drift nor reversal. These results are consistent with reduced information asymmetry in firms with investment in ESG. Our findings are not solely attributable to governance, which indicates that environmental and social initiatives, as well as governance, add to the quality of the firm's information environment.

Keywords: Earnings Conference Calls, Post-Earnings Announcement Drifts, Corporate Social Responsibility, ESG Performance, Textual Analysis.

Date: 2 April 2021

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1. Introduction

This paper explores the relation between firm-level Environmental, Social and Governance (ESG) scores and the information asymmetry between the market and firm management. The analysis focuses on the pricing efficiency of the soft information in earnings conference calls and the variation of firms' ESG scores. Conference calls provide management with an opportunity to explain the drivers of the firm's earnings, as well as present an outlook relating to the firm's prospects. Both analysts and investors perceive these calls as a source of material information about the firm (e.g. Frankel et al., 1999). In addition to the 'hard' data presented in these calls, the tone ('soft information') of conference calls provides incremental information that is associated with contemporaneous and future returns (Price et al., 2012; Huang et al., 2014; Druz et al., 2020) and resolution of uncertainty about firm value (Borochin et al. 2017). Given that soft information is more difficult to process (e.g. Blau et al., 2015), the tone of firms with lower information asymmetry should be priced more efficiently than those with high information asymmetry.

High ESG firms (i.e. firms with high ESG scores) tend to exhibit characteristics associated with rich information environments. For example, Kim et al. (2012) and Cui et al. (2018) document that high ESG firms have lower levels of earnings management and analyst forecast dispersion, and higher levels of market liquidity than low ESG firms. For firms with low levels of information asymmetry, conference calls are less likely to reveal unexpected value-relevant information. Moreover, transparent information environments are likely to lead to more trust toward management (e.g. Hope and Wang, 2018). However, management has the opportunity to artificially control the tone in conference calls (Huang et al., 2014), which could mislead investors and lead to inefficient price responses. For example, Blau et al. (2015) show that short-sellers profit from trading on 'inflated' conference call language by management that is unwarrantedly positive given the firms' underlying fundamentals. Additionally, Flugum and Souther (2020) argue that high ESG firms are able to deflect criticism of poor firm performance by focusing on more positive 'stakeholder' objectives. Thus,

particularly when firm performance has failed to meet expectations, the price response following conference calls may be less efficient.

We posit that the differences in information asymmetry between high and low ESG firms should manifest in how the market incorporates firms' conference call tone into stock prices, similar to how earnings themselves (hard information) are impounded into prices (Bartov and Li, 2015). Construal of call tone may be especially susceptible to the information environment of the firm, as Blau et al. (2015) and Druz et al. (2015) show sophisticated investors interpret tone more accurately. Thus, lower information asymmetry could better the overall market's ability to properly price call tone. Based on the assumption high ESG firms foster a more transparent information environment, we hypothesize that investors can more easily interpret the soft information provided by management during the call. We argue that, if ESG scores are positively related to the transparency and richness of the firm's information environment, then the market reaction to conference call tones will be both more immediate and accurate in high ESG firms than in firms with low ESG scores.

Our evidence suggests that low ESG firms' call tone is not accurately impounded into their stock prices, which, depending on the levels of call tone and standardized unexpected earnings, results in either price drift or reversal. On the contrary, while high ESG firms have higher call positivity in the introductory part of the call and larger differences between the positivity of managers and analysts than low ESG firms, the market quickly incorporates high ESG firms' call tones and their stock prices do not exhibit drift nor reversals. We interpret these results as evidence that ESG scores have a negative relation with information asymmetry between management and investors.

The analysis begins by finding the number of positive and negative financial words (as defined by Loughran & McDonald, 2011) in a large sample of conference call transcripts and using them to compute a measure of positivity, or 'Tone.' [1] Tone is calculated separately for management's

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[1] The typical conference call can be divided into two distinct sections. First is the introductory or presentation portion in which management speaks uninterrupted regarding the firm's earnings and the firm in general. The introductory portion is followed by the question and answer (Q&A) or discussion section where analysts actively interact with management.

introductory portion of the call, management's discussion in the Q&A portion of the call, and analysts' discussion in the Q&A part of the call. Using regression estimations, we find evidence that ESG scores are positively related to the tone of management in the introductory portion of the conference call. Additionally, the difference in tone between the managers' introduction portion and the analysts' tone in the question and answer (Q&A) section of the call is larger for high ESG firms. However, there is no evidence that the interaction between ESG scores and SUE affects managerial tone, which is not supportive of Flugum and Souther's (2020) conjecture that high ESG firms obfuscate poor financial performance by focusing on more positive stakeholder initiatives. Thus, the positive relation between ESG score and introductory management tone could be the result of the inherent positive ESG initiatives a high ESG firm would be engaged in. In further analyses, we show analysts typically express more negative sentiment towards firms that engage in environmental and social initiatives (ES) that do not have obvious benefits to shareholders specifically, indicating perceived agency costs (e.g. Ioannou & Serafeim, 2015; Adhikari, 2016; Ferrell et al., 2017) or higher information processing costs (Griffin et al., 2020).

We then turn our analysis towards determining how differences in ESG scores impacts the incorporation of conference call tone into stock prices. We focus on the cumulative abnormal returns in the 3-day window (CAR[-1,+1]) around the earnings announcement and conference call and in the following 60-day window (CAR[+2,+60]). Consistent with the ESG scores proxying for firm-level information transparency, we find that investors on average efficiently incorporate tone difference into the price of high ESG firms, but not low ESG firms, in the 3-day announcement/conference call window. Additionally, the results show that low ESG firms with high tone differences exhibit reversals during the 60-day post-call window. High ESG firms, however, do not experience any significant drift nor reversals following the call. The relatively positive tone of management of high ESG firms during calls is quickly and accurately incorporated into the stock price. Taken altogether, our findings support the notion that, while the management of high ESG firms are more positive than analysts in their

conference calls, the information asymmetry in these firms is lower than their low ESG counterparts.

In robustness checks, we examine if our main results are driven by the governance component of the ESG score. We do this in two ways. First, we directly control for firm governance following Pedersen et al. (2020). Second, we omit governance form the ESG score and reconstitute it using only the constituents associated with environmental and social performance (an 'ES' score). We document that low ESG firms continue to exhibit 60-day reversals after controlling for governance. We also demonstrate, after ranking firms on the basis of ES scores, that return reversals remain in firms with low environmental and social scores. Thus, ES is important to the information environment and our original findings are not singularly attributable to aspects related to governance as found in prior literature (e.g. Jo & Harjoto, 2011, 2012; Nofsinger et al., 2019; Pedersen et al., 2021).

The contributions of this paper are threefold. Firstly, we build upon the study of conference call tones and post-earnings announcement returns by investigating the roles of management and analyst tones and their relation to firm-level ESG scores. Secondly, we contribute to the ESG literature by demonstrating the information environment of firms with high ESG scores is more transparent in conference calls. This reduced information asymmetry results in better pricing of soft information and eliminates subsequent drift or reversal. Our findings complement those of Bartov and Li (2015), who document that investors price hard information more accurately in higher ESG firms. Lastly, we demonstrate that environmental and social scores provide additional insight about the firm's information environment beyond the governance score.

2. Literature Review and Hypothesis Development

2.1 Environmental, Social and Governance (ESG) and Firm Performance

Recent research has examined the channels through which ESG (or corporate social responsibility, CSR, which is often used interchangeably with ESG) adds value to firm performance (e.g., El Ghoul et al., 2011; Kim et al., 2014; Lins et al., 2017; Albuquerque et al., 2019; Hoepner et

al., 2019). In addition to financial performance, several studies investigate the relationship between sustainability and a firm's information environment. For example, extant literature finds that firms with higher levels of ESG are less likely to engage in earnings management (Chih et al., 2008; Kim et al., 2012; Rezaee & Tuo, 2019), and thus stated earnings are a more transparent reflection of firm performance. Wans (2020) finds that high CSR firms are less likely to restate earnings, and exhibit fewer consequences for doing so. Lower levels of information asymmetry, resulting in lower bid-ask spreads or less analyst disagreement (Cui et al., 2018) have similarly been documented in firms with higher levels of ESG.

Moreover, firms with higher levels of sustainability typically employ conservative accounting practices (Burke et al., 2020; Guo et al., 2020), in order to credibly commit to acting in the interests of stakeholders. On the whole, the prior literature relating ESG to financial reporting indicates a positive relationship between ESG and a transparent information environment. Managers of firms with higher levels of ESG aim to appear as credible or 'believable' to market participants.

More recently, research has considered how sustainability affects firm performance around earnings announcements. Based on the conjecture that CSR performance signals a higher level of integrity or ethics amongst management, Hsu et al. (2019) find that there is an asymmetric reaction by investors around earnings announcements based on firms CSR performance. Investors react negatively to adverse CSR events, but do not respond positively when felicitous events arise. Analysts, on the other hand, appear to revise their expectations in accordance with positive and negative CSR events. In related work, Bartov and Li (2015) show that in the three-day period surrounding earnings announcements, there is a heightened degree of sensitivity to earnings surprises for firms with more CSR activity. In the sixty-day period following the earnings announcement, firms with high levels of CSR exhibit lower levels of drift, implying that market prices respond more efficiently in firms with high levels of ESG.

Dyck et al. (2019) argue that institutional investors play a significant role in driving firms to

invest in Environmental and Social (ES) initiatives, although Nofsinger et al. (2019) argue that this manifests in the form of the avoidance of firms with low ES scores. Based on survey evidence, Amel-Zadeh and Serafeim (2018) find that the primary consideration of institutional investors remains profitability, but client demand for ESG is an important secondary consideration. Managers may consider investment in ESG as positive, particularly if catering to investors with a preference for sustainability. Friedman and Heinle (2016) and Pedersen et al. (2021) construct theoretical models in which investor preferences drive investment in socially responsible firms, leading to equilibrium prices that reflect the value of ESG in addition to market risk.

Negative ESG-related events increase the likelihood of CEO replacement (Colak et al., 2020). An alternative view is that management tend to promote stakeholder (as opposed to shareholder) value to compensate for failing to meet earnings expectations (Flugum & Souther, 2020), and thus may favor investment in ESG as a hedge for job security. Consistent with this, Chen et al. (2019) find that longer-tenured CEOs (i.e. presumably those with greater job security) invest lower amounts in CSR. Analysts, in contrast, tend to take a shorter-term approach to firm valuation, and tend to view investment in ESG (particularly the environmental and social components) as an agency cost (Ioannou & Serafeim, 2015). Adhkikari (2016) shows that firms with a greater level of analyst coverage tend to have lower CSR scores. This is mainly limited to investments in E&S, as corporate governance (G) practices are positively related to shareholder value (e.g. Gompers et al., 2004). However, Ferrell et al. (2016) find that firms with lower agency concerns engage in more CSR activities.

2.2 Textual Analysis in Financial Research and Conference Call Transcripts

Recent developments in textual analysis provides researchers with the ability to analyse the soft information through texts in financial reports, news media or transcripts of conference calls. A comprehensive review of the broad textual analysis literature is provided in Loughran and McDonald (2016). For instance, several studies examine text from annual reports (10-Ks as a whole, or specifically focused on the Management Discussion and Analysis (MD&A) section) to infer

incremental information about firms.

Huang et al. (2014) document that the level of managerial tone in earnings press releases is positively related to likelihood of meeting contemporaneous earnings thresholds. Moreover, abnormal managerial tone has the immediate positive effect on the three-day cumulative returns, but leads to return reversals over the subsequent two quarters. D'Augusta and DeAngelis (2020) add to the tone management literature by showing that managerial tones in the MD&A section of 10-K reports are concave around the expected earnings. Managerial tones are positively (negatively) related to contemporaneous earnings performance when the earnings are below (above) expectation.

Conference calls serve as an important venue for information dissemination and firm-investor communication around earnings announcements (e.g. Frankel et al., 1999; Bushee et al., 2003; Matsumoto et al., 2011). Typically, conference calls are used by management to explain the financial results of the firm and answer questions from analysts. Accordingly, Kimbrough (2005) finds that the initiation of conference calls leads to reductions in both analyst forecasts errors and post-earnings announcement drift, particularly for small-sized and less liquid firms. Brown et al. (2004) document that firms with regular conference calls exhibit lower costs of capital due to a reduced level of information asymmetry.

Other studies have shown that the sentiment (tones) in conference calls are important for forecasting the future price of the firm. Price et al. (2012) show that conference call tones (through the classification of words as positive or negative) provide incremental information beyond earnings surprises in forecasting post-earnings announcement returns. Blau et al. (2015) find that sophisticated investors (short-sellers) are able to detect inflated managerial tones exhibited in conference calls, and accurately correct the price of stocks with such overly-optimistic tones. Borochin et al. (2018) examine whether option markets react to the tone exhibited by management or analysts in conference calls. They find that analyst tones and differences in tones between analysts and management predict changes in option implied volatility with maturities of 30 to 90 days.

Chen et al. (2018) study the intraday price impacts of both manager and analyst tones during the discussion session in conference calls. They show that the analyst tones, rather than managerial tones, are significantly reflected in intraday prices and this phenomenon is more pronounced when analyst tones are relatively pessimistic. Druz et al., (2020) find that increases in negativity in managerial tone are predictive of future returns, suggesting that the market underreacts to management tone. Matsumoto et al. (2011) argue that the Q&A section of conference calls is more informative than the introductory section of the call, and that managers may disclose more information when earnings are negative. Frankel et al. (2011) document longer call lengths for firms that just fall short of analysts' expectations than for those that just beat expectations. Taken together, this strand of literature demonstrates the importance of conference calls in explaining firm prospects.

To the best of our knowledge, however, existing studies on conference calls do not consider how call tone varies with firm ESG scores. Some related literature associates conference call features with some specific firm characteristic that may be related to ESG components, however. For example, management may be tempted to obfuscate the true position of their firms throughout the conference call, particularly in cases where earnings have been managed. Supporting this notion, Larcker and Zakolyukina (2012) find the tone of conference calls predict restatements in earnings, which are more likely to occur in low ESG firms (Huang & Watson, 2015; Chepurko et al., 2018). Hope and Wang (2018) use conference calls and linguistic analysis to determine the deceptiveness of managers and find higher information asymmetry in firms with more deceptive managers. Similarly, Bushee et al. (2018) find that the information component of conference calls (estimated using a metric of linguistic complexity between management and analysts) is higher for firms with lower informational asymmetry. Market reactions to conference calls are thus likely to be influenced by the level of perceived trustworthiness of the management. While managers of firms with lower ESG firms might have the temptation to influence the market reaction to calls, analysts are likely to play the role of discounting the manager's tone. Given the ability of management to influence which analysts

participate in the call (Mayew et al., 2013), we argue that a measure of tone difference may be an appropriate assessment for the overall tone of the call.

Existing literature motivates this paper to further investigate whether the relative level of tone for management and analysts varies with firm's ESG score. Based on the research suggesting that high ESG firms tend to have lower level of informational asymmetry (Cui et al., 2018) and earnings management (Kim et al., 2012), we would assume that managers in high ESG firms are less likely to misrepresent their financial positions or over-state their financial performance during conference calls, which leads to the first hypothesis:

Hypothesis 1a: The tone of management is negatively related to a firm's ESG score.

Alternatively, firms with high ESG scores may talk about the positive stakeholder initiatives the firm undertakes. This leads to a competing hypothesis:

Hypothesis 1b: The tone of management is positively related to a firm's ESG score.

A corollary to the previous hypothesis is rendered by Flugum and Souther (2020). They conjecture that a firm with a high ESG score has the incentive and opportunity to shift the conversation away from poor firm performance and towards more positive stakeholder activities. This type of tone management would be consistent with the findings of Huang et al. (2014). Thus, we posit another related hypothesis:

Hypothesis 1c: If a positive relation between ESG score and managerial tone is related to poor firm performance, the relation between managerial tone and the interaction of SUE and ESG score will be negative.

Extant literature is less equivocal regarding the typical analysts' views, largely perceiving ESG investment by firms as agency costs (e.g., Ioannou & Serafeim, 2015; Adhikari, 2016). Thus, we expect that high ESG firms will exhibit more negative tone in the analyst Q&A section of the conference call.

Hypothesis 1d: The relation between analyst tone and ESG score will be negative.

2.3 Information asymmetry, over- and under- reaction, and subsequent returns

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Several studies investigate the effect of a firm's information environment on post-announcement returns. Francis et al. (2007) investigate the relationship between information uncertainty and post-earnings returns, finding that information uncertainty delays market responses to earnings surprises. Thus, the post-earnings announcement drift documented in studies such as Ball and Brown (1968) and Bernard and Thomas (1989) is exacerbated by informational uncertainty. Chung and Hrazdil (2011) argue that an inefficient market environment with high barriers to arbitrage is the main driver of post-earnings announcement drift, with drift concentrated in the least-efficient firms. Berkman et al. (2009) document short-term underperformance of stocks with high dispersion in analysts' forecasts and high trading turnover. Their findings imply that information disclosure enhances market efficiency by reducing volatility and mispricing. Zhang (2008) finds that analyst responsiveness in forecast revisions increases market efficiency by improving the earnings-returns sensitivity around the announcement date and reducing subsequent price drift.

Prior literature has also documented the relationship between attributes that have been shown to be correlated with ESG, and post-earnings announcement returns. For instance, Narayanamoorthy (2006) shows that accounting conservatism (a feature of high-ESG firms) reduces the level of post-earnings announcement drift. Along similar lines, Louis and Sun (2011) and Cao and Narayanamoorthy (2012) find that earnings management (a feature more common in low ESG firms) is positively related to post-earnings announcement drift. Moreover, Hung et al. (2015) document significant declines in post-earnings announcement drift globally with the exogenous increase in financial reporting quality due to the IFRS implementation.

Jang et al. (2016) examine earnings announcement returns and firm reputation, proxied with a survey by *Fortune* of senior executives, board members, and analysts within an industry. Firms are classified as 'high' or 'low' reputation based on eight attributes, including innovation, social responsibility, and people management (attributes related to ESG scores). They find price reversals following earnings surprises for firms with low reputation, but high reputation mitigates the earnings

announcement reactions and the subsequent reversals. Their findings suggest that firms with better reputations among industry professionals have less information asymmetry and overall more transparent information environments.

Bathke et al. (2019) demonstrate that there is a subset of firms that exhibit uncorrelated seasonal earnings changes, and these firms tend to experience post-earnings-announcement reversals, rather than drift. The authors argue that this a result of the market's overreaction to earnings news, as investors expect some degree of positive correlation in seasonal earnings.[2] The extent of the overreaction and reversal found by Bathke et al. (2019) is driven by the firm's information environment (proxied by the number of analysts covering a firm).

Bartov and Li (2015) find that earnings news is priced more efficiently in firm with higher corporate social responsibility scores. We apply a similar rationale of Bartov and Li (2015) to soft information and hypothesize that the contemporaneous price impact of relative tones in conference calls are more pronounced in high ESG firms, due to lower levels of information asymmetry. Consequently, the soft information in conference calls is more quickly and accurately reflected in the stock prices of high ESG firms. On the other hand, for low ESG firms, the relatively opaque information environment leads to a mispricing of both earnings news and conference call tones. This mispricing would lead to either drift or reversals in the returns subsequent to conference calls (Hypothesis 2).

Hypothesis 2: The relative tone difference in conference calls is more (less) efficiently reflected in prices of high (low) ESG firms in the three-day window surrounding the call, leading to lesser (larger) post-earnings announcement drift or reversals.

3. Data and Methodology

3.1 Conference Call Transcripts and Tone Measurement.

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[2] Other papers consider overreaction to earnings as a key driver of pricing anomalies in financial markets, including DeBondt and Thaler (1985), Dreman and Berry (1995), and Hirshleifer, Lim, and Teoh (2011).

This study uses U.S. quarterly conference call transcripts during the period from 2003 to 2015 from Fair Disclosure Wire. We divide each conference call into two sessions, introduction session and Q&A session. During the introduction stage, the manager may read through prepared scripts, and does not typically take questions from participating analysts. Therefore, the managers are more likely to inflate or manage their tones with the first-mover advantage depending on corporate performance (Price et al., 2012; Blau et al., 2015; Chen et al., 2018). In the subsequent Q&A session, analysts, possessing superior processing abilities, are able to discover more material information through the interactions with managers. Consequently, analyst tones during the Q&A section are more likely to capture the real firm quarterly performance despite the fact that managers have the incentive to manipulate the participants in conference calls. Hence, tone difference between the managers tone in prepared introduction session (where the call is usually scripted to paint a rosy picture of the firm's performance) and less-biased analyst tone in the interactive Q&A session could represent the managerial behaviour of strategic tone management and capture the managerial incentive to manipulate information dissemination in conference calls (Blau et al., 2015).

We apply the Loughran-McDonald (2011) dictionary and weighting scheme to identify the number of positive and negative words in each portion of the conference call transcript. Then, following Price et al. (2012), the tone of either manager or analysts (participant "p") can be measured by Equation (1) for firm i in quarterly call conference q. The value of $Tone_{p,i,q}$ measures the 'positivity' of the words spoken and ranges from -1 (all total words are negative) to +1 (if all total words are positive).

$$Tone_{p,i,q} = \frac{Number\ of\ Positive\ Words_{p,i,q} - Number\ of\ Negative\ Words_{p,i,q}}{Number\ of\ Positive\ Words_{p,i,q} + Number\ of\ Negative\ Words_{p,i,q}} \qquad (1)$$

Since management has incentive to manipulate the tone of the call (Huang et al., 2014), the distance between the tone of management and the analysts is also an important consideration (e.g. Brockman

et al., 2015; Borochin et al., 2018). Thus, we also create the variable $Tone\ Difference_{i,q}$, which is calculated as:

$$Tone\ Difference_{i,q} = Tone_{IM,i,q} - Tone_{AQ\&A,i,q} \qquad (2)$$

where *IM* indicates the introductory portion of the call and *AQ&A* indicates the analysts' portion of the Q&A session.

3.2 Firm-level ESG Scores and Control Variables.

We obtain corporate ESG performance measures from Refinitiv ESG (formerly Thomson Reuters ASSET4) via the Refinitiv Eikon platform. This dataset, which is widely used by academics (e.g. Liang & Renneboog, 2017; Dyck et al., 2019), provides the overall ESG and ESG controversies score and 10 sub-category scores (e.g. EmissionsReductionScore, ProductResponsibilityScore, CommunityScore) based on more than 400 indicators starting in 2003. We employ ESG Combined Score from Refinitiv ESG as the primary metric to account for the strengths and weaknesses in ESG for each firm.

We source daily historical prices from Center for Research in Security Prices (CRSP), while quarterly financial reporting data is obtained from Compustat. We collect analyst forecasts for quarterly earnings from Institutional Brokers Estimate System (I/B/E/S) and institutional ownership data from the Thomson-Reuters Institutional Holdings (13F) dataset. From these data we construct variables consistent with previous literature regarding conference call tone (e.g. Price et al., 2012; Huang et al., 2014; Borochin et al., 2018). Additionally, following Livnat and Mendenhall (2006), we calculate standardized unexpected earnings (SUE) as the difference between actual EPS from I/B/E/S and the median of the most recent EPS forecast, scaled by the stock price at the end of the previous fiscal quarter. Appendix A contains all variable definitions and the data sources used to calculate them. Observations with missing control variables are dropped, which leads to 7,537 firm-quarter observations in total. To test Hypothesis 1a-1d, we estimate the following regression model:

$Tone_{p,i,q}$ $(or\ Tone\ Difference_{i,q})$

$$= \beta_0 + \beta_1 Log(ESG\_Score)_{i,q} + \beta_2 SUE_{i,q} + \beta_3\left(SUE_{i,q} \times Log(ESG\_Score)_{i,q}\right)$$
$$+ \mathbf{\Gamma} \times Firm\ Level\ Control\ Variables_{i,q} + Industry\ Fixed\ Effects \tag{3}$$
$$+ Year\ Quarter\ Fixed\ Effects + \varepsilon_{i,q}$$

The set of firm-level control variables includes word count of each conference sessions, firms' financial accounting and performance variables, institutional ownership, and analyst coverage. The complete list of controls variables is presented in Appendix A. Coefficient β_1 tests Hypotheses 1a, 1b, and 1d, while coefficient β_3 tests Hypothesis 1c. As suggested by Petersen (2009) and Gow et al. (2010), the standard errors of the estimation are clustered by firm.

3.3 Firm-level Cumulative Abnormal Returns.

We use Equation (4) to assess the price impact of $Tone\ Difference$ in conference calls in the event and post-event periods. The dependent variable, $CAR[t, t+j]_{i,q}$, is the sum of abnormal returns adjusted by the market model from day t to $t+j$. Market beta coefficients for each firm-quarter sample are estimated within the 60-day window from 80 to 20 trading days prior to earnings announcement. The key independent variable is $Tone\ Difference_{i,q}$.

Inspired by Huang et al. (2014), we construct quarterly decile ranking variables, *RSUE* and *RToneDifference* for firms based on SUE and $Tone\ Difference$. As an example, we construct the RSUE variables by sorting firms into deciles, so that the 10 percent of firms with the most negative SUE in each quarter are placed into decile 1, and those with the most positive SUE are placed in decile 10. To better allow for the interpretation of negative SUE, we then subtract 4.5 from each decile, and then divide by 5.5 that RSUE is in the range between -1 and 1. The slope estimates associated with the scaled variables can thus be regarded as the abnormal returns on a zero-investment portfolio that purchases the top decile firms and selling the middle decile firms. We estimate the following regression

specification to test Hypothesis 2:

$$CAR[t, t+j]_{i,q}$$

$$= \gamma_0 + \gamma_1 RTone\ Difference_{i,q} + \gamma_2 RSUE_{i,q}$$

$$+ \gamma_3\big(RSUE_{i,q} \times RToneDifference_{i,q}\big) \tag{4}$$

$$+ \Gamma \times Firm\ Level\ Control\ Variables_{i,q} + Industry\ Fixed\ Effects$$

$$+ Year\ Quarter\ Fixed\ Effects + \varepsilon_{i,q}$$

The cumulative abnormal returns contemporaneous to the conference call is represented by CAR[-1,+1] and the post-call returns by CAR[+2,+60]. The coefficients γ_1 and γ_3 in Equation (4) are related to Hypothesis 2 and explain the incremental effect of tone differences on the post-earnings stock performance. Industry fixed effects, using the Fama-French 48-industry classification, are included to capture the unobservable time-invariant industry characteristics and year-quarter fixed effects are added to explain the simultaneous variations for the firms through the sample period. Again, the standard errors are clustered by firm in the estimation.

Table 1 shows the descriptive statistics of the main variables. All continuous variables are winsorized at 1 and 99% to eliminate the potential biases introduced by extreme values. On average, managers use more positive words than negative words in the introduction sections and the average managerial tone in introduction section is 0.110. However, during the interactive Q&A section, both the managerial tones and analyst tones are negative, averaging -0.078 and -0.242 respectively, while the managerial tones are still more positive than analyst tones. The mean of Tone Difference is 0.351, which implies that managers tend to be more optimistic than analysts. These findings are consistent with previous studies examining the relative optimism of managerial tones, especially in the introduction section (e.g. Blau et al., 2015; Brockman et al., 2015; Borochin et al., 2018; Chen et al., 2018). We measure the post-earnings announcement returns by calculating the cumulative abnormal returns. The mean of three-day cumulative returns centred on earnings announcement date (CAR[-1,+1]) is 0.1% and the average post-earnings announcement return (CAR[+2,+60]) is -0.6%,

indicating that there are slight reversals, on average, in our sample.

[Insert Table 1 here]

Table 2 reports the correlation coefficients for the main variables used in the following analyses. The key variable of interest, Tone Difference, is shown to be positively related to the firm's lagged ESG score, current earnings, firm size, and analyst coverage. It is negatively related to earnings volatility, debt level, past return volatility, and level of institutional ownership. This is consistent with the notion that management conditions tones based on firm performance. Moreover, we find the ESG score is positively related to firm size and age.

[Insert Table 2 here]

4. Results

4.1. ESG Scores and Conference Call Tones

Table 3 reports the estimation results from the regression model described in Equation (3). Consistent with Hypothesis 1b, Columns (1), (2), and (3) demonstrate a positive relation between ESG score and managers' introductory and Q&A tone. In the full models (Column (3) and (6)), the estimated coefficient of Log(ESG_Score) in the managerial introduction and Q&A tone regressions are 0.061 (p-value<0.01) and 0.033 (p-value<0.10), respectively. The ESG score also has a positive and statistically significant relation with the Tone Difference (coefficient of 0.047, p-value<0.05). Thus, firms with higher ESG scores have larger tone differences. However, ESG scores are not statistically related to analyst Q&A tone in their raw form. Additionally, Hypothesis 1c and the predictions of Flugum and Souther (2020) are not supported by the evidence presented in Table 3, as the interaction between Log(ESG_Score) and SUE is statistically insignificant in all specifications.

[Insert Table 3 here]

The control variables load as expected, considering extant literature. Consistent with Huang et al. (2014) and D'Augusta & DeAngelis (2020), Column (2) of Table 3 shows managers are likely to express more positive tones in the introduction section given a positive earnings surprise, improvement

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in seasonal quarterly earnings, higher sales growth, better short-term price performance. Higher debt levels and return volatility contribute to more pessimistic managerial tones in introduction. Overall, consistent with the Hypothesis 1b, Table 3 provides evidence that managers from firms with higher ESG performance express more positive tones, particularly during the introduction section of the call.

In addition to an overall ESG score, Refinitiv provides scores for various aspects of environmental, social, and corporate governance. [3] ResourceUseScore, EmissionsScore, and EnvironmentalInnovationScore make up the components of the Environmental portion of the ESG score. Similarly, WorkforceScore, HumanRightsScore, CommunityScore, and ProductResponsibilityScore are the elements of the Social component of the ESG score, while ManagementScore, ShareholderScore, and CSRStrategyScore comprise the Governance component. Table 4 presents the regression results of replacing the overall ESG Score as the independent variable of interest with ESG component scores in Table 3. Column 1, for example, shows that the Introduction-Manager Tones are positively related to the EmissionsScore (coefficient of 0.017, p-value<0.10), but negatively related to the ProductResponsibilityScore (coefficient of -0.030, p-value<0.05). Thus, the positive relation between managerial tone and overall ESG score appears to be particularly related to one of the salient features of ESG (emissions).

Column 3 demonstrates that Analyst tones are negatively related to WorkforceScore (coefficient of -0.021, p-value<0.01) and ProductResponsibilityScore (coefficient of -0.020, p-value<0.01), and positively related to ShareholderScore (coefficient of 0.012, p-value<0.01). The shareholder score proxies for shareholder rights and takeover defences, features of corporate governance that are familiar to and valued by analysts. The WorkforceScore is related to diversity, career development, working conditions, and health & safety. The negativity shown by analysts towards the WorkforceScore is consistent with the agency costs viewpoint described by Ioannou and

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Serafeim (2015), and is supportive of Hypothesis 1d.

Tone Difference, as shown in column 4, is positively related to WorkforceScore (coefficient of 0.018, p-value<0.05). The negative view towards ProductResponsibilityScore is shared by both management and analysts and thus offsets one another in the tone difference. However, the Tone Difference is negatively related to ShareholderScore (coefficient of -0.018, p-value<0.05). Therefore, better governance related to shareholders aligns the tone between managers and analysts, but investment in environmental and social initiatives tends to increase Tone Difference.

[Insert Table 4 here]

4.2. ESG Scores, Conference Call Tones, and Stock Returns.

Hypothesis 2 posits a relation between a firm's ESG score the mechanism by which conference call tones are priced immediately around and subsequent to the call. For brevity, we focus the remaining analyses on Tone Difference.[4] We start the analysis by plotting the market-model adjusted cumulative abnormal returns (CARs) from -10 to +60 days around quarterly earnings announcements.

[Insert Figure 1 here]

Figure 1 shows the 70-day CARs by sorting the firms into terciles based on their SUE and Tone Differences. Firms with in the lowest tercile of Tone Difference (Low ToneDifference) exhibit higher announcement-day returns compared to the firms in the highest tercile of Tone Difference (High ToneDifference) . Regardless of SUE, High ToneDifference firms have a relatively strong reversal in their return patterns. Next, we replot the graph while considering firms' ESG ratings.

[Insert Figure 2 here]

Figure 2 illustrates the patterns of CARs after sorting the firms into terciles of SUE, terciles of Tone Differences, and high/low groups based on previous-year ESG performance rating. Consistent with Figure 1, high ToneDifference firms exhibit the downward shift in announcement returns. Panel A shows the plots for the high (above the median) ESG rating subsample. Overall, high ESG firms

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[4] We find qualitatively similar evidence for the Introductory Tone of the call (results are available upon request).

exhibit the slight price reversal similar to the general trend shown in Figure 1. Panel B of Figure 2 shows very strong and consistent patterns for firms with low (below the median) ESG ratings. The low ESG-low Tone Difference subset of firms exhibit continuation in both low and high SUE firms. On the other hand, the low ESG-high Tone Difference firms reveal a strong reversal in post-earnings announcements returns. The plots of Figure 2 are supportive of Hypothesis 2, as tone appears to be priced efficiently in high ESG firms but not low ESG firms.

Next, we estimate regression models as Equation (4) detailed in Section 3. Table 5 shows the estimation results separately for high and low ESG groups.[5] Models (1) and (2) show that RSUE is incorporated in a positively related way into the announcement window CAR of low ESG firms (e.g. the RSUE coefficient in Model 2 is 0.029, p-value<0.01). The SUE effect is slightly higher among lower ESG firms compared to high ESG (i.e. the RSUE coefficient in Model 4 is 0.023, p-value<0.01), but nor statistically different. Columns (2) and (4) show RToneDifference also has a similar impact on the CAR of high and low ESG firms, as shown by the coefficient estimates of -0.009 (p-value<0.01) and -0.011 (p-value<0.01). Considering the literature finds Tone Difference is interpreted as a negative signal by the market (e.g. Borochin et al., 2018), this result is consistent with those of Bartov et al. (2020) who show firms with higher CSR have more negative stock returns associated with restatement announcements than firms with low CSR. Our results demonstrate the "bad news" of high Tone Difference is incorporated into the stock price of both high and low ESG firms. Columns (1) through (4) also show that there is no statistically significant interaction between RSUE and RToneDifference that affects event window returns. Thus, in the event window, there is no evidence that investors price SUE or ToneDifference differently in high versus low ESG firms.

[Insert Table 5 here]

Models (5) through (8) show the estimation results with respect to the post-event window. Positive coefficients, particularly with respect to RSUE, reflect a return continuation (underreaction in

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[5] We also find the results are robust using CAR adjusted by the three-factor model (results are available upon request).

the event window) while negative coefficients are consistent with a return reversal (overreaction in the event window). Model (6) shows the full model results for low ESG firms. The interaction between RSUE and RToneDifference has a coefficient of -0.027 (p-value<0.05), indicating an intertwined effect associated with these two variables resulting in reversals in the post-event window. The higher the Tone Difference, the larger the reversal will be associated with a level SUE. This price reversal is non-existent in high ESG firms, as shown in Models (7) and (8). Therefore, the information content of SUE and conference call tone differences appear to be accurately priced in the event-window returns of high ESG firms, which are less likely to engage in earnings management (Kim et al., 2012) and have lower level of information asymmetry (Cui et al., 2018). Although investors are pricing SUE and ToneDifference similarly among high and low ESG firms in the event window, the evidence suggests they over(under)react to SUE (ToneDifference) in firms with low ESG. Taken altogether, we find evidence supporting Hypothesis 2.

In Table 6, we reverse the roles of ESG and Tone Difference from Table 5, which allows us to demonstrate the differential effect of ESG in sub-samples based on Tone Difference. During the event window (Models (1) through (4)), it is evident that firms with low ToneDifference exhibit lower sensitivity to earnings surprises than do firms with high ToneDifference. For instance, the coefficient on RSUE in Model (1) is 0.029 (p-value<0.01) compared with 0.042 (p-value<0.01) in Model (3). This difference of 0.013 (p-value<0.05) means that, *ceteris paribus*, firms with high ToneDifference in the highest SUE decile will have event windows returns 1.3% greater than those with low ToneDifference. RESG does not have an individual effect on event window CARs for either low or high ToneDifference firms. However, the interaction between RESG and RSUE is negative for high ToneDifference firms (i.e. in Models (3) and (4) the coefficient is -0.020, p-value<0.01), indicating that ESG mitigates the greater reaction to SUE (e.g., for both high SUE and ESG firms, the marginal effect of RSUE and RESG is 0.041-0.020=0.021, p-value<0.05). The interaction of RSUE and RESG is not statistically significant in low ToneDifference firms, suggesting ESG is not important when analysts' tone matches

or is more positive than managements'. These findings are consistent with the notion that when there is little (or easy to interpret) soft information when there is low tone difference between managers and analysts and much soft information when tone difference is high, requiring a more transparent information environment (such as that a high ESG firm provides) to interpret accurately. However, this must be borne out in the post-event returns (i.e. ESG reduces post-even drift or reversal) in order to confidently make this claim.

[Insert Table 6 here]

The post-event period analysis (Models (5) through (8) of Table 6) lends support to the case for overreaction to earnings announcements in High Tone Difference firms with low ESG Scores. None of the coefficients of interest (RSUE, RESG, or their interaction term) are significant for firms with low ToneDifference (Models (5) and (6) of Table 6), indicating that the market reaction occurs during the event period for these firms without subsequent drift or reversals. However, for firms with high Tone Difference, reversals associated with RSUE are evident (e.g. the RSUE coefficient in Models (7) and (8) are negative and significant at least at the 5% level). Although, consistent with Hypothesis 2, higher levels of ESG mitigate the price reversal. In fact, ESG renders any price reversal insignificant. For example, in Model (8), RSUE exhibits a negative coefficient (-0.022, p-value<0.05) and the interaction term RSUE*RESG carries a positive coefficient (0.044, p-value<0.05) such that the net effect of high RSUE and high ESG is no different than zero (-0.029+0.039=0.017, p-value>0.75). Thus, the preponderance of evidence suggesting soft information is more accurately incorporated into the price of high ESG firms supports Hypothesis 2 and the notion that ESG is negatively related to information asymmetry (i.e. high ESG firms have more transparent information environments than their low ESG counterparts).

[Insert Figure 3 here]

The effects found in Table 6 are demonstrated graphically in Figure 3. In Panel A of Figure 3, we plot the path of cumulative abnormal returns for firms with high Tone Difference. Firms with high

ESG scores (solid lines) exhibit price responses consistent with an efficient adjustment to the earnings surprise. However, for firms with low ESG scores (dashed lines), there is clear evidence of overreaction in cases of both positive and negative earnings surprises. For instance, the CAR of firms with a positive surprise in the low ESG, high Tone Difference group increases above that of their high ESG counterparts immediately following the call, then slowly reverts back to the efficient price level, which is maintained by high ESG firms. Panel B of Figure displays the CAR path of firms with low Tone Difference. This graph shows similar price paths between low and high ESG firms. While there does appear to be price reversals, the regression analyses shows that neither SUE nor ToneDifference has an impact on post-event CARs.

5. Robustness Tests

An alternative explanation to the relation between ESG, conference call tone, and post-event drift or reversal is that ESG simply proxies for better governance, or the "G" in "ESG." Given that Jo and Harjoto (2011, 2012) find a positive relation between corporate governance and future CSR scores, there is reason to suspect that governance may be driving the overall results associated with the ESG scores. To examine if this is the case, we perform two sets of robustness tests. First, as in Pedersen et al. (2021), we use discretionary accruals (as computed by Kothari et al., 2005 and Linck et al., 2013) as a proxy for firm governance. Additionally, poor earnings quality is associated with higher information asymmetry (e.g. Bhattacharya, Desai, & Venkataraman, 2013). Thus, if governance is the driving factor related to lower information asymmetry, then the ESG Score will not be significantly related to post-earnings returns. We modify the models using in Table 3 and 8 to include discretionary accruals and re-estimate them. The results are displayed in Tables 7 and 8.

[Insert Table 7 here]

[Insert Table 8 here]

Table 7 shows that the ESG score, even in the presence of discretionary accruals, remains statistically significantly related to Introduction Tone and Tone Difference. In addition, Table 8 shows

a virtually identical relation between Tone Difference, ESG Score, and post-event returns as in Table 6.

[Insert Table 9 here]

[Insert Table 10 here]

Second, using the weights of E, S, and G described by Refinitiv, we reconstitute a measure of just Environmental and Social (omitting Governance, "G") scores, the "ES Score." This reconstitution is motivated by Nofsinger et al. (2019) who try to isolate the effects of environmental and social initiatives on institutional investing. The Log(ES_Score) and Log(G Score) have a correlation of 0.472 (untabulated), thus the ES Score is not dominated by the Governance Score. The results shown in Table 9 demonstrate that the relation between the ES Score, Introduction Tone, and Tone Difference is slightly weaker than that of the ESG Score. However, Table 10 shows that the relation between ES Score, Tone Difference, and post-event is very similar to that of the ESG Score. Taken as a whole, the results from these robustness tests show that Governance does not singularly drive the results associated with the overall ESG Score.

6. Conclusion

This paper studies how firms' ESG scores affect the managerial and analyst tones (considered 'soft' information) in quarterly earnings conference calls, and what incremental effects the ESG scores have on post-call returns via the price response to the tone difference between managers and analysts. Returns following earnings announcements and earnings conference calls speak to the quality of the information environment of the firms (e.g. Narayanamoorthy, 2006; Cao and Narayanamoorthy, 2012; Price et al., 2012; Bartov and Li, 2015; Jang et al., 2016; Bathke et al., 2019). Soft information, which is notoriously difficult to process, should incorporated quickly and accurately in a transparent information environment and not so in opaque environment.

In our initial analysis, we find a positive relationship between a firm's ESG score and managerial tone in the introduction section of conference calls. There is also a positive relation between

Tone Difference (the difference in managers' introductory tone and analysts' tone in the Q&A session) and ESG scores. However, we find no evidence that managers of high ESG firms have higher call tone when the firm financially underperforms. This lack of evidence does not support the hypothesis of Flugum and Souther (2020) which suggests high ESG firm managers deflect criticism by focusing on positive ESG-related initiatives when the firm is not meeting financial expectations.

We then model the incremental effects of Tone Difference for high/low ESG firms on cumulative abnormal returns during the conference call period and also in the post-call period. The soft information in the Tone Difference is likewise incorporated into the price of low and high ESG firms in the event window. There is a negative relation between Tone Difference and event-window returns that is of similar magnitude between firms with low and high ESG scores. However, when low ESG firms have high Tone Difference, the price response to SUE is 50% larger than when firms have low Tone Difference. The price response to SUE among high ESG firms is similar regardless of Tone Difference.

In the post-event period, low ESG firms experience a price reversal related to SUE and Tone Difference. High ESG firms, on the other hand, experience neither a drift nor a reversal related to SUE or Tone Difference. The strong price reversals imply that investors overreact to SUE and underreact to Tone Difference among firm with low ESG scores. This evidence suggests that it takes a longer time for the market to fully reflect the information of SUE and the relative conference call tone between management and analysts for low ESG firms. However, market participants are able to more accurately evaluate SUE and Tone Difference in high ESG firms. Thus, high ESG firms appear to have a more transparent information environment in which soft information such as conference call tone can be more easily incorporated into their stock prices by the market. Importantly, these results are not solely driven by the governance aspect of the ESG score. Therefore, our results suggest that the environmental and social aspects of ESG are at least as important as the governance aspect in evaluating the information asymmetry of the firm.

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Figure 1: Cumulative Abnormal Returns on Quarterly Earnings Announcement Sorted by Tone Difference and SUE Terciles

This figure presents the market-model adjusted cumulative abnormal returns (CARs) from -10 to 60 days around quarterly earnings announcements for the full sample. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A.
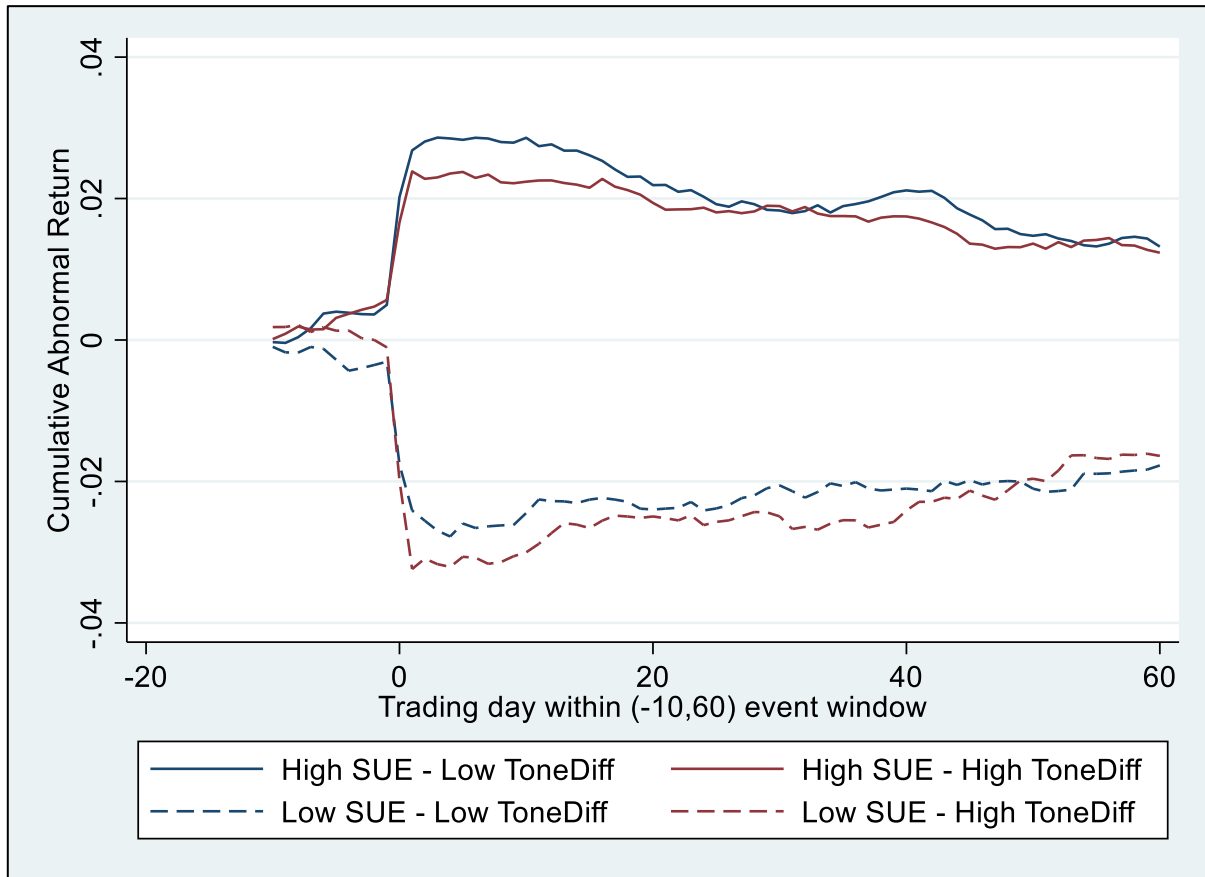
Figure 2: Cumulative Abnormal Returns on Quarterly Earnings Announcement Sorted by ESG Groupings, Tone Difference and SUE Terciles

This figure presents the market-model adjusted cumulative abnormal returns (CARs) from -10 to 60 days around quarterly earnings announcements for high ESG (Panel A) and low ESG (Panel B) groups. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. Firm ESG performance is estimated as the natural logarithm of lagged ESG Combined Score reported in Refinitiv. Firms with ESG Combined Score above (below) median ESG Combined Score are classified as the high (low) ESG group in each fiscal quarter.

Panel A: High ESG Firms
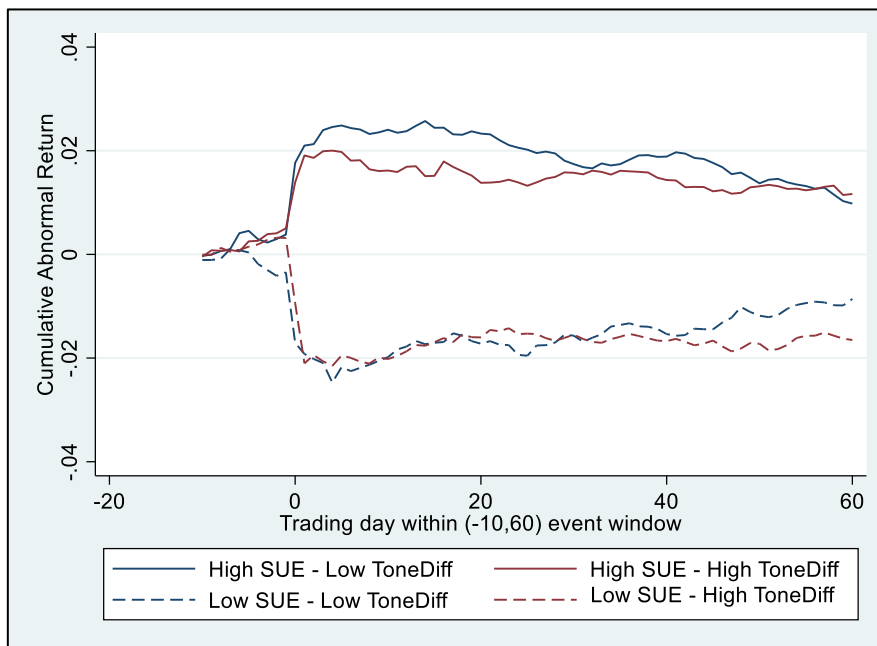
Panel B: Low ESG Firms

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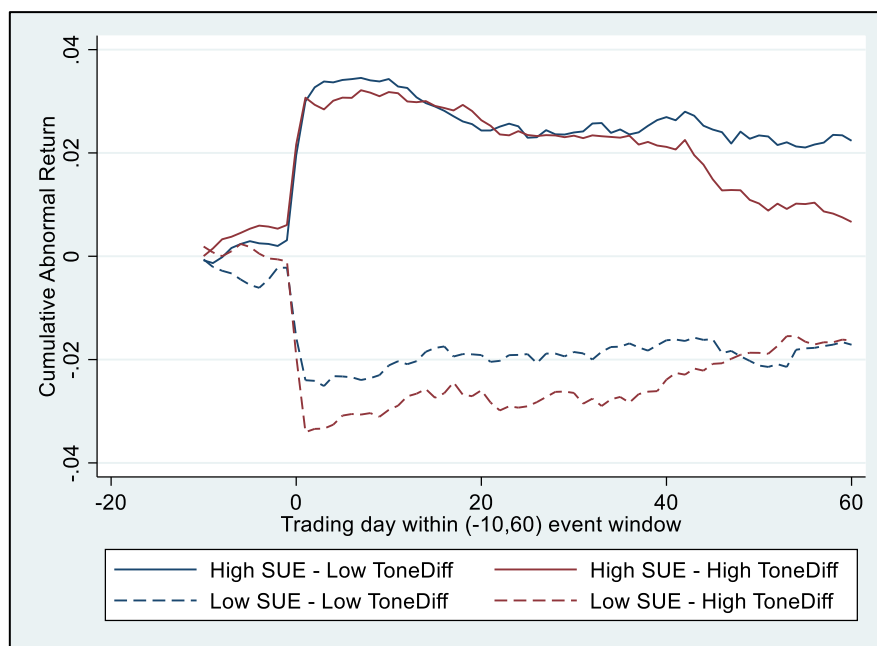
Figure 3: Cumulative Abnormal Returns on Quarterly Earnings Announcement Sorted by ESG Groupings, Tone Difference and SUE Terciles

This figure presents the market-model adjusted cumulative abnormal returns (CARs) from -10 to 60 days around quarterly earnings announcements for high ToneDifference (Panel A) and low ToneDifference (Panel B) groups. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. Firm ESG performance is estimated as the natural logarithm of lagged ESG Combined Score reported in Refinitiv. Firms with ESG Combined Score above (below) median ESG Combined Score are classified as the high (low) ESG group in each fiscal quarter.

Panel A: High ToneDifference Firms

Panel B: Low ToneDifference Firms
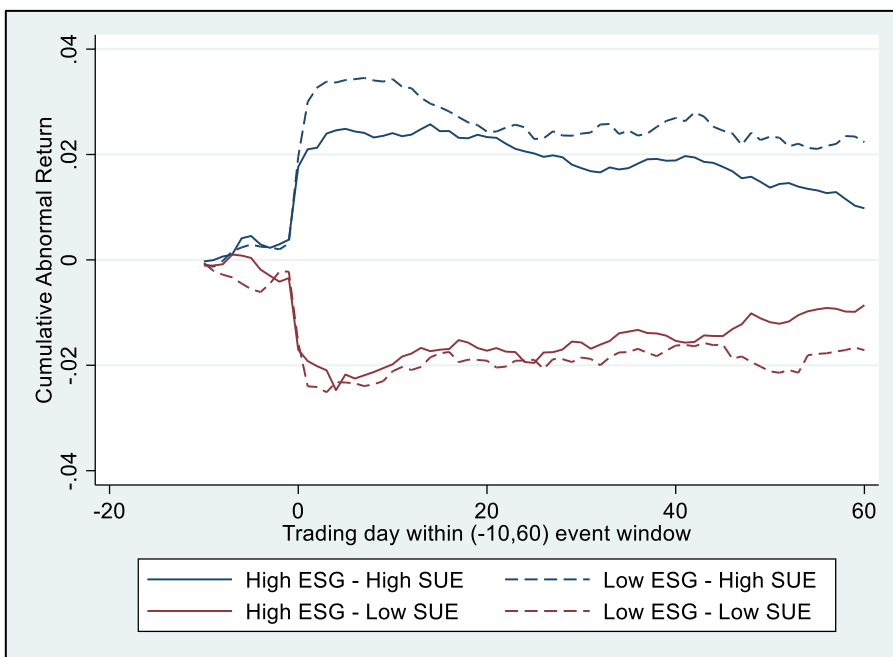
Table 1. Descriptive Statistics

VARIABLES	(1) N	(2) Mean	(3) SD	(4) p1	(5) p5	(6) p50	(7) p95	(8) p99
Introduction-Manager Tones	7,537	0.110	0.331	-0.659	-0.447	0.123	0.639	0.788
Q&A-Manager Tones	7,537	-0.078	0.318	-0.839	-0.598	-0.083	0.459	0.703
Q&A-Analyst Tones	7,537	-0.242	0.306	-0.861	-0.708	-0.266	0.312	0.597
Tone Difference	7,537	0.351	0.371	-0.622	-0.283	0.360	0.963	1.197
Introduction wordcount	7,537	3.165	1.254	0.625	1.373	3.044	5.353	6.745
Manager QA wordcount	7,537	3.126	1.373	0.220	0.922	3.075	5.494	6.688
Analyst QA wordcount	7,537	1.521	0.587	0.347	0.653	1.477	2.529	3.181
Log(ESG_Score)	7,537	3.700	0.341	2.810	3.096	3.694	4.293	4.426
SUE	7,537	0.001	0.005	-0.030	-0.004	0.000	0.007	0.020
EARN	7,537	0.015	0.023	-0.095	-0.014	0.014	0.049	0.080
$\Delta EARN$	7,537	0.000	0.020	-0.101	-0.025	0.000	0.024	0.091
STD(EARN)	7,537	0.011	0.017	0.000	0.001	0.006	0.042	0.102
AGE	7,537	3.117	0.859	0.959	1.517	3.132	4.418	4.490
SIZE	7,537	9.082	1.241	6.383	7.248	8.960	11.540	12.240
MB	7,537	3.391	4.167	-9.084	0.775	2.419	9.377	28.220
DEBTRAT	7,537	0.245	0.182	0.000	0.000	0.215	0.588	0.850
SGROWTH	7,537	0.080	0.212	-0.490	-0.242	0.063	0.455	0.952
CAR [-1, +1]	7,537	0.001	0.062	-0.190	-0.102	0.001	0.106	0.181
CAR [+2, +60]	7,537	-0.006	0.171	-0.522	-0.288	-0.007	0.273	0.522
MOM	7,537	0.035	0.146	-0.397	-0.213	0.037	0.273	0.488
STD(RET)	7,537	0.087	0.048	0.027	0.035	0.074	0.181	0.287
No of Analysts	7,537	2.625	0.562	0.693	1.609	2.708	3.401	3.584
IO	7,537	0.769	0.193	0.050	0.404	0.802	1.010	1.126

This table reports the descriptive statistics for the main variables. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. Earnings announcement returns are reported as the market-model-adjusted cumulative abnormal returns, estimated within the 60-day window [-80,-20], around earnings announcements. Firm ESG performance is estimated as the natural logarithm of ESG Combined Score reported in Refinitiv. Other control variables are described in Table A1. All variables are winsorized at 1% and 99%.

Table 2. Correlation Matrix

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Introduction-Manager Tones	(1)	1.000											
Q&A-Manager Tones	(2)	0.474	1.000										
Q&A-Analyst Tones	(3)	0.320	0.366	1.000									
Tone Difference	(4)	0.626	0.124	-0.535	1.000								
Introduction wordcount	(5)	0.010	0.059	-0.024	0.031	1.000							
Manager QA wordcount	(6)	0.090	0.063	0.031	0.056	0.058	1.000						
Analyst QA wordcount	(7)	-0.015	-0.058	-0.073	0.048	-0.177	0.458	1.000					
Log(ESG_Score)	(8)	0.049	0.026	-0.003	0.046	0.002	0.020	0.082	1.000				
SUE	(9)	0.100	0.069	0.093	0.014	-0.010	0.009	-0.010	0.012	1.000			
EARN	(10)	0.176	0.099	0.071	0.098	-0.053	0.068	0.039	0.071	0.184	1.000		
$\Delta EARN$	(11)	0.067	0.035	0.046	0.020	-0.028	0.003	-0.008	-0.008	0.214	0.429	1.000	
STD(EARN)	(12)	-0.030	-0.018	0.026	-0.049	0.070	-0.019	-0.066	-0.054	-0.021	-0.213	-0.010	1.000
AGE	(13)	-0.115	-0.046	-0.055	-0.056	-0.046	-0.014	0.101	0.216	0.028	0.032	-0.002	-0.151
SIZE	(14)	0.093	0.064	-0.003	0.086	0.110	0.134	0.171	0.174	0.036	0.264	0.015	-0.223
MB	(15)	0.155	0.115	0.088	0.066	0.005	0.067	0.025	0.011	-0.002	0.125	0.008	0.027
DEBTRAT	(16)	-0.114	-0.093	-0.081	-0.036	-0.045	-0.047	0.010	-0.021	-0.047	-0.138	0.001	0.003
SGROWTH	(17)	0.162	0.071	0.069	0.089	-0.007	0.000	-0.011	-0.079	0.084	0.177	0.057	-0.012
CAR [-1, +1]	(18)	0.086	0.061	0.138	-0.038	-0.009	-0.018	-0.031	0.016	0.206	0.084	0.132	0.015
CAR [+2, +60]	(19)	-0.057	-0.055	-0.074	0.013	0.016	-0.006	0.013	0.000	-0.066	-0.025	-0.016	-0.022
MOM	(20)	0.084	0.098	0.153	-0.050	-0.021	-0.016	-0.035	-0.022	0.089	0.002	0.027	0.028
STD(RET)	(21)	-0.155	-0.120	-0.056	-0.093	0.073	-0.048	-0.064	-0.112	-0.020	-0.245	-0.002	0.350
No of Analysts	(22)	0.152	0.152	0.081	0.069	0.092	0.290	0.273	-0.012	0.055	0.127	0.004	-0.057
IO	(23)	0.083	0.101	0.093	-0.003	0.040	0.108	0.028	-0.087	0.038	0.000	0.006	0.050

Table 2. Correlation Matrix (Continued)

		(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
Introduction-Manager Tones	(1)											
Q&A-Manager Tones	(2)											
Q&A-Analyst Tones	(3)											
Tone Difference	(4)											
Introduction wordcount	(5)											
Manager QA wordcount	(6)											
Analyst QA wordcount	(7)											
Log(ESG_Score)	(8)											
SUE	(9)											
EARN	(10)											
$\Delta EARN$	(11)											
STD(EARN)	(12)											
AGE	(13)	1.000										
SIZE	(14)	0.243	1.000									
MB	(15)	-0.074	0.145	1.000								
DEBTRAT	(16)	-0.002	-0.049	0.051	1.000							
SGROWTH	(17)	-0.162	0.071	0.152	-0.014	1.000						
CAR [-1, +1]	(18)	-0.027	-0.024	-0.019	-0.028	0.052	1.000					
CAR [+2, +60]	(19)	0.018	-0.042	-0.054	0.002	-0.031	0.083	1.000				
MOM	(20)	-0.032	-0.006	0.043	0.015	-0.024	-0.027	-0.398	1.000			
STD(RET)	(21)	-0.272	-0.393	-0.060	-0.042	-0.028	0.024	-0.017	0.038	1.000		
IO	(22)	-0.013	0.367	0.101	-0.184	0.098	0.007	-0.005	-0.002	-0.080	1.000	
No of Analysts	(23)	-0.071	-0.257	0.008	-0.013	0.022	0.026	0.002	0.014	0.020	0.265	1.000

This table provides the correlations for main variables used in this paper. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. Earnings announcement returns are reported as the market-model-adjusted cumulative abnormal returns, estimated within the 60-day window [-80,-20], around earnings announcements. Firm ESG performance is estimated as the natural logarithm of ESG Combined Score reported in Refinitiv. Other control variables are described in Table A1.

Table 3. Regression of Conference Call Tones on ESG and SUE

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Introduction-Manager Tones			*Q&A-Manager Tones*			*Q&A- Analyst Tones*			*Tone Difference*		
Log(ESG_Score)	**0.062*****	**0.062*****	**0.061*****	**0.038****	**0.033***	**0.033***	**0.008**	**0.016**	**0.015**	**0.054*****	**0.047****	**0.047****
	(3.23)	**(3.22)**	**(3.15)**	**(2.20)**	**(1.90)**	**(1.91)**	**(0.59)**	**(1.27)**	**(1.20)**	**(2.83)**	**(2.39)**	**(2.35)**
SUE	**6.416*****	**4.372*****	**-2.714**	**4.190*****	**2.943*****	**3.780**	**5.297*****	**4.029*****	**-1.661**	**1.261**	**0.493**	**-1.343**
	(8.02)	**(5.65)**	**(-0.42)**	**(5.90)**	**(4.09)**	**(0.54)**	**(7.41)**	**(5.47)**	**(-0.24)**	**(1.44)**	**(0.55)**	**(-0.16)**
SUE*Log(ESG_Score)			**1.942**			**-0.229**			**1.559**			**0.503**
			(1.09)			**(-0.12)**			**(0.84)**			**(0.22)**
AGE		-0.021**	-0.021**		0.006	0.006		0.004	0.004		-0.024**	-0.024**
		(-2.03)	(-2.04)		(0.66)	(0.66)		(0.60)	(0.59)		(-2.42)	(-2.42)
SIZE		0.003	0.003		0.000	0.000		-0.001	-0.001		0.003	0.003
		(0.36)	(0.36)		(0.06)	(0.06)		(-0.10)	(-0.10)		(0.31)	(0.31)
MB		0.004**	0.004**		0.002	0.002		0.003***	0.003***		0.001	0.001
		(2.24)	(2.24)		(1.29)	(1.29)		(3.10)	(3.10)		(0.64)	(0.64)
EARN		0.285	0.284		-0.257	-0.257		-0.121	-0.122		0.396	0.395
		(0.73)	(0.72)		(-0.91)	(-0.91)		(-0.59)	(-0.60)		(1.05)	(1.05)
ΔEARN		0.549**	0.555**		0.397*	0.396*		0.372*	0.377*		0.158	0.160
		(2.34)	(2.36)		(1.86)	(1.86)		(1.78)	(1.80)		(0.59)	(0.59)
STD(EARN)		0.126	0.132		0.137	0.136		0.643**	0.649***		-0.554	-0.552
		(0.36)	(0.38)		(0.44)	(0.43)		(2.56)	(2.59)		(-1.56)	(-1.56)
DEBTRAT		-0.197***	-0.198***		-0.130***	-0.130***		-0.116***	-0.116***		-0.080*	-0.080*
		(-3.81)	(-3.82)		(-2.99)	(-2.99)		(-3.81)	(-3.84)		(-1.67)	(-1.67)
SGROWTH		0.121***	0.121***		0.041**	0.041**		0.064***	0.064***		0.060**	0.060**
		(4.69)	(4.68)		(1.99)	(1.99)		(3.30)	(3.27)		(2.05)	(2.04)
MOM		0.169***	0.169***		0.189***	0.189***		0.260***	0.260***		-0.085***	-0.085***
		(7.31)	(7.30)		(7.13)	(7.13)		(10.17)	(10.18)		(-2.81)	(-2.81)
STD(RET)		-0.448***	-0.449***		-0.297**	-0.297**		-0.289**	-0.289**		-0.188	-0.188
		(-2.74)	(-2.74)		(-2.12)	(-2.12)		(-2.48)	(-2.48)		(-1.11)	(-1.11)
No of Analysts		0.046***	0.046***		0.050***	0.050***		0.013	0.013		0.035**	0.035**
		(2.83)	(2.83)		(3.34)	(3.34)		(1.18)	(1.18)		(2.07)	(2.07)
IO		0.024	0.024		0.051	0.051		0.057**	0.057**		-0.038	-0.038
		(0.57)	(0.56)		(1.34)	(1.35)		(2.11)	(2.09)		(-0.90)	(-0.90)
Introduction wordcount		0.002	0.002								0.008	0.008
		(0.32)	(0.33)								(1.26)	(1.27)
Manager QA wordcount					-0.002	-0.002					-0.000	-0.000
					(-0.54)	(-0.54)					(-0.02)	(-0.02)
Analyst QA wordcount								-0.042***	-0.042***		0.036***	0.036***
								(-5.33)	(-5.34)		(2.74)	(2.74)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Constant	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537
Adjusted R-squared	0.236	0.275	0.275	0.149	0.170	0.169	0.101	0.128	0.128	0.078	0.093	0.093
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

This table presents the results from regressing tone measures on firm's lagged ESG performance and other firm-specific control variables. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. Firm ESG performance is estimated as the natural logarithm of lagged ESG Combined Score reported in Refinitiv. Other control variables are described in Table A1. Industry (Fama-French 48-industry classification) and year-quarter fixed effects are included. Standard errors are clustered at firm-level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Conference Call Tones and ESG Category Scores

VARIABLES	(1) Introduction-Manager Tones	(2) Q&A-Manager Tones	(3) Q&A-Analyst Tones	(4) Tone Difference
ResourceUseScore	0.023	0.011	0.006	0.016
	(1.53)	(0.86)	(0.62)	(1.10)
EmissionsScore	0.017*	0.004	0.008	0.010
	(1.72)	(0.44)	(1.21)	(0.99)
EnvironmentalInnovationScore	-0.003	0.016	-0.001	-0.001
	(-0.19)	(1.41)	(-0.14)	(-0.07)
WorkforceScore	-0.002	-0.014*	-0.021***	0.018**
	(-0.24)	(-1.75)	(-3.72)	(1.99)
HumanRightsScore	-0.003	-0.004	0.017	-0.020
	(-0.14)	(-0.24)	(1.35)	(-1.07)
CommunityScore	0.013	0.029**	0.022**	-0.010
	(0.73)	(2.10)	(2.21)	(-0.57)
ProductResponsibilityScore	-0.030**	-0.003	-0.020***	-0.009
	(-2.24)	(-0.26)	(-2.98)	(-0.69)
ManagementScore	0.012	0.008	0.004	0.009
	(1.27)	(1.06)	(0.72)	(0.94)
ShareholdersScore	-0.006	0.000	0.012***	-0.018**
	(-0.86)	(0.05)	(2.70)	(-2.41)
CSRStrategyScore	-0.006	0.000	-0.005	0.000
	(-0.55)	(0.04)	(-0.68)	(0.00)
SUE	4.418***	2.881***	3.952***	0.609
	(5.82)	(4.02)	(5.45)	(0.70)
Constant	YES	YES	YES	YES
Controls	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES
Observations	7,537	7,537	7,537	7,537
Adjusted R-squared	0.276	0.171	0.132	0.095

This table presents the results from regressing tone measures on 10 firm-level lagged ESG category scores and other firm-specific control variables. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. ESG category scores are estimated as the natural logarithm of lagged ESG constituent scores reported in Refinitiv. Other control variables are described in Table A1. Industry (Fama-French 48-industry classification) and year-quarter fixed effects are included. Standard errors are clustered at firm-level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Regression of Earnings Announcement Returns on Difference in Conference Call Tones by High/Low ESG Groups

VARIABLES	CAR [-1,+1]				CAR [+2, +60]			
	Low ESG		High ESG		Low ESG		High ESG	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RSUE	0.031***	0.029***	0.024***	0.023***	-0.004	0.001	-0.003	0.005
	(9.70)	(9.16)	(7.28)	(6.93)	(-0.48)	(0.14)	(-0.45)	(0.65)
RToneDifference	-0.010***	-0.011***	-0.008**	-0.009***	-0.004	-0.011	0.003	0.004
	(-3.04)	(-3.34)	(-2.50)	(-2.78)	(-0.43)	(-1.40)	(0.43)	(0.48)
RSUE*RToneDifference	0.004	0.005	0.008	0.008	-0.034**	-0.027**	0.004	0.006
	(0.77)	(0.83)	(1.56)	(1.52)	(-2.31)	(-2.06)	(0.32)	(0.45)
AGE		0.000		-0.001		0.000		0.004
		(0.13)		(-0.76)		(0.07)		(1.04)
SIZE		-0.001		-0.001		-0.014***		-0.008***
		(-0.76)		(-0.68)		(-4.78)		(-3.07)
MB		-0.000		0.000		-0.001		-0.002***
		(-0.94)		(0.14)		(-1.24)		(-3.66)
EARN		0.040		0.077		-0.172		-0.064
		(0.64)		(1.30)		(-1.08)		(-0.37)
ΔEARN		0.230***		0.206***		0.084		-0.056
		(2.88)		(2.90)		(0.43)		(-0.30)
STD(EARN)		-0.038		0.069		-0.321*		-0.257
		(-0.62)		(0.84)		(-1.83)		(-1.45)
DEBTRAT		-0.008		-0.008		-0.013		0.020
		(-1.25)		(-1.26)		(-0.75)		(1.18)
SGROWTH		0.008		0.017***		-0.026*		-0.007
		(1.41)		(2.89)		(-1.74)		(-0.48)
MOM		-0.034***		-0.029***		-0.531***		-0.542***
		(-3.47)		(-3.30)		(-20.31)		(-21.69)
STD(RET)		-0.027		0.045		0.078		-0.033
		(-0.84)		(1.38)		(0.83)		(-0.30)
No of Analysts		-0.003		-0.000		0.012**		0.007
		(-1.08)		(-0.03)		(2.10)		(1.20)
IO		0.005		0.011*		-0.015		-0.002
		(0.86)		(1.78)		(-0.83)		(-0.15)
Introduction Wordcount		0.000		-0.001		0.005**		-0.002
		(0.02)		(-1.41)		(2.19)		(-0.91)
Manager QA Wordcount		-0.001		0.000		-0.001		0.000
		(-1.23)		(0.05)		(-0.69)		(0.12)
Analyst QA Wordcount		-0.002		0.000		0.001		0.005
		(-0.94)		(0.03)		(0.20)		(1.18)
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Observations	3,781	3,781	3,755	3,755	3,781	3,781	3,755	3,755
Adjusted R-squared	0.111	0.122	0.093	0.107	0.021	0.186	0.009	0.185
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES

This table presents the results from regressing earnings announcement returns on Tone Difference in conference calls and other firm-specific control variables for high and low ESG groups. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. Earnings announcement returns are reported as the market-model-adjusted cumulative abnormal returns, estimated within the 60-day window [-80,-20], around earnings announcements. RSUE is the quarterly decile rank for the firm in SUE, ranging from -1 to 1. RToneDifference is the quarterly decile rank for the firm in Tone Difference, ranging from 0 to 1. Firms with ESG Combined Score above (below) median ESG Combined Score are classified as the high (low) ESG group in each fiscal quarter. Other control variables are described in Table A1. Industry (Fama-French 48-industry classification) and year-quarter fixed effects are included. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 6. Regression of Earnings Announcement Returns on RSUE and RESG by High/Low ToneDifference Groups

	CAR [-1,+1]				CAR [+2, +60]			
VARIABLES	Low ToneDifference		High ToneDifference		Low ToneDifference		High ToneDifference	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
RSUE	0.029***	0.028***	0.042***	0.041***	-0.004	0.001	-0.039***	-0.022**
	(7.83)	(7.09)	(9.34)	(8.90)	(-0.43)	(0.07)	(-3.25)	(-1.99)
RESG	0.002	0.004	0.001	0.002	0.002	0.007	-0.002	-0.001
	(0.54)	(1.00)	(0.24)	(0.48)	(0.16)	(0.70)	(-0.23)	(-0.08)
RSUE*RESG	-0.004	-0.003	-0.020***	-0.020***	0.002	0.004	0.044**	0.039**
	(-0.59)	(-0.42)	(-2.84)	(-2.83)	(0.16)	(0.30)	(2.33)	(2.26)
AGE		-0.001		0.002		0.005		0.000
		(-0.38)		(1.03)		(1.24)		(0.06)
SIZE		0.000		-0.001		-0.016***		-0.005
		(0.28)		(-0.92)		(-4.69)		(-1.41)
MB		0.000		-0.000		-0.000		-0.002**
		(0.43)		(-1.10)		(-0.24)		(-2.47)
EARN		0.048		0.055		0.238		-0.228
		(0.72)		(0.67)		(1.03)		(-1.29)
ΔEARN		0.189**		0.199**		0.054		-0.118
		(2.01)		(2.13)		(0.22)		(-0.59)
STD(EARN)		0.064		-0.036		-0.193		-0.217
		(0.75)		(-0.36)		(-0.82)		(-1.00)
DEBTRAT		-0.003		0.002		-0.005		-0.006
		(-0.41)		(0.20)		(-0.25)		(-0.29)
SGROWTH		0.016**		0.010		-0.001		-0.058***
		(2.32)		(1.18)		(-0.05)		(-3.49)
MOM		-0.035***		-0.023*		-0.527***		-0.541***
		(-2.93)		(-1.90)		(-16.08)		(-16.29)
STD(RET)		0.071		-0.040		0.056		0.093
		(1.63)		(-0.87)		(0.47)		(0.82)
No of Analysts		-0.002		0.001		0.000		0.019***
		(-0.77)		(0.29)		(0.05)		(2.72)
IO		0.015*		0.009		-0.003		-0.036**
		(1.87)		(1.27)		(-0.15)		(-2.05)
Introduction Wordcount		-0.002*		0.001		0.002		0.002
		(-1.83)		(0.61)		(0.66)		(0.74)
Manager QA wordcount		0.000		-0.002		0.001		-0.002
		(0.15)		(-1.42)		(0.25)		(-0.68)
Analyst QA wordcount		0.000		0.002		0.003		-0.001
		(0.11)		(0.68)		(0.50)		(-0.11)
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Observations	2,531	2,531	2,497	2,497	2,531	2,531	2,497	2,497
Adjusted R-squared	0.091	0.103	0.120	0.126	0.015	0.172	0.002	0.183
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES

This table presents the results from regressing earnings announcement returns on RSUE and RESG in conference calls and other firm-specific control variables for high and low ToneDifference groups. RSUE is the quarterly decile rank for the firm in SUE, ranging from -1 to 1. RESG is the quarterly decile rank for the firm in ESG Combined Score, ranging from 0 to 1. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. Earnings announcement returns are reported as the market-model-adjusted cumulative abnormal returns, estimated within the 60-day window [-80,-20], around earnings announcements. Firms with Tone Difference in the highest (lowest) tercile are classified as the high (low) ToneDifference group in each fiscal quarter. Other control variables are described in Table A1. Industry (Fama-French 48-industry classification) and year-quarter fixed effects are included. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 7. Regression of Tones in Conference Calls on ESG with Earnings Management Controls

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Introduction-Manager Tones		*Q&A-Manager Tones*		*Q&A- Analyst Tones*		*Tone Difference*	
Log(ESG_Score)	**0.065***	**0.065***	**0.033*	**0.034*	**0.013	**0.012	**0.055***	**0.056***
	(3.20)	**(3.20)**	**(1.81)**	**(1.82)**	**(1.00)**	**(0.97)**	**(2.82)**	**(2.83)**
SUE	4.874***	5.546***	2.802***	3.546***	4.319***	4.608***	0.518	0.913
	(5.88)	(5.18)	(3.31)	(2.93)	(4.96)	(4.25)	(0.47)	(0.65)
DA	-0.179		0.185		0.017		-0.186	
	(-1.38)		(1.52)		(0.14)		(-1.15)	
SUE*DA	-47.508***		-37.180**		-2.719		-46.143**	
	(-3.21)		(-2.00)		(-0.15)		(-2.43)	
Abs(DA)		-0.380*		-0.005		-0.231		-0.150
		(-1.80)		(-0.03)		(-1.29)		(-0.62)
SUE*Abs(DA)		-27.038		-26.429		-10.237		-17.269
		(-1.41)		(-0.96)		(-0.40)		(-0.62)
Observations	6,549	6,549	6,549	6,549	6,549	6,549	6,549	6,549
Adjusted R-squared	0.257	0.256	0.160	0.160	0.118	0.118	0.092	0.091
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES

This table presents the results from regressing tone measures on ESG and firm's discretionary accruals and other firm-specific control variables. DA is quarterly performance-matched discretionary accruals for the firm following Kothari, Leone and Wasley (2005) and Linck, Netter and Shu (2013). Abs(DA) is the absolute value of DA. Control variables are included, consistent with Table 3. Industry (Fama-French 48-industry classification) and year-quarter fixed effects are included. Standard errors are clustered at firm-level. T-stats are reported in the parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 8. Regression of Earnings Announcement Returns on RSUE, RToneDifference and RESG with Control Variables on Earnings Management

Panel A: High/Low ESG Firms								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Low ESG		High ESG		Low ESG		High ESG	
VARIABLES	CAR [-1, +1]				CAR [+2, +60]			
RSUE	**0.035*****	**0.035*****	**0.023*****	**0.023*****	**0.002**	**0.002**	**0.007**	**0.007**
	(9.76)	**(9.73)**	**(6.20)**	**(6.20)**	**(0.27)**	**(0.26)**	**(0.84)**	**(0.85)**
RToneDiff	**-0.012*****	**-0.012*****	**-0.011*****	**-0.011*****	**-0.008**	**-0.009**	**-0.000**	**-0.000**
	(-3.28)	**(-3.26)**	**(-3.31)**	**(-3.31)**	**(-0.99)**	**(-1.00)**	**(-0.03)**	**(-0.03)**
RSUE*RToneDiff	**-0.000**	**-0.000**	**0.009**	**0.010***	**-0.029***	**-0.029***	**0.009**	**0.009**
	(-0.06)	**(-0.07)**	**(1.62)**	**(1.69)**	**(-1.90)**	**(-1.90)**	**(0.60)**	**(0.63)**
DA	-0.052		-0.059		-0.021		-0.086	
	(-1.27)		(-1.57)		(-0.22)		(-0.98)	
Abs(DA)		0.047		0.115**		-0.094		0.119
		(0.91)		(2.59)		(-0.63)		(1.01)
Observations	3,229	3,229	3,319	3,319	3,229	3,229	3,319	3,319
Adjusted R-squared	0.139	0.138	0.112	0.112	0.186	0.186	0.185	0.185
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES

Panel B: High/Low ToneDifference Firms

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Low ToneDifference		High ToneDifference		Low ToneDifference		High ToneDifference	
	CAR [-1, +1]				CAR [+2, +60]			
RSUE	0.032***	0.032***	0.044***	0.044***	0.002	0.002	-0.020*	-0.020*
	(7.34)	(7.32)	(9.04)	(9.08)	(0.22)	(0.23)	(-1.69)	(-1.71)
RESG	0.008*	0.008*	0.001	0.001	0.007	0.007	-0.003	-0.003
	(1.83)	(1.91)	(0.36)	(0.34)	(0.66)	(0.65)	(-0.30)	(-0.32)
RSUE*RESG	-0.006	-0.006	-0.022***	-0.022***	0.005	0.005	0.039**	0.038**
	(-0.91)	(-0.88)	(-2.96)	(-2.94)	(0.28)	(0.29)	(2.17)	(2.12)
DA	-0.050		-0.106**		0.088		-0.035	
	(-1.00)		(-2.34)		(0.71)		(-0.31)	
Abs(DA)		0.073		0.067		0.157		-0.265
		(1.30)		(1.03)		(0.93)		(-1.56)
Observations								
Adjusted R-squared	2,095	2,095	2,270	2,270	2,095	2,095	2,270	2,270
Constant	0.113	0.113	0.136	0.134	0.173	0.173	0.180	0.181
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES

This table presents the results from adding the control variables on earnings management to regressions in Table 5 and 8 in Panel A and B respectively. DA is quarterly performance-matched discretionary accruals for the firm following Kothari, Leone and Wasley (2005) and Linck, Netter and Shu (2013). Abs(DA) is the absolute value of DA. Control variables are included, consistent with Table 5 and 8. Industry (Fama-French 48-industry classification) and year-quarter fixed effects are included. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 9. Regression of Conference Call Tones on ES_Score and SUE

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Introduction-Manager Tones			*Q&A-Manager Tones*			*Q&A- Analyst Tones*			*Tone Difference*		
Log(ES_Score)	0.148**	0.111	0.107	0.138**	0.106	0.109	-0.059	-0.047	-0.049	0.207***	0.157**	0.156**
	(2.12)	(1.32)	(1.28)	(2.33)	(1.53)	(1.56)	(-1.25)	(-0.87)	(-0.91)	(3.22)	(2.02)	(2.00)
SUE	6.365***	4.347***	-3.194	4.135***	2.923***	8.939	5.329***	4.037***	0.072	1.178	0.464	-1.802
	(8.00)	(5.60)	(-0.41)	(5.86)	(4.08)	(1.03)	(7.47)	(5.52)	(0.01)	(1.34)	(0.51)	(-0.18)
Log(ES_Score)*SUE			5.662			-4.517			2.977			1.701
			(0.95)			(-0.68)			(0.48)			(0.23)
Observations	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537	7,537
Adjusted R-squared	0.235	0.272	0.272	0.149	0.169	0.169	0.102	0.128	0.128	0.079	0.093	0.093
Constant	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

This table presents the results from regressing tone measures on firm's lagged ES_Score and other firm-specific control variables. Tones are calculated as the difference between positive and negative word counts divided by the sum of positive and negative word counts in each section. Tone difference measures the difference between managerial tone in introduction and analyst tone in Q&A. ES_Score are calculated as 0.4892*Env+0.5108*Soc. Control variables are consistent with Table 3. Industry (Fama-French 48-industry classification) and year-quarter fixed effects are included. Standard errors are clustered at firm-level. T-stats are reported in the parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 10. Regression of Earnings Announcement Returns on RSUE, RToneDifference and RES

Panel A: High/Low ES Firms

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Low ES		High ES		Low ES		High ES	
	CAR [-1,+1]				CAR [+2, +60]			
RSUE	0.031***	0.029***	0.023***	0.022***	0.005	0.007	-0.014*	-0.003
	(9.52)	(8.96)	(7.23)	(6.84)	(0.59)	(0.96)	(-1.73)	(-0.40)
RToneDiff	-0.010***	-0.011***	-0.008***	-0.009***	-0.002	-0.006	-0.000	-0.000
	(-3.15)	(-3.42)	(-2.67)	(-3.02)	(-0.18)	(-0.74)	(-0.02)	(-0.01)
RSUE*RToneDiff	0.004	0.005	0.008	0.007	-0.038**	-0.024*	0.012	0.006
	(0.73)	(0.92)	(1.49)	(1.39)	(-2.55)	(-1.77)	(0.83)	(0.43)
Observations	3,780	3,780	3,756	3,756	3,780	3,780	3,756	3,756
Adjusted R-squared	0.114	0.130	0.087	0.096	0.016	0.180	0.008	0.194
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES

Panel B: High/Low ToneDifference Firms

VARIABLES	(1) Low ToneDifference	(2) Low ToneDifference	(3) High ToneDifference	(4) High ToneDifference	(5) Low ToneDifference	(6) Low ToneDifference	(7) High ToneDifference	(8) High ToneDifference
	CAR [-1,+1]				CAR [+2, +60]			
RSUE	0.035***	0.033***	0.043***	0.043***	0.001	0.005	-0.039***	-0.018
	(8.92)	(8.20)	(9.86)	(9.43)	(0.10)	(0.54)	(-3.15)	(-1.51)
RES	-0.003	0.000	-0.003	-0.001	-0.002	0.030**	0.004	0.002
	(-0.85)	(0.10)	(-0.66)	(-0.14)	(-0.21)	(2.52)	(0.48)	(0.20)
RSUE*RES	-0.016**	-0.014**	-0.023***	-0.024***	-0.008	-0.006	0.045**	0.030*
	(-2.45)	(-2.19)	(-3.19)	(-3.27)	(-0.51)	(-0.38)	(2.29)	(1.65)
Observations	2,531	2,531	2,497	2,497	2,531	2,531	2,497	2,497
Adjusted R-squared	0.094	0.105	0.121	0.127	0.016	0.174	0.002	0.182
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Year-Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES

This table presents the results from replacing the variables based on ESG Combined Score with the variables based on ES Scores in regressions in Table 5 and 8 in Panel A and B respectively. ES_Score are calculated as 0.4892*Env+0.5108*Soc. Control variables are included, consistent with Table 5 and 8. Industry (Fama-French 48-industry classification) and year-quarter fixed effects are included. Standard errors are clustered at firm level. T-stats are reported in the parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Appendix

Table A1: List of Variables

Name	Description	Source
Introduction-Manager Tones	Tones of the words spoken by management in the introduction section during the conference call calculated by equation (1)	Fair Disclosure Wire
Q&A-Manager Tones	Tones of the words spoken by management in the Q&A section during the conference call calculated by equation (1)	Fair Disclosure Wire
Q&A-Analyst Tones	Tones of the words spoken by analyst in the Q&A section during the conference call calculated by equation (1)	Fair Disclosure Wire
Tone Difference	*Introduction-Manager Tones - Q&A-Analyst Tones*	Fair Disclosure Wire
RToneDiff	Quarterly decile ranks for the firm in *Tone Difference*, ranging from 0 to 1.	Fair Disclosure Wire
Introduction wordcount	Ln (1+number of total words spoken by management in the introduction section during the conference call).	Fair Disclosure Wire
Manager QA wordcount	Ln (1+number of total words spoken by management in the Q&A section during the conference call).	Fair Disclosure Wire
Analyst QA wordcount	Ln (1+number of total words spoken by analyst in the Q&A section during the conference call).	Fair Disclosure Wire
SUE	(IBES actual EPS – median of most recent analysts' forecasts) ÷ stock price at the fiscal quarter end (**prccq**)	IBES, Compustat Quarter
RSUE	Quarterly decile ranks for the firm in *SUE*, ranging from -1 to 1.	IBES, Compustat Quarter
Log(ESG_Score)	Natural logarithm of lagged ESG Combined Score.	Refinitiv
EARN	Earnings before extraordinary items (**ibq**) ÷ beginning total assets(**atq**)	Compustat Quarterly
ΔEARN	Change in EARN	Compustat Quarterly
STD(EARN)	Standard deviation of EARN over the last five quarters	Compustat Quarterly

SIZE	Ln (market value of equity at the fiscal quarter end ((**prccq*** **cshoq**))	Compustat Quarterly
M/B	Market-to-book ratio measured at the fiscal year end ((**prccq*** **cshoq/ceqq**)	Compustat Quarterly
DEBTRAT	Total outstanding debt (**dlcq**+**dlttq**) ÷ beginning total assets	Compustat Quarterly
SGROWTH	Change in sales (**saleq**) from sales 4 quarters prior ÷ sales	Compustat Quarterly
AGE	Ln (1 + number of years since a firm appears in CRSP monthly file)	CRSP
MOM	Buy-and-hold monthly returns for 60 trading days prior to the conference call	CRSP
STD(RET)	Standard deviation of monthly returns over the last 12 months ending three months after the fiscal quarter;	CRSP
IO	The percentage of outstanding shares owned by institutional investors	Thomson Reuters 13/F
No of Analysts	Ln (1 + number of analysts following)	IBES