Discretionary Tone, Annual Earnings and Market Returns:
Evidence from UK Interim Management Statements

Sheehan Rahman[1]

10 June 2019

[1] Lecturer in Accounting, Department of Economics and Finance, College of Business and Social Sciences, Brunel University London. Address: Room 239 Marie Jahoda Building, Kingston Lane, Uxbridge UB8 3PH, UK. Corresponding author. Please refer all correspondence to Sheehan.Rahman@brunel.ac.uk.

Discretionary Tone, Annual Earnings and Market Returns:

Evidence from UK Interim Management Statements

Abstract: This study contributes to the tone management literature by examining the discretionary tone of Interim Management Statements (IMSs) in the context of UK quarterly reporting. Specifically, it provides evidence that the discretionary tone of third-quarter IMSs, but not first-quarter IMSs, is positively aligned with annual earnings. Further analysis reveals a negative association between third-quarter discretionary negative tone and annual earnings. The discretionary tone is also more positively aligned with contemporaneous abnormal market returns in the third quarter than in the first quarter. Additional analysis provides new insights on the efficacy of the IMS discretionary positive tone during the 2008 financial crisis, and on the policy debate of the IMS as an alternative to the full quarterly report.

Keywords: Tone Management, Discretionary Tone, Textual Analysis, Interim Management Statements.

1. Introduction

In recent times, the tone of financial disclosures has received considerable attention in accounting research. While much of this research relates to the informativeness of the tone (e.g. Davis, Piger & Sedor, 2012; Demers & Vega, 2014; Henry, 2008; Henry & Leone, 2016; Loughran & McDonald, 2011; Schleicher & Walker, 2010; Tetlock, Saar-Tsechansky, & Macskassy, 2008), relatively little attention has been paid to the techniques of tone manipulation. One such technique is tone management, which involves making the textual tone disproportionate to the concurrent quantitative information, to influence the investor (Huang, Teoh, & Zhang, 2014). It is based on the idea that the tone consists of a non-discretionary component and a discretionary component. The non-discretionary tone is directly proportional to the concurrent quantitative financial information and represents little to no surprise information. In contrast, the discretionary tone is disproportionately positive or negative to the concurrent quantitative information (Huang et al., 2014). Depending on managerial incentives and ability, the discretionary tone may align with either decision-useful information or misleading information, to either enhance or hamper the investors' understanding of the firm fundamentals. The only study so far that directly examines tone management is Huang et al. (2014). They find that the discretionary tone of US annual earnings press releases is negatively associated with future annual earnings and conclude that the discretionary tone misleads the investors of future performance.

This paper contributes to the sparse tone management literature by examining the discretionary tone of UK Interim Management Statements (IMSs). IMSs are lightly-regulated trading updates that firms listed in the UK and EU regulated markets disclose twice a year, one for the first quarter and one for the third quarter. They were originally a policy initiative of the EU Commission, introduced via the Transparency Directive with a view to increasing investor confidence in the aftermath of Enron and other accounting

scandals (Schleicher & Walker, 2015). The typical IMS is a two-page long disclosure composed mostly of textual narratives. While the content of IMS is voluntary, much like earnings press releases, they usually describe a firm's financial performance for the quarter (Deloitte & Touché, 2007). Although IMSs generally contain a good mixture of qualitative and quantitative information, managers are free to determine what financial line-items to disclose, if any, and whether to use numbers. Managers also disclose any transactions or events deemed to have a material influence on the financial performance. Therefore, IMSs provide managers with considerable opportunity to engage in tone management, to influence investors' assessments of firms' financial performance.

In this study, I argue that the discretionary tone of third-quarter IMSs is expected to be more positively aligned with annual earnings than that of first-quarter IMSs. First, at the start of the year, both managers and investors have relatively less firm fundamental information available to them. Therefore, managers are more likely to deliberately or unknowingly mislead the investors on the expected annual results. As the year unfolds, managers acquire more information, and so do the investors – via interim disclosures, and in some cases, media articles. This not only lowers the possibility of inaccurate managerial predictions, but also increases the market penalty of easily falsifiable claims. Hence, the discretionary tone is expected to be more positively aligned with the annual earnings nearer the end of the year than at the start.

Second, the earnings management literature documents that managers in both well-performing and poorly performing firms are more likely to manage their earnings at the end of the year than at the start (Das, Shroff, & Zhang, 2009). Earnings management involves manipulating the earnings number to fit with the managers' objectives (Dechow, Sloan, & Sweeny, 1995). Because tone and earnings management are both used to influence investor perceptions, at a given point in time, there is likely to be at least a partial trade-off between

the two, to ensure consistency of information. For instance, after earnings is managed to fit with managers' objectives, to avoid confusing the investors, it is important that tone is proportionate to the earnings number. A greater propensity to manage earnings at the year-end is likely to reduce incentives for concurrent tone management, leading to a more positive alignment between the discretionary tone and annual earnings nearer the year-end.

Consistent with the aforementioned prediction, I find that the IMS discretionary tone is positively aligned with annual earnings in the third quarter but not in the first-quarter. Further investigation reveals that this alignment is chiefly due to the tone of third-quarter discretionary negative clauses being more consistent with the annual results. This implies managers are more likely to provide negative information on the annual results in their third-quarter IMSs as opposed to the first-quarter IMSs. Subsequent market reaction tests also indicate a stronger positive alignment between third-quarter IMS discretionary tone and contemporaneous abnormal market returns than in the first quarter. The non-discretionary tone component is unaligned with both year-end earnings and abnormal market returns, consistent with it coinciding with little to no incremental information. Additional analysis reveals new insights on the importance of the IMS discretionary tone in financial communication, especially on the effectiveness of discretionary positive clauses of first-quarter IMSs during the 2008 financial crisis and on the IMS as an alternative to full quarterly reports.

The rest of the paper is organized as follows. Section 2 reviews the background literature on tone and discusses the role of IMSs in UK quarterly reporting. Section 3 details the textual analysis, sampling, and variable measurements. Section 4 reports the main empirical findings while Section 5 discusses the results of additional analyses. Section 6 discusses the findings in terms of their policy significance and concludes.

2. Background

2.1. The relationship between tone and financial performance

Tone is the sentiment of textual narratives in a financial disclosure (Henry, 2008; Henry & Leone, 2016; Hoskin, Hughes, & Ricks, 1986; Loughran & McDonald, 2011; Rahman et al., 2019; Schleicher & Walker, 2010, 2015). Extant financial communication literature suggests that the tone is positively aligned with the firm's financial performance (e.g. Davis et al., 2012: Demers & Vega, 2014; Li, 2010; Schleicher & Walker, 2010). The primary reason advanced for this alignment is the managerial incentive to reduce information asymmetry (Davis et al., 2012; Verrechia, 2001). Textual narratives provide managers with the opportunity to disclose relevant information absent in the quantitative financial reports, perhaps due to reporting constraints (Hutton, 2004). Consistent with the expectations-adjustment hypothesis, when managers compare the costs and benefits of truthful disclosures, they conclude that, on average, the benefits outweigh the costs. Hence, on average, the tone represents managers' truthful assessments of the financial performance. In line with this argument, Davis et al. (2012) find that the tone of US quarterly earnings press releases increases with higher future earnings. They conclude that managers use the tone to communicate credible information about expected future performance.

Several other studies suggest that managers use the textual tone to signal their assessments of financial performance to investors.[2] Despite different reporting contexts, these studies find evidence of positive associations between the tone and financial performance. For instance, Demers and Vega (2011) examine the conditions under which

---

[2] Additionally, several studies examine the usefulness of linguistic characteristics in financial communication. For example, Francis, Philbirck and Schipper (1994) examine the tone of shareholder-litigated disclosures that allegedly misled the market. They find that the existence of prior and concurrent disclosures reduces the severity and incidence of litigation. Mangen and Durnev (2012) analyse the tone of corporate financial restatements and find that the tone provides news about the restating firm's private information regarding future investment payoffs. Lehavy, Li and Merkley (2011) examine the readability of US 10-K filings and find that analyst reports of firms with less readable 10-Ks are more informative. Overall, these studies are consistent with linguistic features of disclosures like the tone and readability signalling information to the market.

the tone of US quarterly earnings announcements can predict future firm fundamentals. They argue that conservative GAAP rules prevent the earnings number from recognizing even highly likely future positive earnings news, and that managers use the textual tone to signal such news. Consistent with these assertions, they find that the tone is positively aligned with future earnings. Further, Li (2010) argues that the tone of forward-looking statements signals future profitability, as managers use forward-looking statements to adjust investor expectations. He examines MD&A sections of 10-K and 10-Q filings in the US and finds that the average tone is positively associated with future earnings. Further, the tone has greater explanatory power for future performance than current earnings, stock returns and accruals. Similarly, Schleicher and Walker (2010) examine the frequency of positive and negative forward-looking statements in UK annual reports. They predict and find that firms with increasing annual earnings have more positive but fewer negative statements, consistent with the tone having a positive association with future earnings.

2.2. Tone management

Financial disclosures provide quantitative and textual information simultaneously. Textual narratives help investors to interpret and evaluate the quantitative information (Fiske & Taylor, 1991). In the absence of strict disclosure rules, managers use the textual tone to enhance (hamper) investors' understanding of the financial performance by signalling incremental (misleading) information. This process is called tone management – making the tone disproportionately positive or negative to the concurrent quantitative information, to influence investors' assessment of firm fundamentals (Huang et al., 2014).

The basic premise of tone management is that the disclosure tone is composed of a non-discretionary (or normal) component and a discretionary (or abnormal) component. The non-discretionary tone neutrally reflects the concurrent quantitative information (Huang et al., 2014). In other words, it varies in direct proportion to the corresponding quantitative

7

disclosures, coinciding with little to no incremental (or 'surprise') information. Therefore, the non-discretionary tone is expected to have either a weak positive or no alignment with financial performance.

On the other hand, the discretionary tone is disproportionately positive or negative to the concurrent quantitative information. Indeed, the term 'discretionary' implies that managers have the latitude to use it in different ways to influence the investor. For instance, depending on managerial motives and ability, it may align with incremental decision-useful information, misleading information or noise (Huang et al., 2014). The discretionary tone is expected to have a positive (negative, no) alignment with financial performance if it coincides with incremental (misleading, irrelevant) information.

Market reaction tests can indicate how investor responses align to the signal in these two tone components.[3] Assuming a semi-strong efficient market, the non-discretionary tone is expected to have either a weak positive or no alignment with abnormal market returns around the disclosure of financial reports. In contrast, the discretionary tone is expected to have a positive (negative, no) association with abnormal market returns if investors believe it aligns with incremental (misleading, irrelevant) information (Huang et al., 2014).

2.3. Tone management vs earnings management

Earnings management is the choice of accounting policies to provide an earnings number that fits with the managers' objectives (Dechow et al., 1995). There are at least two major differences between tone and earnings management. First, tone management involves changing the disclosure tone, not accounting policies. Second, when tone management is informative, it does not lower the accounting quality. In contrast, earnings management is

---

[3] Extant literature documents a positive association between the tone and abnormal market returns around the disclosure of annual reports, earnings press releases, trading updates and IMSs (e.g. Henry, 2008; Henry & Leone, 2016; Davis et al., 2012; Rahman et al., 2019; Tetlock et al., 2008). This indicates the investors, on average, find the disclosure tone to be decision-relevant and align their responses to the signal in the tone accordingly for decision making.

almost always strategic and leads to a decline in the accounting quality (Dechow, Ge, & Schrand, 2010).

The main similarity between tone and earnings management is that both are tools for manipulating investor assessments (Huang et al., 2014; Teoh, Welch & Wong, 1998). This implies earnings management at least partially substitutes the need for concurrent tone management – an increase in one leads to a decline in the other. For instance, to successfully influence investors' assessments of a managed earnings result, it is important that the textual tone is not disproportionate to the reported earnings. This also implies that the effect of tone management should be measured incremental to earnings management efforts.

A more remote similarity is in the measurement approach. Earnings management is often determined by dividing accruals into non-discretionary and discretionary components. Non-discretionary accruals are unrealised obligatory expenses that arise due to accounting regulations or business conditions, while discretionary accruals are unrealized non-obligatory expenses that managers choose to recognize in one period instead of another (Healy, 1985). Therefore, discretionary accruals provide managers with the opportunity to manipulate the earnings number, and is frequently used as a proxy for earnings management (Dechow et al., 1995; Hribar & Collins, 2002; Jones, 1991; Zang, 2012).

2.3. The alignment between discretionary tone and annual earnings

The only study to date that directly examines tone management is Huang et al. (2014). They divide the tone of a sample of US annual earnings press releases into non-discretionary and discretionary components. They find that the non-discretionary tone has a weak positive association with annual earnings and no specific association with abnormal market returns. In contrast, the discretionary tone is *negatively* aligned with future annual earnings over and above earnings management, suggesting that managers use it to misinform investors on future performance. However, the discretionary tone is positively

aligned with the abnormal market returns around the disclosure of these earnings press releases, indicating that investors are at least initially misled by it. Nevertheless, the market corrects itself over the next two months, presumably after investors learn the accurate information.

In this paper, I argue that the alignment between the discretionary tone and annual earnings is expected to be more positive if the disclosure is released towards the end of the year than at the start. I believe there are at least two reasons for this. First, the start of the year is a highly susceptible time for managers to purposefully or unknowingly mislead investors on the year-end results, as both parties have relatively little information. Over the course of the year managers learn more information, and so does the market – via interim disclosures or trading updates. Thus, attempts to misinform investors on the annual results is more difficult towards the year-end, as getting caught with falsifiable statements risks managerial penalties. Given this, the more the year unfolds, the less the discretionary tone is likely to coincide with misleading information. Therefore, the discretionary tone is likely to be more positively aligned with the annual earnings near the year-end than at the start.

Second, the earnings management literature suggests that managers engage in greater earnings management activities towards the end of the year than at the start. Specifically, Das et al. (2009) suggest that firms performing poorly in interim quarters may seek to increase earnings in the fourth quarter to meet their targets while firms performing well in interim quarters may seek to decrease earnings in the fourth quarter to build 'reserves' for the future. Greater earnings management efforts towards the year-end are likely to diminish tone management incentives, making the alignment between discretionary tone and annual earnings more positive towards the year-end compared to the start.

2.4. The case for interim management statements

To test the aforementioned hypothesis, I investigate tone management in Interim Management Statements (IMSs) the largely unregulated setting of UK quarterly reporting. The IMS is a trading update mandated in 2007 by the EU Transparency Directive (Directive 2004/109/EC) for firms trading in the UK and EU regulated markets. It is considered a simple, short and low-cost alternative to full US-style quarterly reports, designed to reduce information asymmetry and increase investor protection (Deloitte & Touché, 2007). An IMS describes the firm's financial performance and position, and discloses any relevant material events and transactions (EU, 2004). IMSs generally provide a (qualitative) sales or earnings forecast, and an outlook of the trading and business environment (Schleicher & Walker, 2015). Firms that disclose fully-fledged quarterly reports based on International Financial Reporting Standards (IFRS) rules are exempt from publishing IMSs. However, as the UK did not previously have mandatory quarterly reporting, the introduction of IMSs increased the annual reporting frequency of most firms from two to four mandatory disclosures. For instance, about 90% of FTSE All-Share Index firms now had to disclose a regular quarterly update for the first time (Ernstberger, Link, Stich & Volger, 2017; Schleicher & Walker, 2015). While the EU removed the mandatory requirement to disclose IMSs since 2014, most firms continue to publish them to date (SEC, 2018; Rahman et al., 2019).[4]

I argue several features make the IMS an interesting context for this study. First, a firm is mandated to disclose one IMS in the first quarter and one IMS in the third quarter of the financial year. The IMS is disclosed within a ten-week window starting at the end of the quarter it pertains to, until the beginning of the following quarter (Deloitte & Touché, 2007; Schleicher & Walker, 2015). This implies that first (third) quarter IMSs are disclosed towards the end of the first (third) quarter or at the beginning of the second (fourth) quarter. Managerial incentives for misleading tone management are likely to be lower in the third

---

[4] After abolishing mandatory IMSs in 2014, a survey of 516 UK firms showed that 91.3% continued to issue IMSs (IMSs referred to as 'UK Quarterly Reports' in SEC (2018)) in the year 2015.

and fourth quarters than in the first and second quarters. Thus, the timing and frequency requirement makes the IMS a preferable disclosure for identifying any patterns in the alignment between discretionary tone and annual earnings.

Second, unlike 10-K or 10-Q reports, an IMS is not required to provide full financial statements (Ernstberger et al., 2017). The Transparency Directive gives managers complete discretion on which line-item(s) to disclose, if any, whether to report numbers, and what transactions and events are to be deemed 'material' (Deloitte & Touché, 2007). Hence, despite being mandatory disclosures during 2007 – 2014, the content of IMSs has always been voluntary, offering managers a wide latitude to engage in tone management.[5]

Third, the average IMS is only between one and two pages in length (Schleicher & Walker, 2015). This makes the IMS a preferable option for full-document manual textual analysis over longer disclosures like 10-Q reports that have to rely on computerized textual analysis (Rahman et al., 2019). Manual textual analysis is better than computerized word counts in capturing meaning and contextual differences, and thus provides a more accurate measure of the tone (Clatworthy & Jones, 2003; Schleicher & Walker, 2010). Manual textual analysis also allows the researcher to distinguish text corpus (e.g. sentences, clauses or paragraphs) that convey a specific piece of information, or discuss a particular topic. Further, manual tone has greater explanatory power than automated tone for abnormal market returns around the disclosure of IMSs (Rahman et al., 2019). In addition, unlike its automated counterparts, the more context-accurate manual tone rarely requires large samples to reliably identity trends and patterns.

---

[5] Textual analysis on IMSs provide evidence of a mixture of quantitative and textual information. Schleicher and Walker (2015) manually analyse 240 UK IMSs over the period 2009 – 2010. They find that 90% (25%) of IMSs report historical (forward-looking) sales while 45% (32%) report historical (forward-looking) earnings information. About 68% (4%) of the historical (forward-looking) sales and 32% (4%) of the historical (forward-looking) earnings are quantitative. 87% (83%) of IMSs provide additional disclosures on historical (forward-looking) performance. Similarly, Ernstberger et al. (2017) analyse a sample of 4896 IMSs in EU-15 countries over the period 2005 – 2014. They find that 88% of IMSs include quantitative financial information and 51% provide quarterly earnings information. However, only 9% of IMSs provide financial statements, suggesting that the disclosures are largely composed of narratives.

Finally, US President Donald Trump has recently called for abolishing US quarterly reports with a view to lowering firms' disclosure costs (Guardian, 2018). In response, the SEC has initiated a public consultation process expressing their interest in the EU's IMS experience as a low-cost alternative to quarterly reports that is capable of ensuring investor protection (SEC, 2018).[6] The findings of this study can contribute to this policy dialogue by providing evidence on the importance of the IMS tone in financial communication and in particular, in providing investor protection.

3. Methodology

3.1. Textual analysis

For this study, I adopt the textual analysis of Rahman et al. (2019). Specifically, I read the full text corpus of an IMS document and then manually compute the tone for each clause. A clause is a group of words that contains a distinct piece of information on a particular topic, typically consisting of a subject and a predicate (Rahman et al., 2019). As such, a clause may comprise of: (i) one complete textual sentence (ii) fragment of one textual sentence (where one sentence contains multiple clauses), and (iii) multiple sentences (typically in the rare case of repeated sentences). The unit of my textual analysis is the clause, not sentences.

After identifying a clause, I first classify its tone as: (i) *Positive* if performance is favourable (e.g. 'Sales increased by 10% over the period'), (ii) *Negative* if performance is unfavourable (e.g. 'Net income is expected to decline in the third quarter'), or (iii) *Neutral* if performance is either unchanged, in line with managerial expectations or market consensus, ambiguous, or if the clause is unrelated to performance. Based on the tone scores of each clause, I then measure a net tone score, $TONE_{itj}$, for the entire IMS document as follows:

---

[6] Also see Nallareddy, Pozen and Rajgopal (2017) on why the SEC is considering moving from quarterly to semi-annual reporting.

$$TONE_{itj} = (POSITIVE_{itj} – NEGATIVE_{itj}) / (POSITIVE_{itj} + NEGATIVE_{itj}) \qquad (1)$$

In Equation 1, $POSITIVE_{itj}$ and $NEGATIVE_{itj}$ refer to the total number of positive and negative clauses for firm i year t and IMS j. TONE ranges [–1, +1] and increases with greater optimism in sentiment. Additionally, for each IMS, I compute separate measures of the tone for positive and negative text corpus, termed positivity (POS_{itj}) and negativity (NEG_{itj}) respectively. Complementing the net tone score with separate positivity and negativity scores is consistent with textual analysis literature (Henry, 2008; Henry & Leone, 2016; Rahman et al., 2019). To measure positivity (negativity), I divide the number of positive (negative) clauses in an IMS by the total number of positive, negative and neutral clauses in the IMS. POS (NEG) ranges [0, 1], implying that the greater the number of positive (negative) clauses in an IMS, the greater is the positivity (negativity). Appendix A includes some examples of measuring the clause tone.

3.2. Sample selection

Table 1 illustrates the sample development process. I adopt the underlying sampling of Rahman et al. (2019). This sample was obtained from the list of FTSE All-Share Index constituents as at 30 June 2008, when a total of 668 firms were registered. After deducting 305 financial firms and 39 firms that disclosed full-quarterly reports, it left 324 non-financial firms mandated by the Transparency Directive to disclose IMSs. From this list, a random sample of 100 firms were selected. This sample size was chosen to produce an approximate number of IMSs that was not only convenient for full-text manual analysis but also adequate for identifying relevant patterns in econometric estimations. The sample comprised of 15 FTSE 100 firms, 38 FTSE 250 firms and 47 FTSE Small Cap firms – a proportional representation of the FTSE All-Share Index constituents.

Next, all IMSs disclosed by these 100 firms in the period 2008 – 2013 were collected from the *Perfect Information Navigator* database of regulatory filings. During this six-year sample period, IMSs were mandatory disclosures in the UK. Although IMSs were made mandatory from 2007 onwards, the first year was excluded due to 'teething' issues and low rates of compliance (Schleicher & Walker, 2015). Thus, the sample period increased the likelihood that firms: (a) disclosed two IMSs per year, and (b) disclosed their IMSs within the designated window of ten weeks. Additionally, firms during this period were more likely to comply with Article 6 of the Transparency Directive, which required IMSs to describe financial performance, not just report trading activities. Hence, the IMS tone was expected to more closely resemble the tone of financial performance than ordinary trading statements.

If each sample firm disclosed two IMSs for six years, it would have yielded a maximum of 1200 IMSs. 69 IMSs were lost due to firm delisting or collapse while another 109 IMSs were not disclosed. This yields a sample of 1022 IMSs, which was used by Rahman et al. (2019) in their study. To this tally, I add 10 IMSs misclassified in Perfect Information Navigator as production / operating updates, yielding a final sample of 1032 IMSs. This consists of 517 first-quarter IMSs and 515 third-quarter IMSs – an almost even representation of the two quarters. A year-by-year breakdown of the IMS sample reveals survivorship. However, the number of listed FTSE All-Share Index constituents had also decreased during the six-year sample period. Further, a breakdown of the sample by industry indicates that 77% of the IMSs are from three industries – Industrials, Consumer Goods and Consumer Services. This roughly corresponds to the proportion of firms from these three industries in the FTSE All-Share Index for non-financials.

[**Table 1 near here**]

3.3. Description of the IMS tone

In Table 2, I provide some descriptive statistics from IMS textual analysis, divided by the first and third quarters, and by year and industry. First, the average word-length of an IMS increases over the sample years, consistent with Beattie's (2014) assertion that the volume of discretionary narratives has increased over time. Across most years and industries, the average IMS is longer in the third quarter than in the first quarter. Firms in the Basic Materials and Telecommunication industries disclose the longest IMSs, while Healthcare firms disclose the shortest IMSs. Second, for most years and industries, the mean TONE is less optimistic in the third quarter than in the first quarter. This is because in third-quarter IMSs, there is a greater increase in the average number of negative clauses relative to positive clauses. Third, across the years and industries, there appears to be a positive (negative) association between mean TONE (NEG) and mean annual earnings, EARN. This is consistent with prior research findings that the tone aligns with financial performance (e.g. Davis et al., 2012; Demers & Vega, 2011; Li, 2010). Taken together, the results in Table 2 are consistent with the assertion that managers increase the number of negative clauses in the third-quarter IMSs to align the tone with the earnings result.

[**Table 2 near here**]

3.4. Variable measurements

3.4.1. Measuring discretionary accruals

As a proxy for earnings management, I measure discretionary accruals using the modified Jones model (Dechow et al., 1995; Zang, 2012; Huang et al., 2014). First, I compute total accruals as the difference between earnings and cash flows, as follows:

$$\text{TOTACC}_{itj} = \text{EBEI}_{itj} - (\text{CFO}_{itj} - \text{EIDO}_{itj}) \qquad (2)$$

In Equation 2, TOTACC refers to total accruals, EBEI refers to income before extraordinary items, CFO refers to cash flow from operations and EIDO refers to extraordinary items and discontinued operations included in CFO. I then calculate discretionary accruals DA_{itj} as the regression residuals of:

$$TOTACC_{itj} = \beta_1(1 / TA_{itj-1}) + \beta_2(CHSALES_{itj} - CHACCR_{itj}) + \beta_3PPE_{itj} + \varepsilon_{itj} \quad (3)$$

In Equation 3, TA refers to beginning total assets, CHSALES refers to annual change in sales, CHACCR refers to annual change in accruals from operating activities, and PPE refers to gross property, plant and equipment scaled by beginning total assets.

3.4.2. Measuring pre-managed profit level

I measure pre-managed profits to control for the information in the 'true' earnings level prior to managerial manipulation. By definition, pre-managed profit is the difference between reported earnings and discretionary accruals (Gore, Pope & Singh, 2007). Therefore, I measure pre-managed profit level, $PMPL_{itj}$, as follows:[7]

$$PMPL_{itj} = EPS_{itj} - DAS_{itj} \quad\quad\quad\quad\quad (4)$$

In Equation 4, EPS refers to the reported earnings per share and DAS refers to discretionary accruals DA divided by the number of shares outstanding.

3.4.3. Measuring normal and abnormal tone

Following Huang et al. (2014), I decompose the tone measure $TONE_{itj}$ into normal tone $NTONE_{itj}$ and abnormal tone $ABTONE_{itj}$. Further, I decompose the positivity measure POS_{itj} into normal positivity $NPOS_{itj}$ and abnormal positivity $ABPOS_{itj}$, and the negativity

---

[7] Given that earnings is conceptualised as the sum of cash flow and accruals, I alternatively measure the pre-managed profit level as the sum of cash flow from operations (net of extraordinary items and discontinued operations) and non-discretionary accruals (measured as the fitted value of regression in Equation 4). The results are qualitatively similar regardless of the measure used.

measure NEG$_{itj}$ into normal negativity NNEG$_{itj}$ and abnormal negativity ABNEG$_{itj}$. For this, I run regressions of TONE, POS and NEG on a list of tone determinants identified by Li (2010). These tone determinants include firm fundamental information that is typically available to investors at the time of disclosure. In particular, to control for the information in financial performance, I include annual profitability (EARN), a 1/0 loss indicator variable (LOSS), annual change in profitability (CHEARN) and unexpected earnings (UE). Additionally, I include variables for market returns (RET) and book-to-market value of equity (BTM) to capture information about growth opportunities and consensus analyst earnings forecast (ANFOR) to represent information about future firm performance. Further, I include measures for stock return volatility (STDRET) and earnings volatility (STDEARN) to capture the operating and business risk of a firm and company age (AGE) to capture the life cycle of the firm. I also include firm size (SIZE), the number of geographic segments (GEOSEG) and business segments (BUSSEG) to capture the firm's operating complexity [see Li (2010) for details]. All these variables are defined in Table 3. The expected tone models are as follows:

$$\text{TONE}_{itj} \text{ (or POS}_{itj} \text{ or NEG}_{itj}) = \alpha + \beta_1\text{EARN}_{itj} + \beta_2\text{STDEARN}_{itj} + \beta_3\text{CHEARN}_{itj} + \beta_4\text{RET}_{itj}$$
$$+ \beta_5\text{STDRET}_{itj} + \beta_6\text{SIZE}_{itj} + \beta_7\text{BTM}_{itj} + \beta_8\text{LOSS}_{itj} + \beta_9\text{AGE}_{itj} + \beta_{10}\text{BUSSEG}_{itj} +$$
$$\beta_{11}\text{GEOSEG}_{itj} + \beta_{12}\text{UE}_{itj} + \beta_{13}\text{ANFOR}_{itj} + \varepsilon_{itj} \tag{5}$$

Based on Equation 5, normal tone measures NTONE, NPOS and NNEG are calculated as the predicted values while abnormal tone measures ABTONE, ABPOS and ABNEG are calculated as the regression residuals. Hence, by construction, each normal tone measure is orthogonal to its corresponding abnormal tone, and the three abnormal tone measures are unrelated to the tone determinants.[8]

---

[8] For the three tone models in Equation 2, un-tabulated regression results show: (i) TONE is positively aligned with RET, UE and SIZE; (ii) POS is positively aligned with EARN, RET, SIZE and UE but negatively aligned with LOSS and GEOSEG; (iii) NEG is negatively aligned with RET, LOSS, GEOSEG and ANFOR ($p<0.1$ in

[**Table 3 near here**]

4. Results

4.1. Descriptive statistics

Table 4 presents the descriptive statistics of the variables used in this study. The mean and median TONE is positive, consistent with prior studies that financial disclosures convey a greater amount of positive than negative sentiment (e.g. Abrahamsomn & Amir, 1996; Henry & Leone, 2016). The POS and NEG variables indicate that on average, 24.6% (14.1%) of the statements appearing in an IMS convey a positive (negative) sentiment. By construction, the means of TONE, POS and NEG are equal to the means of NTONE, NPOS and NNEG respectively. The means of ABTONE, ABPOS and ABNEG are all 0 by definition but each of them has considerable standard deviation (coefficient of variation ≈ ∞). This implies wide variation in the discretionary tone across IMSs. About 14% of the IMSs are disclosed by loss firms. While volatility measures STDEARN and STDRET have high coefficients of variation (> 1), firm life cycle and complexity measures AGE, BUSSEG, GEOSEG all have low coefficient of variation (< 1).

[**Table 4 near here**]

Un-tabulated correlation coefficients indicate that abnormal positivity (abnormal negativity) is overall in line with the tone of the positive (negative) clauses. Specifically, both TONE and ABTONE are strongly and positively (negatively) correlated with ABPOS

---

all cases). The remaining variables are all statistically insignificant at the 10% level. All statistically significant associations between the three tone measures and their determinants are consistent with prior literature (e.g. Clatworthy & Jones, 2003: Li, 2010; Merkl-Davies & Brennan, 2007). The expected tone models are provided in Appendix B.

(ABNEG) (TONE r = 0.62, –0.72; ABTONE r = 0.64, –0.74). ABPOS and ABNEG are negatively correlated with each other (r = –0.08). This implies IMSs that provide discretionary negative clauses are not likely to obfuscate the performance by increasing the number of positive clauses. Additionally, ABTONE (ABPOS, ABNEG) is positively (positively, negatively) correlated with three-day cumulative abnormal return CAR (–1, +1) (r = 0.21, 0.14 and –0.16). This provides preliminary indication of a positive association between abnormal tone and abnormal market returns. Finally, ABTONE is negatively correlated with discretionary accruals DA (r = –0.06), consistent with the trade-off between tone management and earnings management. There is no evidence of multi-collinearity among the earnings and share price explanatory variables.

4.2. Discretionary tone and annual earnings

I examine the association between abnormal tone and future earnings in the following regression (excluding industry and year fixed effects):

$$EARN_{itj+n} = \alpha + \beta_1 ABTONE_{it-1j} + \beta_2 NTONE_{it-1j} + \beta_3 DA_{it-1j} + \beta_4 PMPL_{it-1j} + \beta_5 EARN_{it-1j} +$$
$$\beta_6 SIZE_{it-1j} + \beta_7 BTM_{it-1j} + \beta_8 RET_{it-1j} + \beta_9 STDRET_{it-1j} + \beta_{10} STDEARN_{it-1j} + \varepsilon_{it-1j} \quad (6a)$$

$$EARN_{itj+n} = \alpha + \beta_1 ABPOS_{it-1j} + \beta_2 ABNEG_{it-1j} + \beta_3 NPOS_{it-1j} + \beta_4 NNEG_{it-1j} + \beta_5 DA_{it-1j} +$$
$$\beta_6 PMPL_{it-1j} + \beta_7 EARN_{it-1j} + \beta_8 SIZE_{it-1j} + \beta_9 BTM_{it-1j} + \beta_{10} RET_{it-1j} + \beta_{11} STDRET_{it-1j} +$$
$$\beta_{12} STDEARN_{it-1j} + \varepsilon_{it-1j} \quad (6b)$$

where n = 0 or 1.

Equation 6 includes regressions of year-end and one-year ahead earnings only. This is because prior studies suggest that the vast majority of forward-looking clauses in IMSs do not extend beyond one year (Rahman et al., 2019; Schleicher & Walker, 2015). The regression models also include normal tone (NTONE, NPOS and NNEG). As a result, I control for both discretionary accruals DA and pre-managed profit levels PMPL in the

models. The remaining variables are firm characteristics based on Huang et al. (2014). A positive (positive, negative, positive, positive, negative) association between ABTONE (ABPOS, ABNEG, NTONE, NPOS, NNEG) and future earnings suggests that the signal in the tone is consistent with future earnings performance.

The results of Equation 6 are presented in Table 5 – for the full sample and separately for first- and third-quarter IMSs. Panel A indicates that ABTONE is more positively aligned with year-end earnings for the third quarter than the first quarter. When the tone is replaced with separate positivity and negativity measures, the results indicate a more negative (positive) alignment between ABNEG (ABPOS) and year-end earnings in the third quarter than in the first quarter. However, ABNEG appears to have a more pronounced association with year-end earnings than ABPOS. Panel B suggests no specific alignment between ABTONE and ABNEG with one-year ahead earnings, although ABPOS has a stronger positive alignment with one-year ahead earnings in the third quarter than in the first quarter. Normal tone measures NTONE, NPOS and NNEG do not exhibit any significant association with either year-end earnings or one-year ahead earnings.[9]

[**Table 5 near here**]

I make several observations from the findings in Table 5. First, the close alignment between abnormal tone and annual earnings in the third quarter is consistent with managers having a better understanding of the annual results nearer the year-end. Second, the positive association of full sample abnormal tone with the annual earnings is mainly attributable to abnormal negativity in third-quarter IMSs. Third, normal tone has no significant

---

[9] For supplementary analysis, I replace EARN with annual operating cash flow scaled by total assets, CFO, in Equation 6a. I continue to find a stronger positive (negative) association between ABTONE (ABNEG) and year-end cash flows in the third quarter than in the first quarter. NTONE, NPOS and NNEG are unaligned with year-end cash flows in all three cases.

associations with the annual results, consistent with it coinciding little to no incremental information.

4.3. Discretionary tone and abnormal market returns

I now examine the association between abnormal tone and contemporaneous market returns, using the three-day cumulative abnormal return CAR (–1, +1) around the day of the IMS announcement. This indicates how investor responses align to the tone. In particular, the tone is likely to be positively aligned with abnormal market returns if investors view that the tone is useful for decision-making (Henry, 2008). For this purpose, I devise the following regressions (excluding industry and firm fixed-effects)[10]:

$$\text{CAR } (-1, +1) = \alpha + \beta_1 ABTONE_{it-1j} + \beta_2 NTONE_{it-1j} + \beta_3 DA_{it-1j} + \beta_4 PMPL_{it-1j} + \beta_5 UE_{it-1j} +$$
$$\beta_6 SIZE_{it-1j} + \beta_7 BTM_{it-1j} + \beta_8 RET_{it-1j} + \beta_9 STDRET_{it-1j} + \beta_{10} STDEARN_{it-1j} + \varepsilon_{it-1j} \quad (7a)$$

$$\text{CAR } (-1, +1) = \alpha + \beta_1 ABPOS_{it-1j} + \beta_2 ABNEG_{it-1j} + \beta_3 NPOS_{it-1j} + \beta_4 NNEG_{it-1j} + \beta_5 DA_{it-1j} +$$
$$\beta_6 PMPL_{it-1j} + \beta_7 UE_{it-1j} + \beta_8 SIZE_{it-1j} + \beta_9 BTM_{it-1j} + \beta_{10} RET_{it-1j} + \beta_{11} STDRET_{it-1j} +$$
$$\beta_{12} STDEARN_{it-1j} + \varepsilon_{it-1j} \quad (7b)$$

Panel A of Table 6 reports the results of Equation 7. I find that ABTONE is positively aligned with CAR (–1, +1) for both the first and third quarters, although the alignment is clearly more pronounced in the third quarter. Replacing ABTONE with ABPOS and ABNEG show that all ABPOS coefficients are positive while all ABNEG coefficients are negative. In both cases, the coefficients are more pronounced in the third quarter. NTONE, NPOS and NNEG have no significant alignment with CAR (–1, +1), either for the full sample or for any of the quarters. Additionally, UE is positive for the full sample and the third quarter but is insignificant for the first quarter. Further, DA and PMPL

---

[10] This study focuses only on the alignment between tone and abnormal market returns, not a causal link. Thus, it is important to stress that my research design is not capable of demonstrating how tone causes share price movements. To show that, the research design would have to be capable of dealing with the possibility of endogeneity that may arise, perhaps because of correlated missing variables (Henry & Leone, 2016; Rahman et al., 2019) While references are provided when the results are related to the claims and assertions made in other studies, I do not claim a direct causal link between tone and market returns.

are both positively aligned with CAR (–1, +1) in the first quarter but not in the third quarter.[11] Vuong (1989) tests of model preference indicate that the explanatory power of the models for CAR (–1, +1) is greater in the third quarter than in the first quarter for both Equations 7a (p=0.00) and 7b (p=0.00).

As more firm fundamental information is gradually released to the market, over time, investors learn about any initial mispricing (Huang et al., 2014). If investors are initially misled by the abnormal tone, a complete share price reversal is expected to occur once the accurate information is learnt. If the initial market response is accurate, it is unlikely to be reversed post announcement. To examine the alignment between tone and abnormal market returns in the post-announcement period, I now run regressions of the 60-day cumulative abnormal return starting from the second day after the IMS announcement, as follows (excluding industry and firm fixed-effects):

$$CAR\ (+2, +61) = \alpha + \beta_1 ABTONE_{it\text{-}1j} + \beta_2 NTONE_{it\text{-}1j} + \beta_3 DA_{it\text{-}1j} + \beta_4 PMPL_{it\text{-}1j} + \beta_5 UE_{it\text{-}1j} +$$
$$\beta_6 SIZE_{it\text{-}1j} + \beta_7 BTM_{it\text{-}1j} + \beta_8 RET_{it\text{-}1j} + \beta_9 STDRET_{it\text{-}1j} + \beta_{10} STDEARN_{it\text{-}1j} + \varepsilon_{it\text{-}1j}\quad (8a)$$

$$CAR\ (+2, +61) = \alpha + \beta_1 ABPOS_{it\text{-}1j} + \beta_2 ABNEG_{it\text{-}1j} + \beta_3 NPOS_{it\text{-}1j} + \beta_4 NNEG_{it\text{-}1j} + \beta_5 DA_{it\text{-}1j} +$$
$$\beta_6 PMPL_{it\text{-}1j} + \beta_7 UE_{it\text{-}1j} + \beta_8 SIZE_{it\text{-}1j} + \beta_9 BTM_{it\text{-}1j} + \beta_{10} RET_{it\text{-}1j} + \beta_{11} STDRET_{it\text{-}1j} +$$
$$\beta_{12} STDEARN_{it\text{-}1j} + \varepsilon_{it\text{-}1j}\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad (8b)$$

Panel B of Table 6 reports the results of Equation 8. Overall, I find no evidence of reversal in the alignment between abnormal tone and abnormal market returns in the post-announcement period. Instead, the third-quarter ABTONE continues to have a strong positive alignment with abnormal market returns. The noisier first-quarter ABTONE is no longer positively aligned with abnormal market returns. Additionally, NTONE and NPOS now have weak positive associations with CAR (+2, +61) in the third-quarter. This implies

---

[11] Assuming semi-strong form efficient markets, this is consistent with Das et al.'s (2009) assertion that there are greater earnings management activities towards the end of the year than at the start.

that some market reaction is aligned with normal positivity during the post-announcement period of the third quarter. DA and PMPL continue to be positively aligned with CAR (+2, +61) in the first quarter but not in the third quarter. Similar to Panel A, Vuong (1989) tests indicate that the explanatory power in the CAR (+2, +61) models is greater in the third quarter than in the first quarter, for both Equations 8a (p=0.00) and 8b (p=0.00).

[**Table 6 near here**]

5. Additional Analysis

5.1. Using automated analysis

Computer-assisted word counts are less context-accurate than manual textual analysis (Rahman et al., 2019; Schleicher & Walker, 2010). Nevertheless, supplementing the manual textual analysis results with automated wordlists can provide greater validity to the results. Therefore, I repeat the future earnings and market return estimations of ABTONE and NTONE on the full sample of 1032 IMSs using two automated wordlists specialised in the domain of financial communication: Henry (2008) and Loughran and McDonald (2011) (henceforth 'LM'). Overall, the results (un-tabulated) are often weaker in terms of statistical significance, as expected with automated wordlists. However, they are qualitatively similar to the results in Table 5 and 6. Specifically, ABTONE (ABNEG) is positively (negatively) aligned with both year-end earnings and abnormal market returns CAR (–1, +1) in the third quarter but not in the first quarter. In both cases, NTONE, NPOS and NNEG are statistically insignificant for both the quarters. The results are typically more economically significant with the LM wordlist than the Henry wordlist.

5.2. Splitting the sample and investigation window

Since the sample period coincides with the financial crisis, I split the sample to see if the results are specific to particular years.[12] In Table 7, I report the regression summaries of year-end earnings and CAR (–1, +1) on abnormal and normal tone, divided by financial crisis years (2008 – 2009) and non-financial crisis years (2010 – 2013), and separated by the first and third quarters. The remaining variables are unreported for brevity. For the non-financial crisis years, the results are often similar to those in Tables 5 and 6. However, for the financial crisis years, ABPOS is negatively aligned with year-end earnings in the first quarter, although there is no significant alignment in the third quarter. This is consistent with Schleicher and Walker (2010) who suggest that poorly performing firms are likely to bias upwardly expected future outcomes to obfuscate their performance. Nevertheless, abnormal market returns in the first quarter is unaligned with ABTONE. As such, it is unlikely that investor responses were affected by the first-quarter IMS discretionary tone during the financial crisis years.

[**Table 7 near here**]

Additionally, it is possible that the results are driven by certain types of firms in the sample. For instance, smaller firms have lower visibility and disclose less voluntary trading updates (Schleicher & Walker, 2015), and can thus mislead investors with lower market penalties than larger firms. In addition, poorly performing firms are more likely to hype up their discretionary tone to portray their performance in a favourable light (Merkl-Davies & Brennan, 2007). Further, firms with greater balance sheet constraints are more likely to engage in misleading tone management as greater reporting constraints encourage firms to use textual narratives to signal performance to investors (Huang et al., 2014).

---

[12] I thank an Anonymous Reviewer for this idea.

To investigate the above possibilities, I first rank the sample in terms of firm size (SIZE), financial performance (measured as return on assets, ROA) and balance sheet constraints (measured as net operating assets, NOA). In each case, I then create two separate subsamples containing 50% of IMS observations. Overall, I find in un-tabulated results, that none of the suspect subsamples (i.e. small SIZE, low ROA and high NOA) contradict the results of Tables 5 and 6 in terms of the sign and statistical significance of ABTONE. Moreover, in each case, the alignment between ABTONE and future earnings is more positive in the third quarter than in the first quarter.

5.3. Introducing non-linear modelling

Henry (2008) finds a positive and concave relationship between the tone and contemporaneous abnormal market returns, consistent with prospect theory (e.g. Tversky & Kahneman, 1981). This implies abnormal market returns increases with increasing tone, but only up to a certain point. It is therefore interesting to examine if the positive alignment between abnormal tone with either year-end earnings or abnormal returns is also concave. For this, I repeat the regressions in Equations 6a and 7a but include as additional explanatory variables, ABTONESQ (squared value of ABTONE) and NTONESQ (squared value of NTONE). The results of ABTONE and NTONE remain very similar to those reported in Tables 5 and 6. However, for both quarters, ABTONESQ and NTONESQ are unaligned with year-end earnings and CAR (–1, +1). In other words, the positive association of ABTONE with either year-end earnings or contemporaneous abnormal market returns is unlikely to be limited to a reference point.

6. Discussion and Conclusion

Reporting constraints imposed by regulators limit managers' ability to communicate information via the quantitative disclosures. Therefore, the financial statements on their own

do not provide the market participants with a complete picture of the firm's economic activities (Huang et al., 2014). Consequently, managers use discretionary narratives to align investor expectations of financial performance with the management's own assessments (Davis et al., 2012; Merkl-Davies & Brennan, 2007). The de-facto voluntary nature of an IMS content allows managers to signal their sentiments of the expected future outcomes. I believe the lack of a strong alignment between the non-discretionary IMS tone and year-end earnings in this study attests to the importance of the discretionary tone in signalling decision-useful sentiment to investors.

The central finding of this study is that the discretionary tone of third-quarter IMSs predicts positive annual earnings. This is largely due to third-quarter IMSs signalling expected negative performance outcomes via the discretionary narratives. In comparison, the first-quarter IMS discretionary tone appears to coincide with signals irrelevant for decision-making. Arguably, managers seem to correct any previously hyped-up performance expectations right before the closure of the year, either to preserve their future credibility or to minimize market penalties. Regardless, investors speculating the annual results can rely on the third-quarter IMS considerably more than the first-quarter IMS.

Additional analysis demonstrates a negative alignment between the first-quarter IMS abnormal positivity and year-end earnings during the financial crisis years. It is possible that the current IMS reporting requirements are insufficient to ensure accurate forecasting of expected positive outcomes early on during the year, especially at times of high economic uncertainty. I believe additional disclosure guidance, particularly on describing expected optimistic outcomes can alleviate this problem. This may include more explicit disclosure guidance on: (a) optimistic non-quantitative sales and earnings forecasts (b) expected positive outcomes that are subject to change when the management's expectations or market

consensus changes (c) characterisation of the trading and business outlook (d) what type of events and transactions are deemed 'material' to be disclosed in an IMS.

Based on the findings of this study, I believe that the IMS is a reasonable alternative to full quarterly reports, especially if the above guidance is incorporated. First, the third-quarter IMS discretionary tone is positively aligned with the annual earnings. Thus, the IMS performs the vital function of providing market participants with an accurate signal of the firm's future performance. Second, adopting IMSs on both sides of the Atlantic would bridge the reporting gap between US and EU firms, a key goal of the EU Transparency Directive (EU, 2004; Schleicher & Walker, 2015). Third, the IMS, even after incorporating some additional disclosure guidance, should lower firms' disclosure costs substantially. Fourth, switching to IMSs should also reduce managerial short-termism (Schleicher & Walker, 2015), including earnings manipulation efforts to meet short-term profit targets. This will also emphasize on long-term investment (SEC, 2018). For instance, Nallareddy et al. (2016) suggest it is unlikely that the volume of corporate investments would be adversely affected once the full quarterly reporting requirement is scrapped.

There are a number of avenues for future research beyond the context and scope of this study. To begin, future tone management research can focus on longer disclosures such quarterly, semi-annual or annual reports. It would be interesting, for example, to investigate if there are patterns between the discretionary tones of the four US quarterly reports around the year. It would also be interesting to see whether the disclosure texts become more or less readable at different times in a year, given the nature of their alignment with decision-useful information. In addition, since the average annual income streams of financial and non-financial firms are different (Schleicher & Walker, 2015), future studies can compare any tonal or linguistic differences that arise as a result. Finally, future research can examine the discretionary tone of different voluntary concealment strategies as identified by Merkl-

Davies and Brennan (2007), such as rhetorical manipulation, thematic manipulation or choice of performance benchmarks.

References

Abrahamson, E., & Amir, E. (1996). The information content of the president's letter to shareholders. *Journal of Business, Finance and Accounting, 23*(8), 1157–1182.

Beattie, V. (2014). Accounting narratives and the narrative turn in accounting research: issues, theory, methodology, methods and a research framework. *British Accounting Review¸ 46*(2), 111–134.

Clatworthy, M., & Jones, M.J. (2003). Financial reporting of good news and bad news: Evidence from accounting narratives. *Accounting and Business Research, 33*(3), 171–185.

Das, S., Shroff, P.K., & Zhang, H. (2009). Quarterly earnings patterns and earnings management. *Contemporary Accounting Research, 26*(3), 797–831.

Davis, A.K., Piger, J.M., & Sedor, L.M. (2012). Beyond the numbers: Measuring the information content of earnings press release language. *Contemporary Accounting Research, 29*(3), 845–868.

Dechow, P., Sloan, R. & Sweeny, A. (1995). Detecting earnings management. *The Accounting Review 70*(2), 193–225.

Dechow, P., Ge, W. & Schrand, C. (2010). Understanding earnings quality: a review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, *50*(2-3): 344–401.

Deloitte & Touché. (2007). First IMpressionS: The First Year's Interim Management Statements. London: The Creative Studio at Deloitte.

Demers, E. & Vega, C. (2011). *Linguistic tone in earnings announcements: News or noise?* Working paper.

Ernstberger, J., Link, B., Stich, M., & Volger, O. (2017). The real effects of mandatory quarterly reporting. *The Accounting Review, 92*(5), 33–60.

European Union (EU). (2004). Directive 2004/109/EC of the European Parliament and of the Council. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri¼CELEX:32004L0109&from¼EN

Francis, J., Philbrick, D., & Schipper, K. (1994). Shareholder litigation and corporate disclosures. *Journal of Accounting Research, 32*(2), 137–164.

Francis, J., Schipper, K. & Vincent, L. (2002). Expanded disclosures and increased usefulness of earnings announcements. *The Accounting Review, 30*(1), 185–209.

Fiske, S. & Taylor, S. (1991). *Social Cognition*. 2nd edition. New York, NY: McGraw-Hill.

Gore, P., Pope, P.F., & Singh, A.K. (2007). Earnings management and the distribution of earnings relative to targets: UK evidence. *Accounting and Business Research*, *(37)*2, 123–149.

Guardian. (2018). *Trump sees win with push to reform quarterly earnings reports*. Available at: https://www.theguardian.com/business/2018/aug/26/trump-quarterly-earnings-reports-six-month-system

Healy, P.M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics, 7*(1), 85–107.

Henry, E. (2008). Are investors influenced by how earnings press releases are written? *Journal of Business Communication, 45*(4), 363–407.

Henry, E., & Leone, A.J. (2016). Measuring qualitative information in capital markets research: Comparison of alternative methodologies to measure disclosure tone. *The Accounting Review, 91*(1), 153–178.

Hoskin, R.E., Hughes, J.S., & Ricks, W.E. (1986). Evidence on the incremental information content of additional firm disclosures made concurrently with earnings. *Journal of Accounting Research, 24*(1), 1-32.

Hribar, P., & Collins, D. (2002). Errors in estimating accruals: implications for empirical research. *Journal of Accounting Research 40*(1), 105–134.

Huang, X., Teoh, S.H. & Zhang, Y. (2014). Tone management. *The Accounting Review, 89*(3), 1083–1113.

Li, F. (2010). The information content of forward-looking statements in corporate filings—A naïve Bayesian machine learnings approach. *Journal of Accounting Research, 48*(5): 1049–1102.

Loughran, T., & McDonald, B. (2011). When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *The Journal of Finance, 66*(1), 35–65.

Mangen, C., & Durnev, A. (2012). *The real effects of disclosure: evidence from restatements.* Working paper, Concordia University.

Merkl-Davies, D.M., & Brennan, N.M. (2007). Discretionary disclosure strategies in corporate narratives: incremental information or impression management? *Journal of Accounting Literature, 27*(1), 116–196.

Nallareddy, S., Pozen, R., & Rajgopal, S. (2016). *Consequences of mandatory quarterly reporting*. Working Paper, Fuqua School of Business.

Rahman, S., Schleicher, T., & Walker, M. (2019). *Comparing manual against automated measures of the tone of interim management statements: a market-based approach.* Working paper, Brunel University London.

Schleicher, T., & Walker, M. (2010). Bias in the tone of forward-looking narratives. *Accounting and Business Research, 40*(4), 371–390.

Schleicher, T., & Walker, M. (2015). Are interim management statements redundant? *Accounting and Business Research, 45*(2), 229–255.

Securities and Exchange Commission (SEC). (2018). *Comments on earnings releases and quarterly reports.* Available at: https://www.sec.gov/rules/other/2018/33-10588.pdf

Teoh, S., Welch, I., & Wong, T. (1998). Earnings management and the long-run underperformance of seasoned equity offerings. *Journal of Financial Economics, 50*(1), 63–100.

Tetlock, P., Saar-Tsechansky, & M. Macskassy, S. (2008). More than words: Quantifying language to measure firms' fundamentals. *The Journal of Finance, 63*(3), 1437–1467.

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, *211*(4481), 453–458.

Verrecchia, R. E. (2001). Essays on disclosure. *Journal of Accounting and Economics*, *32* (December): 97–180.

Vuong, Q. H. (1989). Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica, 57*(2), 307–333.

Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, *87*(2), 675–703.

Table 1
Sample Development and Composition

Panel A: Firm Sample		
Firms in FTSE All-Share Index on 30 June 2008	668	
Less: Financial Firms	(305)	
FTSE All-Share Index Non-Financial Firms on 30 June 2008	363	
Less: Non-Financial Firms releasing Quarterly Statements in 2008	(39)	
FTSE All-Share Index Non-Financial Firms disclosing IMS in 2008	**324**	
Randomly Selected Non-Financial Firms from 30 June 2008	**100**	

Size Composition of Firms	OBS	*%*
FTSE 100	15	15.00
FTSE 250	38	38.00
FTSE Small Cap	47	47.00
	100	**100.00**

Panel B: IMS Sample		
Total Number of Firms	100	
Maximum Possible IMS from Sample Firms	1200	
Less: Firms delisted	(69)	
Less: Maximum number of IMS not disclosed	(109)	
Add: IMS misclassified in the Perfect Information Navigator	10	
Final Sample of IMSs	**1032**	

Year Composition of IMS	OBS	*%*
2008	174	16.86%
2009	197	19.09%
2010	189	18.31%
2011	171	16.57%
2012	153	14.83%
2013	148	14.34%
Total	**1032**	100.00%

Industry Composition of IMS	OBS	*%*
ICB 0001 Oil and Gas	39	3.78%
ICB 1000 Basic Materials	53	5.14%
ICB 2000 Industrials	416	40.31%
ICB 3000 Consumer Goods	111	10.76%
ICB 4000 Healthcare	21	2.03%
ICB 5000 Consumer Services	266	25.78%
ICB 6000 Telecommunications	41	3.97%
ICB 7000 Utilities	17	1.65%
ICB 9000 Technology	68	6.59%
Total	**1032**	100.00%

This table presents the sample selection procedure. The sampling period spans six years namely 2008 – 2013. 2008 is used as the year of initiating the sampling process. Panel A of the table presents the firm sample and size composition of firms. Panel B of the table presents the IMS sample and the year and industry compositions of IMSs. OBS: number of observations.

Table 2
IMS Textual Analysis – Year and Industry Breakdown

	OBS		Words (Mean)			Number of Clauses (Mean) POSITIVE			NEGATIVE			Tone Measures (Mean) TONE			POS			NEG			EARN (Mean)
	Q1	Q3	Q1	Q3	ALL	Q1	Q3	ALL	Q1	Q3	ALL	Q1	Q3	ALL	Q1	Q3	ALL	Q1	Q3	ALL	ALL
Panel A: All IMSs																					
Total	517	515	955	1062	1008	6.29	6.43	6.36	3.71	4.05	3.88	0.28	0.24	0.26	0.25	0.24	0.25	0.14	0.15	0.14	0.098
Panel B: Year Breakdown																					
2008	84	90	829	1003	919	5.35	4.86	5.09	2.29	3.82	3.09	0.44	0.15	0.29	0.26	0.20	0.23	0.09	0.16	0.12	0.104
2009	100	97	978	1109	1042	5.39	6.42	5.89	4.90	4.54	4.72	0.08	0.17	0.12	0.20	0.23	0.22	0.17	0.16	0.17	0.084
2010	99	90	954	1051	1000	6.57	6.56	6.56	3.57	3.49	3.53	0.25	0.30	0.28	0.26	0.24	0.25	0.14	0.13	0.13	0.095
2011	86	85	995	1056	1025	6.79	7.32	7.05	3.57	3.95	3.76	0.33	0.29	0.31	0.26	0.26	0.26	0.14	0.14	0.14	0.104
2012	76	77	960	1126	1043	6.63	6.96	6.80	3.62	4.65	4.14	0.29	0.21	0.25	0.25	0.25	0.25	0.14	0.15	0.14	0.095
2013	72	76	1016	1025	1021	7.29	6.63	6.95	4.13	3.91	4.01	0.32	0.30	0.31	0.27	0.26	0.27	0.14	0.14	0.14	0.108
Panel C: Industry Breakdown																					
Oil and Gas	20	19	927	990	958	3.00	2.53	2.77	1.70	2.16	1.92	0.34	0.09	0.22	0.14	0.12	0.13	0.08	0.11	0.10	0.015
Basic Materials	24	29	1922	2574	2279	6.25	8.10	7.26	3.71	4.93	4.38	0.24	0.24	0.24	0.12	0.14	0.13	0.07	0.08	0.08	0.107
Industrials	210	206	836	859	847	5.10	4.85	4.98	3.21	3.51	3.36	0.24	0.18	0.21	0.24	0.23	0.23	0.14	0.16	0.15	0.093
Consumer Goods	56	55	956	1216	1085	9.09	9.85	9.47	4.93	5.96	5.44	0.31	0.29	0.30	0.29	0.28	0.29	0.15	0.15	0.15	0.095
Healthcare	10	11	662	614	637	5.10	4.18	4.62	2.90	2.18	2.52	0.42	0.42	0.42	0.27	0.24	0.25	0.13	0.11	0.12	0.093
Consumer Services	132	134	840	953	897	6.27	7.19	6.74	3.64	3.80	3.72	0.28	0.31	0.30	0.29	0.29	0.29	0.16	0.15	0.15	0.124
Telecommunication	20	21	2029	1942	1984	12.35	11.14	11.73	7.55	8.00	7.78	0.49	0.39	0.44	0.27	0.23	0.25	0.10	0.12	0.11	0.112
Utilities	9	8	1140	1122	1131	8.89	7.38	8.18	5.89	5.13	5.53	0.19	0.18	0.19	0.24	0.21	0.22	0.16	0.13	0.15	0.060
Technology	36	32	878	787	835	7.08	5.75	6.46	3.58	3.47	3.53	0.27	0.12	0.20	0.26	0.21	0.24	0.16	0.16	0.16	0.071

This table reports some descriptive statistics from textual analysis of 1032 IMSs during 2008 – 2013, classified by year and industry. The results are reported separately for the first quarter (Q1), third quarter (Q3) and full-year (ALL). The table reports the number of IMS observations (OBS), the mean number of words per IMS document, the mean number of positive and negative clauses identified, POSITIVE and NEGATIVE, the mean of the tone measures, TONE, POS and NEG, and the mean annual earnings before extraordinary items, scaled by total assets (EARN).

Table 3
Variable Definitions

Variable	Definition
TONE	The net tone score, computed as the difference between the number of positive and negative clauses in an IMS divided by the sum of positive and negative clauses in the IMS.
POS	The positivity score, computed as the number of positive clauses in an IMS divided by the total number of clauses in the IMS.
NEG	The negativity score, computed as the number of negative clauses in an IMS divided by the total number of clauses in the IMS.
NTONE	The normal component of tone, derived from the expected tone model in Equation 5.
NPOS	The normal component of positivity, derived from the expected tone model in Equation 5.
NNEG	The normal component of negativity, derived from the expected tone model in Equation 5.
ABTONE	The abnormal component of tone, computed as the difference between the TONE of an IMS and the normal component of tone in that IMS.
ABPOS	The abnormal component of positivity, computed as the difference between the POS of an IMS and the normal component of positivity in that IMS.
ABNEG	The abnormal component of negativity, computed as the difference between the NEG of an IMS and the normal component of negativity in that IMS.
DA	Discretionary accruals (based on cross-sectional modified Jones model), computed as the residuals of a regression of total accruals on: (i) (1 / beginning total assets), (ii) the difference between annual change in sales and annual change in accounts receivable from operating activities, and (iii) gross property, plant and equipment scaled by beginning total assets. Total accruals is computed by deducting cash flow from operations (net of extraordinary items and discontinued operations) from income before extraordinary items.
PMPL	Pre-managed profit level, computed as the difference between earnings per share and discretionary accruals divided by the number of shares outstanding.
EARN	Earnings before extraordinary items divided by beginning total assets.
STDEARN	Standard deviation of EARN over the past four years.
CHEARN	Annual change in earnings before extraordinary items divided by beginning total assets.
RET	Annual buy-and-hold raw returns.
STDRET	Standard deviation of RET over the last four years.
SIZE	Natural logarithm of market value of equity.
BTM	Book-to-market value of equity.
LOSS	Indicator variable taking the value of 1 if EARN is negative, and 0 otherwise.
AGE	Natural logarithm of (1 + number of years since the firm appears in DataStream).
BUSSEG	Natural logarithm of (1 + number of business segments).
GEOSEG	Natural logarithm of (1 + number of geographic segments).
UE	Unexpected earnings computed as the difference between actual EPS and the latest median analyst forecast from I/B/E/S divided by the beginning share price.
ANFOR	Analyst consensus EPS forecast divided by the beginning share price.
CFO	Annual operating cash flow divided by beginning total assets.
CAR (–1, +1)	Three-day cumulative abnormal return, from one day before to one day after the announcement of IMS. For abnormal returns, daily market model adjusted returns, u_{id}, is computed as $u_{id} = R_{id} – (\alpha_i + \beta_i R_{md})$, where R_{id} is the return of firm i on day d, R_{md} is the return of the FTSE All-Share Index on day d and where R_{id} and R_{md} are calculated from DataStream Return Indices, RI. α_i and β_i are firm i's estimated market model parameters calculated from the non-event period which runs from $d–60$ to $d–10$ and $d+10$ to $d+60$ relative to the IMS announcement day $d=0$. The cumulative abnormal return is calculated as the sum of the daily market model adjusted returns, u_{it}, over the three-day event period (days $d–1$, d, $d+1$), such that $CAR(–1, +1)_{it} = u_{id-1} + u_{id} + u_{id+1}$.
CAR (+2, +61)	60-day cumulative abnormal return, starting from the second day after the announcement of IMS. The computation is similar to three-day CAR except that firm i's market model parameters are now calculated from a non-event period which runs from $d–110$ to $d–10$ and $d+70$ to $d+170$ relative to the IMS announcement day $d=0$. $CAR(+2, +61)_{id} = u_{id+2} + \ldots + u_{id+61}$.

Table 4
Descriptive Statistics

Variable	Mean	Std. Dev	Median	Minimum	Maximum
TONE	0.2555	0.4333	0.2727	–1.0000	1.0000
POS	0.2457	0.1430	0.2300	0.0000	0.8235
NEG	0.1417	0.1041	0.1250	0.0000	0.5556
NTONE	0.2555	0.0971	0.2481	–0.4147	0.7029
NPOS	0.2457	0.0404	0.2501	0.0473	0.3605
NNEG	0.1417	0.0182	0.1424	0.0332	0.1986
ABTONE	0.0000	0.4223	–0.0056	–1.3154	0.9281
ABPOS	0.0000	0.1372	–0.0162	–0.2990	0.5635
ABNEG	0.0000	0.1025	–0.0143	–0.1702	0.4155
DA	0.0027	0.0090	0.0003	–0.0000	0.0637
PMPL	0.0889	0.1246	0.0869	–1.2222	0.3866
EARN	0.0975	0.0885	0.0839	–0.0886	0.5835
STDEARN	0.0376	0.0947	0.0202	0.0000	1.5948
CHEARN	0.0098	0.0852	0.0068	–0.6236	1.1480
RET	0.1253	0.5410	0.0000	–0.8510	3.9312
STDRET	0.7048	5.7226	0.3488	0.0000	175.51
SIZE	17.748	1.6079	17.483	12.676	22.592
BTM	0.5855	1.1918	0.4775	–12.526	25.000
LOSS	0.1398	0.3350	0.0000	0.0000	1.0000
AGE	1.7205	0.2517	1.7482	0.9542	2.1987
BUSSEG	0.7723	0.3011	0.7782	0.3010	1.2788
GEOSEG	0.6974	0.3093	0.7782	0.3010	1.8062
UE	–2.3563	33.805	–0.2400	–73.800	28.410
ANFOR	0.0777	0.1670	0.0226	–0.1088	1.5381
CFO	–0.1376	4.4749	0.1103	–98.824	79.680
CAR (–1, +1)	0.0004	0.0851	0.0009	–0.5632	1.2239
CAR (+2, +61)	0.0089	0.1242	0.0151	–1.0778	0.4664

This table reports the summary statistics of variables used in this study based on 1032 IMSs during the period 2008 – 2013. All variables are defined in Table 3.

Table 5
Abnormal Tone and Future Annual Earnings

Panel A: Dependent Variable EARN$_{itj}$

	FULL SAMPLE		FIRST QUARTER		THIRD QUARTER	
Variables	(1)	(2)	(1)	(2)	(1)	(2)
INTERCEPT	−0.0802**	−0.0944**	−0.0757**	−0.1016**	−0.0831**	−0.0866*
ABTONE$_{it-1j}$	0.0093***		0.0021		0.0175***	
NTONE$_{it-1j}$	−0.0562		−0.0597		−0.0633	
ABPOS$_{it-1j}$		0.0130		−0.0012		0.0315*
ABNEG$_{it-1j}$		−0.0300*		−0.0151		−0.0430**
NPOS$_{it-1j}$		−0.1040		−0.1093		−0.1125
NNEG$_{it-1j}$		0.1854		0.2516		0.1341
DA$_{it-1j}$	0.1919	0.1918	0.1989	0.1990	0.1856	0.1884
PMPL$_{it-1j}$	0.1986	0.1984	0.2033	0.2033	0.1942	0.1969
EARN$_{it-1j}$	0.6207***	0.6176***	0.6470***	0.6438***	0.6018***	0.5971***
SIZE$_{it-1j}$	0.0047**	0.0047**	0.0044*	0.0045**	0.0053**	0.0050**
BTM$_{it-1j}$	−0.0014	−0.0016	−0.0006	−0.0009	−0.0018	−0.0019
RET$_{it-1j}$	0.0106	0.0114	0.0103	0.0125*	0.0120*	0.0107
STDRET$_{it-1j}$	0.0000	0.0000	−0.0000	−0.0000	0.0001	0.0002
STDEARN$_{it-1j}$	0.0294	0.0273	0.0120	0.0097	0.0393**	0.0365*
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
OBS	1032	1032	517	517	515	515
ADJ R-SQ	0.7333	0.7392	0.7287	0.7280	0.7306	0.7282

Panel B: Dependent Variable EARN$_{it+1j}$

	FULL SAMPLE		FIRST QUARTER		THIRD QUARTER	
Variables	(1)	(2)	(1)	(2)	(1)	(2)
INTERCEPT	−0.0548	−0.0477	−0.0504	−0.0506	−0.0600	−0.0484
ABTONE$_{it-1j}$	0.0074		0.0040		0.0106	
NTONE$_{it-1j}$	−0.0357		−0.0561		−0.0242	
ABPOS$_{it-1j}$		0.0354*		0.0222		0.0513**
ABNEG$_{it-1j}$		0.0044		0.0024		0.0105
NPOS$_{it-1j}$		−0.1073		−0.1465		−0.0806
NNEG$_{it-1j}$		0.0249		0.1149		−0.0443
DA$_{it-1j}$	0.0066	0.0028	0.0145	0.0099	−0.0041	−0.0055
PMPL$_{it-1j}$	0.0153	0.0117	0.0202	0.0153	0.0074	0.0068
EARN$_{it-1j}$	0.6960***	0.7034***	0.7503***	0.7580***	0.6562***	0.6607***
SIZE$_{it-1j}$	0.0031	0.0039	0.0033	0.0037	0.0036	0.0044
BTM$_{it-1j}$	−0.0012	−0.0009	0.0003	0.0005	−0.0023	−0.0019
RET$_{it-1j}$	0.0005	−0.0004	0.0015	0.0015	0.0001	−0.0018
STDRET$_{it-1j}$	−0.0000	−0.0001	−0.0001	−0.0001	0.0000	0.0000
STDEARN$_{it-1j}$	0.0611	0.0568	0.0061	0.0023	0.0937	0.0881
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
OBS	1032	1032	517	517	515	515
ADJ R-SQ	0.5534	0.5546	0.5605	0.5602	0.5333	0.5346

This table reports regressions of future annual earnings on abnormal tone of 1032 IMSs during the period 2008 – 2013. Separate first and third quarter results are also reported. INDUSTRY FE includes eight ICB classification 1/0 indicator variables, omitting 'Oil and Gas', YEAR FE includes five 1/0 indicator variables for each year in sample, omitting the year 2008. P-values are based on robust standard errors, clustered at the firm-level. OBS: number of observations. All variables are defined in Table 3. *, **, and *** indicate p-values significant at the 10% level, 5% level and 1% level respectively.

Table 6
Abnormal Tone and Abnormal Market Returns

Panel A: Dependent Variable CAR (–1, +1)

Variables	FULL SAMPLE		FIRST QUARTER		THIRD QUARTER	
	(1)	(2)	(1)	(2)	(1)	(2)
INTERCEPT	–0.0272	0.0118	–0.0315	0.0344	0.0029	0.0191
ABTONE$_{it-1j}$	0.0327***		0.0237*		0.0372***	
NTONE$_{it-1j}$	–0.1180		–0.1693		–0.0595	
ABPOS$_{it-1j}$		0.0600***		0.0514**		0.0652**
ABNEG$_{it-1j}$		–0.1025***		–0.0655		–0.1280***
NPOS$_{it-1j}$		–0.1382		–0.1972		–0.0833
NNEG$_{it-1j}$		–0.0091		–0.0725		0.0381
DA$_{it-1j}$	0.0612**	0.0467**	0.0904*	0.0641	0.0392	0.0408
PMPL$_{it-1j}$	0.0627**	0.0480**	0.0942**	0.0677*	0.0365	0.0376
UE$_{it-1j}$	0.0002***	0.0002***	0.0000	–0.0001	0.0004***	0.0004***
SIZE$_{it-1j}$	0.0046*	0.0029	0.0068	0.0044	0.0008	–0.0001
BTM$_{it-1j}$	–0.0009	–0.0010	0.0039	0.0040	–0.0062	–0.0063
RET$_{it-1j}$	0.0180	0.0080	0.0189	0.0034	0.0169	0.0128
STDRET$_{it-1j}$	–0.0010***	–0.0010***	–0.0009***	–0.0010***	–0.0011	–0.0009
STDEARN$_{it-1j}$	–0.0396	–0.0407	–0.0462	–0.0476	–0.0300	–0.0312
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
OBS	1032	1032	517	517	515	515
ADJ R-SQ	0.0294	0.0291	0.0156	0.0137	0.0682	0.0711

Panel B: Dependent Variable CAR (+2, +61)

Variables	FULL SAMPLE		FIRST QUARTER		THIRD QUARTER	
	(1)	(2)	(1)	(2)	(1)	(2)
INTERCEPT	–0.0941	–0.2156*	0.0506	–0.0146	–0.1342	–0.2924
ABTONE$_{it-1j}$	0.0248**		–0.0122		0.0436***	
NTONE$_{it-1j}$	0.1459		–0.1026		0.3895*	
ABPOS$_{it-1j}$		0.0317		–0.0070		0.0446
ABNEG$_{it-1j}$		–0.0587		0.0774		–0.1300**
NPOS$_{it-1j}$		0.3680		–0.0335		0.7621*
NNEG$_{it-1j}$		0.4141		0.5463		0.2049
DA$_{it-1j}$	0.0741*	0.0806**	0.1332**	0.1260**	0.0248	0.0547
PMPL$_{it-1j}$	0.0776*	0.0858**	0.1379**	0.1308**	0.0227	0.0548
UE$_{it-1j}$	–0.0002	–0.0001	0.0000	0.0000	–0.0002	–0.0001
SIZE$_{it-1j}$	0.0019	0.0026	0.0020	0.0007	–0.0032	–0.0011
BTM$_{it-1j}$	–0.0127**	–0.0121**	0.0185**	0.0190**	0.0042	0.0034
RET$_{it-1j}$	0.0425**	0.0280*	0.0209	0.0189	0.0673***	0.0397**
STDRET$_{it-1j}$	0.0006**	0.0008**	0.0001	0.0001	0.0050***	0.0053***
STDEARN$_{it-1j}$	–0.0187	–0.0175	–0.0519	–0.0550	–0.0021	0.0043
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
OBS	1032	1032	517	517	515	515
ADJ R-SQ	0.0257	0.0308	0.0029	0.0038	0.0953	0.1067

This table reports regressions of cumulative abnormal return on abnormal tone of 1032 IMSs during the period 2008 – 2013. Separate first and third quarter results are also reported. INDUSTRY FE includes eight ICB classification 1/0 indicator variables, omitting 'Oil and Gas', YEAR FE includes five 1/0 indicator variables for each year in sample, omitting the year 2008. P-values are based on robust standard errors, clustered at the firm-level. OBS: number of observations. All variables are defined in Table 3. *, **, and *** indicate p-values significant at the 10% level, 5% level and 1% level respectively.

Table 7

Regression Results Summary of Splitting the Sample into Financial Crisis and Non-Financial Crisis Years

	FINANCIAL CRISIS (2008 - 2009)			NON-FINANCIAL CRISIS (2010 - 2013)		
Panel A: Full Sample	OBS = 371			OBS = 661		
	ABTONE	*ABPOS*	*ABNEG*	*ABTONE*	*ABPOS*	*ABNEG*
EARN$_{itj}$	0.0007	–0.0321	–0.0247	0.0112**	0.0328	–0.0154
CAR (–1, +1)	0.0279**	0.0363	–0.1031**	0.0347***	0.0683***	–0.1041
	NTONE	*NPOS*	*NNEG*	*NTONE*	*NPOS*	*NNEG*
EARN$_{itj}$	–0.0525	–0.1186	0.4907	–0.0480	–0.0828	–0.0909
CAR (–1, +1)	0.0436	–0.1189	–0.0997	–0.1791*	–0.1411	0.0981
Panel B: First Quarter	OBS = 184			OBS = 333		
	ABTONE	*ABPOS*	*ABNEG*	*ABTONE*	*ABPOS*	*ABNEG*
EARN$_{itj}$	–0.0025	–0.0563**	–0.0324	0.0045	0.0291	0.0051
CAR (–1, +1)	0.0370	0.0525	–0.1235*	0.0158	0.0534*	–0.0361
	NTONE	*NPOS*	*NNEG*	*NTONE*	*NPOS*	*NNEG*
EARN$_{itj}$	–0.0637	–0.1293	0.5541	–0.0503	–0.0803	–0.0852
CAR (–1, +1)	–0.0289	–0.0493	0.0738	–0.2042	–0.2649	–0.1148
Panel C: Third Quarter	OBS = 187			OBS = 328		
	ABTONE	*ABPOS*	*ABNEG*	*ABTONE*	*ABPOS*	*ABNEG*
EARN$_{itj}$	0.0057	–0.0017	–0.0161	0.0181***	0.0378	–0.0329
CAR (–1, +1)	0.0114	–0.0095	–0.0843	0.0518***	0.0890***	–0.1658***
	NTONE	*NPOS*	*NNEG*	*NTONE*	*NPOS*	*NNEG*
EARN$_{itj}$	–0.0467	–0.0966	0.4092	–0.0514	–0.1000	–0.0743
CAR (–1, +1)	0.1620	–0.1656	–0.1180	–0.1458	0.0224	0.2228

This table reports regressions of year-end earnings and three-day cumulative abnormal return on normal and abnormal tone, separated by the financial crisis years (2008 – 2009) and non-financial crisis years (2010 – 2013) in a total of 1,032 IMSs. Separate first and third quarter results are also reported. Unreported for brevity in the year-end regressions in are the intercepts and the following control variables: DA, PMPL, EARN, SIZE, BTM, RET, STDRET, STDEARN, INDUSTRY FE and YEAR FE. Unreported in the three-day cumulative abnormal return regressions are all of these variables except EARN which is replaced by UE. P-values are based on robust standard errors, clustered at the firm-level. OBS: number of observations. All variables are defined in Table 3. *, **, and *** indicate p-values significant at the 10% level, 5% level and 1% level respectively.

Appendix A
Tone Measurement: IMS Examples

Example 1 [Our financial performance since the year end has been in line with market expectations, and] *we anticipate that our half yearly report will show earnings and pre-tax profits significantly ahead of the figures for the comparable period last year.* (Telecom Plus plc, 14 July 2010)
Group-Yes; Forecast-Yes; Earnings-Yes; Tone-Positive. Clause Tone Score: 1

Example 2 *Our financial performance since the year end has been in line with market expectations,* [and we anticipate that our half yearly report will show earnings and pre-tax profits significantly ahead of the figures for the comparable period last year.] (Telecom Plus plc, 14 July 2010)
Group-Yes; Forecast-No; Earnings-No; Tone-Neutral. Clause Tone Score: 0

Example 3 *Revenue in the Operations' division has been at a very similar level to the same period last year,* [but profitability has moved ahead strongly, helped by exceptional performances in Japan and Germany.] (Photo-Me International plc, 8 March 2013)
Group-No; Forecast-No; Earnings-No; Tone-Neutral. Clause Tone Score: 0

Example 4 *We estimate that the Group would incur approximately 1m in incremental costs for every percentage point above 15% that the rate of duty is set.* (Rank Group plc, 8 October 2009)
Group-Yes; Forecast-Yes; Earnings-No; Tone-Negative. Clause Tone Score: –1

Example 5 *Stevie Spring, Future plc Chief Executive said: "We expect the trading environment to remain challenging throughout 2011,* [but our progress online and in customer publishing - our main growth areas - and in our tablet and mobile development - is pleasing."] (Future plc, 9 February 2011)
Group-Yes; Forecast-Yes; Earnings-No; Tone-Negative. Clause Tone Score: –1

Example 6 [Stevie Spring, Future plc Chief Executive said: "We expect the trading environment to remain challenging throughout 2011, but] *our progress online and in customer publishing - our main growth areas - and in our tablet and mobile development - is pleasing."* (Future plc, 9 February 2011)
Group-No; Forecast-No; Earnings-No; Tone-Positive. Clause Tone Score: 1

Example 7 [The period since acquisition has proceeded well] *and the Group anticipates the acquisition being earnings enhancing for the year ending 31 December 2012.* (Mears Group plc, 10 November 2011)
Group-Yes; Forecast-Yes; Earnings-Yes; Tone-Positive. Clause Tone Score: 1

Example 8 *The period since acquisition has proceeded well* [and the Group anticipates the acquisition being earnings enhancing for the year ending 31 December 2012.] (Mears Group plc, 10 November 2011)
Group-Yes; Forecast-No; Earnings-No; Tone-Positive. Clause Tone Score: 1

Example 9 *Including petrol, Group sales decreased by (0.8)% at actual exchange rates and by (1.2)% at constant rates.* (Tesco plc, 4 December 2013)
Group-Yes; Forecast-No; Earnings-No; Tone-Negative. Clause Tone Score: –1

Example 10 *Christmas trading was ahead of our expectations.* (Associated British Foods, 17 January 2008)
Group-Yes; Forecast-No; Earnings-No; Tone-Positive. Clause Tone Score: 1

Example 11 *As expected, the prepay segment remains weak, with a significant decline in low-end prepay sales year-on-year.* (Dixon's Retail plc, 24 January 2012)
Group-No; Forecast-No; Earnings-No; Tone-Negative. Clause Tone Score: –1

Example 12 *Losses here are currently expected to be materially higher than previous guidance.* (Centrica plc, 12 May 2008)
Group-Yes; Forecast-Yes; Earnings-Yes; Tone-Negative. Clause Tone Score: –1

This appendix presents the textual analysis process for measuring tone of some selected clauses. Company names and IMS publication dates are given in parenthesis () after the clause. Separate clauses within a textual sentence, the tone scores of which are not shown in the example, are separated with brackets []. Group: 'Yes' if the clause is group-level, 'No' otherwise. Forecast: 'Yes' if the clause is forward-looking, 'No' otherwise. Earnings: 'Yes' if the clause is related to earnings, no otherwise, 'No' otherwise. Tone: 'Positive' if clause is favourable, 'Negative' if clause is unfavourable, 'Neutral' otherwise. Clause Tone Score: 1 if tone is 'Positive', –1 if tone is 'Negative', 0 if tone is 'Neutral'.

Appendix B
Measuring Abnormal and Normal Tone

Variables	Dependent: $TONE_{it-1j}$		Dependent: POS_{it-1j}		Dependent: NEG_{it-1j}	
	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value
INTERCEPT	–0.1811	0.319	0.0675	0.253	0.2088	0.000
$EARN_{it-1j}$	0.2437	0.187	0.1238	0.039	0.0066	0.884
$STDEARN_{it-1j}$	–0.0319	0.825	–0.0206	0.660	0.0081	0.818
$CHEARN_{it-1j}$	0.0106	0.364	0.0002	0.968	–0.0025	0.380
RET_{it-1j}	0.1129	0.000	0.0184	0.050	–0.0279	0.000
$STDRET_{it-1j}$	–0.0004	0.881	–0.0002	0.766	0.0001	0.863
$SIZE_{it-1j}$	0.0264	0.005	0.0116	0.000	–0.0026	0.256
BTM_{it-1j}	0.0036	0.852	0.0090	0.150	0.0046	0.321
$LOSS_{it-1j}$	–0.0467	0.291	–0.0539	0.000	–0.0198	0.065
AGE_{it-1j}	–0.0153	0.785	0.0068	0.708	–0.0053	0.694
$BUSSEG_{it-1j}$	–0.0502	0.267	–0.0118	0.422	0.0145	0.188
$GEOSEG_{it-1j}$	–0.0007	0.988	–0.0618	0.000	–0.0268	0.015
UE_{it-1j}	0.0008	0.051	0.0002	0.087	–0.0000	0.619
$ANFOR_{it-1j}$	0.0357	0.672	–0.0056	0.840	–0.0387	0.063
F-VALUE	4.14	0.000	6.81	0.000	2.47	0.003
OBS	1032		1032		1032	
ADJ R-SQ	0.0502		0.0682		0.0182	

This appendix reports the regression coefficients and p-values of the net tone, positivity and negativity models based on 1032 IMSs during the period 2008 – 2013. The predicted values of these models are NTONE, NPOS and NNEG. The residuals of these models are ABTONE, ABPOS and ABNEG respectively. Coeff: Coefficient. OBS: number of observations. All variables are defined in Table 3.

Appendix C
List of Sample Firms

ANGLO-EASTERN PLANTATIONS	GALLIFORD TRY	NAMAKWA DIAMONDS (DI)
ANGLO PACIFIC GROUP	GEM DIAMONDS (DI)	NATIONAL EXPRESS
ASHLEY (LAURA) HOLDINGS	GENUS	NCC GROUP
ASSOCIATED BRITISH FOODS	GOODWIN	NEXT PLC
BALFOUR BEATTY	GREENE KING	NORTHERN FOODS
BARRATT DEVELOPMENTS	HALFORDS GROUP	PHOTO-ME INTERNATIONAL
BERENDSEN	HAYS	PREMIER FOODS
BRAEMAR SHIPPING	HYDER CONSULTING	PV CRYSTALOX SOLAR
BRAMMER	HILTON FOOD GROUP	RANK GROUP
BROWN (N) GROUP	HORNBY	REGUS
BSS GROUP	HOCHSCHILD MINING	RENISHAW
BURBERRY GROUP	IMAGINATION TECHNOLOGIES	RICARDO
CENTRAL RAND GOLD	IMI	RM
CENTRICA	IMPERIAL TOBACCO GROUP	ROK
CINEWORLD GROUP	INCHCAPE	ROLLS-ROYCE HOLDINGS
CLARKSON	INFORMA	SALAMANDER ENERGY
COBHAM	INTEC TELECOM SYSTEMS	SENIOR
COLT GROUP	INTERNATIONAL POWER	SEVERFIELD-ROWEN
COMMUNISIS	ITE GROUP	SHANKS GROUP
COMPASS GROUP	ITV	SPORTECH
COMPUTACENTER	KCOM GROUP	SSL INTERNATIONAL
CONSORT MEDICAL	KELLER	STAGECOACH GROUP
COOKSON GROUP	LAMPRELL	TED BAKER
DANA PETROLEUM	LOGICA	TELECOM PLUS
DE LA RUE	LOOKERS	TESCO
DIPLOMA	MANAGEMENT CONSULTING GROUP	VITEC GROUP
DIXONS RETAIL	MARSHALLS	UK MAIL GROUP
DUNELM GROUP	MARSTON'S	ULTRA ELECTRONICS HOLDINGS
EAGA DEAD	MEARS GROUP	UMECO
FENNER	MENZIES (JOHN)	VODAFONE GROUP
FIDESSA GROUP	MORGAN SINDALL GROUP	WYG
FRESNILLO	MORRISON (WM) SUPERMARKETS	WPP
FULLER SMITH 'A'	MOUCHEL GROUP	WSP GROUP
FUTURE		