

Disclosure Tone, Financial Performance and Earnings Management: Evidences from UK Conference Calls

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degree of Doctor of Philosophy

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Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

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Related paper and abstracts presented in conferences

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WITH THE NAME OF ALLAH, THE MOST MERCIFUL, THE MOST KIND

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Dedication

يكرس هذا العمل إلى روح والدي كايد، الذي كان يحلم أن يراني في هذه المرحلة من
الحياة، ولكن إرادة الله فوق كل شيء

*This work is dedicated to the soul of my Dad **Kayed**, who was dreaming to
see me in this stage of life, but Allah's will, above everything.*

Abstract

The key focus of this thesis is why firms engage in tone management in earnings conference calls. Specifically, the first objective in this thesis is to examine whether managerial tone can be used to signal a firm's financial performance. The second objective is to examine when firms engage more in earnings management to meet or just beat the earnings benchmark; whether managers use their tone strategically to communicate with their stakeholders. This thesis reviews the theories and the current literature related to management communication in corporate reporting and disclosures, and has two interrelated studies looking at the tone management in the earnings conference calls of United Kingdom (UK) non-financial FTSE 350 companies for the period from 2010 to 2015. The first study examines the associations between tone management and two observations of firm's financial performance independently (i.e., current and future performance). The second study in this thesis focuses on firms that meet or just beat an earnings benchmark (JMBE). It examines whether JMBE employ tone management in the earnings conference call to complement earnings management. It also examines whether the audience tone in JMBE fails to predict future performance than other firms. The results of the first study show that the managerial tone in the earnings conference call reflects the firm's current and future performance. This suggests that managerial tone is informative source about financial performance. In other words, it is used to signal information about financial performance, which will accordingly reduce the information asymmetry between managers and stakeholders. In the further analysis in the first study, it is shown that audience tone in the earnings conference call is positively associated with future performance, suggesting that audience tone is in line with managerial tone in signalling information to help users to predict future earnings. The results of the second study show that JMBE and engage more in earnings management are more likely to disclose abnormal tone during the earnings conference call in order to conceal the earnings management techniques that have been used to just beat or meet the earnings benchmark. This evidence suggests that earnings and tone management in JMBE are complementary strategies used for impression management purposes. The results also show that audience tone in JMBE is less likely to predict future performance. This supports the argument that the audience perception in such firms is successfully obfuscated by managers' tone.

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1 Introduction

1.1 Introduction

Demand for corporate communications ascends from the difference in information provided and the conflict in incentives between managers and stakeholders (Kothari et al., 2009). More specifically, there is information asymmetry between firms' managers and outsiders. Firms' managers have a higher level of information about the current performance and the future potential profitability of firms' investment than do outside users. This, in turn, renders it challenging for outsiders to evaluate the financial performance and investment opportunities. Therefore, to mitigate the serious consequences of such conflict between managers and stakeholders, early studies induce managers to communicate with outsiders' users and disclose to them additional financial information (e.g., Gjesdal, 1981; Dye, 1998). Such corporate communication stemming from the management environment can be used to mitigate the information asymmetry and agency conflicts between insiders and outsiders of the organisation, and accordingly assist investors or capital providers to evaluate management's performance and the expected return of investment opportunities (Healy and Palepu, 2001; Beyer et al., 2010). Additionally, corporate communication of financial information offers the opportunity for capital providers to monitor the management's use of their capital (Beyer et al., 2010). Tone (i.e. sentiment) is an important communication vehicle that has recently received increased attention in academia. Management tone is vital and fundamental information has incremental explanatory power in capital market; once disclosed, it promptly affects the market return (Demers and Vega, 2011; Davis et al. 2012; Feldman et al., 2010; Davis and Tama-Sweet, 2012; Frankel et al., 2010; Price et al., 2012). Managers use it to communicate with market participants about their

performance. Therefore, managerial tone can be used as a tool for managers to strengthen users' perceptions of financial performance and reduce the information asymmetry between them (Miller and Piotroski, 2002; Li, 2010b; Frankel et al., 2010; Feldman et al., 2010; Demers and Vega, 2011; Davis et al., 2012; Price et al., 2012; Davis et al., 2015). Conversely, managers can also manipulate tone to obscure their performance. Schleicher and Walker (2010) report that management tone in forward-looking narratives of the UK firms is used for impression management purposes to change the perceptions of the stakeholders. Cho et al. (2010) argue that the bias in management tone in corporations' environmental disclosures is associated with a firm's environmental performance. Huang et al. (2014) find that managerial tone in earnings press releases misinform users about future performance. Barkemeyer et al. (2014) show that tone in corporate sustainability reports is indicative of impression management rather than accountability. Boudt and Thewissen (2018) demonstrate that the strategic positioning of tone in CEO letters is used for impression management purposes. For the reasons stated above, tone management is in this thesis my main area of interest. There are several channels where tone can be employed, such as corporate filling, sustainability reports, corporate environmental disclosure, news media articles, earnings press releases and earnings conference calls. My focus in this thesis is tone management in the earnings conference call for its importance in capital market. Earnings conference call is a meaningful communication medium between firm's managers and market participants. It is expected that, in an earnings conference call, management will disseminate information and interactively discuss this information with market participants, mainly analysts, which results in the creation of information that is useful to other parties. Earnings conference call has a special feature that does not exist in other formal communication media, such as corporate fillings. Specifically,

the information provided in such call is orthogonal, and this information significantly affects the stakeholders' decisions (Frankel et al., 1999; Brown et al., 2004; NIRI, 2004; Kimbrough, 2005; Price et al., 2012). Additionally, most participants in the call are analysts (i.e., sophisticated users) who are experts in accounting and financial fields. Furthermore, the information in an earnings conference call is characterised with dynamic frame (Blau, 2015), compared with static frame in other formal communication media. Clearly, the scripts of earnings conference calls are presented in a different way, relying on the interactive discussion between managers, analysts or other audiences. Although the earnings conference call is considered as a valuable source of information in capital market (Frankel et al., 1999; Bushee et al., 2003), it has greater managerial incentive to obscure than other reports (Bushee et al., 2018). Larcker and Zakolyukina (2012) provide insights about the management deception approach in earnings conference calls. The conflict between researchers in evaluating this medium of management communication motivates the author to gain deeper insights into this communication channel.

Tone management phenomena can be explained by two different streams based on previous literature. The first stream is based on signalling theory. Such a theory is used in cases where tone is given to mitigate the information asymmetry between managers and users through signalling more information for users (e.g., Davis et al. 2012; Patelli and Pedrini, 2014). The second stream tests the self-serving behaviour of managerial tone. This stream can explain tone in cases where managers use it strategically to obscure information through changing the stakeholders' perceptions, which will accordingly increase the information gap between them and the stakeholders in order to achieve some personal interest, such as beating or meeting the earnings benchmarks, financial gain, self-preservation, job security or bonus e.g. Smith and Taffler (2000);

Sydserff and Weetman (2002); Henry (2008); Huang et al. (2014). Such theoretical streams have been taken into consideration in this thesis.

1.2 Aim and objectives of the thesis

The aim of this thesis is mainly to evaluate managerial tone in earnings conference calls. In particular, it investigates the association between tone and financial performance in different cases. From a theoretical perspective, this thesis looks at different theoretical streams in explaining tone. Namely, it uses economic and (social) psychology theories. Although there are studies which examine managerial tone, studying the tone management in earnings conference calls has received very little attention by contrast. Such research on tone management in earnings conference calls has tended to focus on testing the association between tone and specific indicators, such as manager-individual characteristics (Davis et al., 2015), share prices (Chen et al., 2018; Price et al., 2012), short sellers' return predictability (Blau et al., 2015), analysts tone and investors' reaction (Brockman et al., 2015), and analysts' earnings expectations (Frankel et al., 2010), rather than financial performance indicators. The implication of covering such area of research is to know how managers employ their tone in earnings conference calls (i.e., does managerial tone reflect relevant information for decision making, or obscure information?) and the extent to which managerial tone is critical in the capital market; improved tone management in earnings conference calls should help to reduce information asymmetry, which will assist stakeholders to predict earnings accordingly.

This thesis extensively reviews the theories and the existing literature related to management communication; the thesis actually extends the literature in two main interrelated studies. The first study includes the first objective of the thesis, which is to examine whether managerial tone can be considered as informative source about

financial performance. In other words, can the management tone be used to signal a firm performance? The second study considers the second objective of the thesis, which is to examine whether managers use their tone strategically to communicate with their stakeholders in cases where firms employ earnings management to meet or just beat an earnings benchmark. According to the existing literature, firms are more likely to use their discretion in reported earnings (i.e., earnings management) to improve the earnings figure in order to meet or just beat last year earnings (Healy and Wahlen, 1999; Dechow and Skinner, 2000; Fields et al., 2001). The second study investigates whether these firms manipulate tone in earnings conference calls to conceal their discretion in reported earnings. It focuses on abnormal tone rather than tone itself, as it studies the management discretion applied in the tone. It also investigates whether the audience tone in firms that meet or just beat the earnings target fails to predict future performance.

In conclusion, the thesis looks at different theoretical streams that can explain management communication and empirically examines how managerial tone in the earnings conference call is managed in different settings of financial performance.

1.3 Intended contribution of the thesis

This thesis is particularly important in the context of tone management. It contributes to the literature theoretically and empirically. It also contributes to practice.

Theoretically, it provides insight about one phenomenon in explaining the self-serving and altruistic behaviour. It explains why there are mixed results in prior studies (i.e., information or obfuscation) about tone management behaviour. It shows that multiple theories can be employed to explain tone management behaviour, depending on the corporate financial performance settings. Specifically, in my first study I show that economic theory explains management tone in earnings conference call; as such, tone

can be used to signal financial performance. In my second study, I use a different setting of corporate financial performance. I focus on firms that engage in earnings management to just meet or beat last year's earnings. Tone is explained in this case by self-serving behaviour. In this case, tone is used strategically as an impression management behaviour for self-serving purposes. Overall, in FTSE 350, most companies' managerial tone in the earnings conference call is in line with their performance. Only few firms (i.e., those meeting or just beating firms) are engaged in tone management to complement earnings management. I conclude that when different settings of corporate performance are applied, different results will be obtained and they will be explained by different theories.

Empirically, this thesis empirically contributes to the literature in a number of ways:

First, it adds to the limited existing body of literature on the extent of the use of management tone in earnings conference call. There are a few studies which examine management tone in earnings conference calls (e.g., Davis et al., 2015; Chen et al., 2018; Price et al., 2012; Blau et al., 2015; Brockman et al., 2015; Frankel et al., 2010), but they are applied in the US market. However, this thesis uses tone in earnings conference calls of FTSE 350 companies in the UK. I study the managerial tone in different sections of the call (i.e., the presentation section, Q&A section, and both of these). To the best of my knowledge, the earnings conference call in the UK context has seldom been explicitly considered in previous pieces of research.

Second, the evidence in the current literature on the association between management tone and financial performance are mixed. Some researchers argue that managerial tone is positively related to financial performance (Miller and Piotroski, 2002; Li, 2010b; Feldman et al., 2010; Demers and Vega, 2011; Davis et al. 2012). However, other researchers show that managerial tone is negatively related to financial performance

(Schleicher and Walker, 2010; Cho et al., 2010; Huang et al., 2014; Barkemeyer et al., 2014). This thesis adds to these mixed results by providing evidence on the association between management tone in the earnings conference call and different sittings of financial performance in the context of the UK. Testing such association using the earnings conference call as a medium of the management tone has not been fully covered by previous research. Most of the previous studies of tone in earnings conference call focus on the market reaction. For example, Chen et al. (2018) show that analyst tone significantly affects the intraday stock prices during the discussion period in the earnings conference call. Price et al. (2012) find that stock price immediately responses to tone disclosed during the earnings conference call. Frankel et al. (2010) show in their additional analyses that when tone in an earnings conference call is more negative, the market reaction becomes worse. Frankel et al. (2010) focus on analysts' expectation. They show that the management tone in earnings conference calls for firms that just miss the analysts forecast, is more pessimistic than other firms. More recently, Davis et al. (2015) show that managers' characteristics, such as gender, age, educational and career experiences play an important role in disclosing positive or negative tone in earnings conference calls. Clearly, although there are some studies shed light on tone in earnings conference calls, they are mainly not focusing on financial performance. However, in this thesis, I focus on the association between management tone in earnings conference calls and financial performance. Specifically, I show that management tone in the earnings conference call of UK firms is positively associated with firm's current and future performance. I also find that this evidence is stronger for firms that have poor performance than those have strong performance. This suggests that tone in this venue is informative and more value relevant for stakeholders about financial performance; it can be used to predict future earnings, and firms with poor

performance are more interested in signalling information about their performance through managerial tone in earnings conference call.

Third, this research adds to the existing literature on the association between earnings management and voluntary disclosure. Although there are many studies investigating this association, using tone management as type of management disclosures to examine this association has received a very little attention in the literature. For example, Huang et al. (2018) provide a little attention about the association between accruals earnings management and tone management in earnings press releases. However, to the best of the author's knowledge, this thesis provides a novel evidence on the association between earnings management and tone management in earnings conference calls and how these strategies are used to just beat the earnings benchmarks. In particular, it shows a positive association between the interaction between earnings management and JMBE, and abnormal management tone in earnings conference calls. In other words, I show that JMBE and engage more in accruals or real earnings management are more likely to use the tone strategically during the earnings conference call in order to conceal the earnings management techniques that have been used to just beat or meet the earnings benchmark. This indicates that earnings and tone management are complementary strategies used for self-serving purposes in firms' meetings or just to beat an earnings benchmark. This result suggests that managers' tone in the earnings conference call is used for self-serving or obfuscation purposes for JMBE.

Fourth, I add to the existing literature on the association between analysts' tone and future performance. This thesis contributes to the literature by showing that the tone of analysts and other audience in earnings conference calls positively predicts future performance, but in JMBE, it fails to predict future performance. This confirms that

managers' tone successfully obfuscates the perception of audience in meeting or just beating an earnings benchmark companies.

Fifth, using abnormal tone rather than tone as a whole in testing the association between earnings and tone management is another novel feature of this thesis. In the current literature, only five studies recently employ abnormal tone (i.e., Huang et al., 2014; Arslan-Ayaydin et al., 2016; D'Augusta and DeAngelis, 2017; Baginski et al., 2018; Lee and Park, 2018), all of which applied data from the United States (US).

Sixth, it is the first research study that compares managers' and the audience's tone during the earnings conference call of the UK firms. I report that managers are more optimistic in their speaking during the UK earnings conference call. In contrast, the audience speaking is more pessimistic.

Practically, this PhD research contributes to practice. I show that managerial tone in earnings conference calls assists stakeholders in decision-making. It decreases the information gap and helps them to predict future performance. Additionally, this research helps policy-makers and practitioners to understand more about the management discretion used in reporting and earnings conference calls. It opens the door for future researchers to look at how earnings conference calls can be regulated. Based on the results, regulations for earnings conference calls are needed, in particular for firms around the earnings benchmarks (i.e., those just beating or meeting the earnings benchmark) in order to increase the accountability and transparency of earnings conference calls and to limit the serious consequences that may arise from managers' manipulation (whether in numbers or in their words as they can use both of them to achieve their purposes).

Overall, this PhD thesis contributes to the theories and practice in the role of tone management in the earnings conference call as an information intermediary in capital

market, and empirically adds to the literature new findings in term of the associations between either managerial tone or audience tone, and financial performance. It provides evidence in this respect to understand how managers use the tone in earnings conference calls in the UK spotlight.

1.4 Structure of the thesis

The remainder of this thesis is structured as follows. In Chapter 2, an in-depth review of the literature related to corporate reporting, earnings management, management disclosure and tone has been presented. This chapter is separated into several thematically allied sections. I commence, initially, by broadly describing the theories used in corporate reporting and disclosure and continue by outlining the concepts, motivation, types and measures of earnings management used in the literature and, then, reviewing the empirical studies of earnings management. Then, reviews of voluntary disclosures and accounting narratives are shown. I continue with the main focus of this thesis, which naturally concentrates on tone management. Definition, motivation, types, measures and a review of empirical studies related to tone management are found in this section of the chapter. The chapter ends by performing the empirical investigations that were completed in Chapters 3 and 4.

Chapters 3 and 4 are two self-contained essays. The essays apply the UK dataset, have their own literature reviews and test unique hypotheses. Although I recommend reading each essay separately, the theme of each one is integrated. Both of them focus on management tone in earnings conference call. More specifically, Chapter 3 studies the association between management tone in the earnings conference call and financial performance. It provides insights into the role of the earnings conference call in the information transmitted as a tone relative to firm's financial performance. Chapter 4 focuses on management discretion in reporting and narrative communication. It

examines the association between earnings management in corporate reporting and abnormal tone management in earnings conference calls in those JMBE.

Chapter 5 provides a summary and conclusion of this PhD research, briefly discusses the findings of my empirical essays, and mentions the limitations of this work, and provides suggestions for further research to be performed.

2 *Disclosure tone, corporate performance and earnings management: a review of the theoretical and empirical literature*

2.1 Introduction

Healy and Palepu (2001) argue that financial reporting and disclosure are used by managers as means to communicate with outsiders or investors about the economic performance perception of the firm. This means that the discretion in financial reporting (i.e., earnings management) and the discretion in disclosure both stem from the same source, which is “management”. Therefore, managers can exploit this; they can be more informative, or they can undertake manipulations in their reporting and narrative, which will obscure the information given to investors about corporate performance. This chapter reviews the literature on corporate reporting and communication. In particular, it extensively scrutinizes the literature related to management discretion in communication (i.e., management disclosures) and reporting (i.e., earnings management). Firstly, it shows the theories used in corporate reporting and disclosures. Secondly, this chapter shows tone management studies in the accounting narrative literature, starting with reviewing the voluntary disclosure and accounting narrative. Then, it presents the motivations, types, measures and the prior studies of tone management. Thirdly, it exhibits management discretion in reporting by reviewing the earnings management literature. It underlines the definitions, motivations, measures and types of earnings management. The review of these two concepts (tone and earnings management) is a fundamental issue in understanding the extent of discretion used by managers in reporting and narrative communication, particularly the effect of these two concepts on corporate performance. Finally, the chapter presents a summary and conclusion, and then ends by showing the research gap.

2.2 Theories in corporate reporting and disclosures

The incentives of corporate reporting and disclosures can be explained by many theories suggested by different researchers, such as Jensen and Meckling (1976), Spence (1973), Watts and Zimmerman (1990) and Healy and Palepu (2001). Unfortunately, there is no one specific theory that can be applied for all cases (Verrecchia, 2001). In fact, each theory addresses a different issue. The corporate reporting and disclosures can be explained from the viewpoint of economics theories (Jensen and Meckling, 1976; Watts and Zimmermann, 1986; Healy and Palepu, 2001; Core, 2001; Beyer et al., 2010), or psychology (social) theories (Heider, 1958; Jones and Davis, 1965; Kelley, 1967; Schlenker, 1980). These theories are described in detail below.

2.2.1 Economics-based theories

Economics theory relies on the self-interest behaviour of individuals. Deegan and Unerman (2011, p. 256) state that it, “as developed by watts and Zimmerman and others, is based on the central economics-based assumption that the actions of all individuals are driven by *self-interest*, and that individuals will always act in an opportunistic manner to the extent that their actions will increase their wealth”. Examples of economics theories that employ the self-interest behaviour are agency, signalling and disclosure cost theories.

1. Agency theory

This theory has been established by Jensen and Meckling, (1976) which is considered as the main theory that justifies firms’ voluntary disclosure to stakeholders, and it is commonly used in the previous disclosure studies, such as Wang and Hussainey (2013), Elshandidy et al. (2013), Elzahar et al. (2015). The agency relationship has been defined by Jensen and Meckling (1976, p. 308) as “a contract under which one or more (principals) engage another person (the agent) to perform some service on their behalf, which involves delegating some

decision-making authority to the agent”. The agency relationship is based on an assumption that the agents (managers) are motivated to maximize their wealth, and hence they organize self-serving activities to satisfy their self-interest which could have a harmful effect on the economic welfare for the principals (stakeholders) (Jensen and Meckling, 1976). There are two important problems in this respect: (1) How to align the conflict of interest between principals and agents. (2) How to ensure agents operate in the way that is expected by principals (Jensen and Meckling, 1976). Agency theory suggests that the gap between the principals and agents, will result in creating new managerial issues such as, managerial mischief (Nyberg et al., 2010). Agency theory has been very used in previous studies as an approach that describes the relationship between principals and agents. Eisenhardt (1989) argues that agency problems will stem from the executives or the managers who manipulate financial information in the firm in order to achieve their incentives, for example, when a manager chooses to buy a new equipment with a cheaper price and less quality to reduce the cost payment, which in turn will increase his/her bonuses. In other words, the principles suspect the agents’ behaviour, and this requires a bonding mechanism between agents and principles in order to reduce agency costs (Padgett, 2012). Previous researchers show different solutions to this problem. Kreps (1990, Chapters 17 and 18) suggests that optimal contracts between entrepreneurs and investors, such as compensation agreements and debt contracts, will mitigate the mis-valuation problem through providing full disclosure of private information. Healy and Palepu (2001) argue that regulation that requires managers to completely disclose relevant information is another solution to agency problem. Healy and Palepu (2001) also suggest that information intermediaries, such as financial analysts and rating agencies, who engage in private information production, play an important role in reducing the agency problem. A census of previous studies argue that the negative effects of agency problem can be mitigated by disclosing more relevant information whether

quantitative or qualitative, mandatory or voluntary, or via formal or informal channels (Gibbins et al., 1990; Botosan 1997; Sengupta 1998; Verrecchia 2001; Healy and Palepu, 2001; Bushman et al., 2004). Bujaki et al. (1999) find that the information asymmetry between managers and owners can be reduced by disclosing forward-looking information in the annual report. Clearly, agency theory suggests that managers can reduce agency costs if they increase the level of voluntary disclosure instead of bearing these costs, because the principals will be able to monitor the behaviour of managers through their disclosure. Chalmers and Godfrey (2004) argue that reducing agency cost can result in a reduction in the information gap and uncertainty. Accordingly, managers who have information about future earnings may use this information to mitigate the agency costs, which will reduce the uncertainty and information asymmetry. Arnold and De Lange (2004) argue that the information asymmetry arises if managers have a competitive advantage of information more than the principals. Therefore, principals (owners) need more information such as forward-looking earnings information to help them in the evaluation of future earnings and cash flow. Based on the discussion above, agency theory could be used in explaining the tone management behaviour. In particular, managers may use their tone to provide information to stakeholders in order to decrease the agency costs.

2. Signalling theory

Signalling theory was proposed by Akerlof (1970), and then developed by Spence (1973). It attempts to clarify the information asymmetry between managers and shareholders (Morris, 1987; Black et al., 2006). While it is true that signalling theory can be considered as an extension of agency theory (Jensen and Meckling, 1976; Buskirk, 2012), the approach for each theory stems from different inception point. In term of agency theory, this theory argues that there is a conflict between managers and shareholders because managers have incentives to behave opportunistically (Padgett, 2012). However, signalling theory stresses the issues

that come from the assumption that managers have more information about the firm than its outsiders (shareholders) do (Kapopoulos and Lazaretou, 2007; Bebchuk and Weisbach, 2010). Therefore, managers are able to exploit this information in order to boost their personal interest (Jensen and Meckling, 1976). However, managers can signal information to reduce the information asymmetry which will cost them. In fact, there are many ways that can be used by managers to provide signals, but the main point here is that the signals must be credible to distinguish high-quality from low-quality firms through these signals (disclosure) (Padgett, 2012). Disclosure is one of the means that can be used to signal the firm's performance to the market participants (Gray et al., 1995; Aerts, 2005). Firms with a strong performance provide more disclosure about good news in order to avoid being pooled with those firms that have poor performance (Cooke, 1989; Wallace and Naser, 1995; Wallace et al., 1994; Skinner, 1994). Similarly, managers who have good news may voluntarily disclose information for signalling their good news to shareholders and market participants to distinguish themselves from managers who have bad news. Teoh and Hwang (1991) state that firms that have good news will provide a full package of disclosure if it is costless to differentiate their performance from those firms that have bad news. However, firms that have bad news may also disclose information voluntarily. The reason of such a disclosure is to signal their power and ability to increase earnings in the future and to reduce the reputation cost, which may result from delaying of disclosure in the appropriate time. Skinner (1994) states that firms with weak performance can explain this performance by disclosing more information in order to avoid damaging their reputation in the capital market due to negative performance. In conclusion, in both types of news, whether good or bad, managers should signal information for users to keep them posted about the firm, which will increase the users' trust in managers' performance.

Tone management can be considered as management disclosure. Therefore, it can be posited that managers will provide elaborate positive tone as a positive signal of superior performance. Provided that it does not involve proprietary information, managerial tone is expected to send a positive signal and attract a favourable market reaction in the form of higher expected future earnings by market participants. In conclusion, signalling theory could be used in explaining the tone management behaviour. This will be investigated in Chapter 3 in this thesis.

Having discussed two important theories – agency and signalling theories – which can explain corporate reporting and disclosures, the other theories are those which have attempted to explain voluntary disclosure.

3. Disclosure cost theories

Managers may achieve their purposes by using disclosure. However, disclosure generates some costs which should be taken into serious consideration. Therefore, if managers wish to disclose voluntarily more information about the firm, they should make sure that the benefits of such disclosure outweigh the potential costs. More clearly, a cost-benefit analysis for disclosure is needed. Cooke (1992) states that managers intend to disclose more information voluntarily when the benefits are more than its costs.

There are different costs types for disclosure (Foster, 1986). One type can be directly related to disclosures and all other types indirectly associated with disclosure, which stem from the impact of disclosure on firms' activities such as political, proprietary and litigation costs (Leventis, 2001). Explanations for each type are provided below:

3.1 Direct costs of disclosure

These costs arise directly when issuing disclosure, such as production, preparation and dissemination of the information (Field et al., 2005; Core, 2001). Other researchers provide

other examples of these costs, including the costs of collecting and gathering the information needed, processing, presenting, auditing, technology equipment and the management time spent on disclosure of this information (Cook, 1992; Gray et al., 1990; Mautz and May, 1978; Foster, 1986). Clearly, if the managers are able to incur these costs, then they will provide more disclosure. Therefore, these costs may constrain managers from providing more narrative disclosure.

3.2 Political cost of disclosure

The political cost idea is derived from Watts and Zimmerman (1978). It proposes that managers are concerned about political issues, such as explicit or implicit taxes, or other regulation activities (Healy and Palepu, 2001; Jensen and Meckling, 1978; Watts and Zimmermann, 1978).

Political costs can be used to explain voluntary disclosure, where it suggests that some companies are politically observable and regulators seek voluntary disclosure in order to make decisions (Watts and Zimmerman, 1986). Thus, managers may increase the voluntary disclosure level in order to minimize costs related to political issues. Consequently, political costs can be used to explain why managers voluntarily disclose narrative information, which means that companies that are more observable politically and have high political costs are motivated to provide more voluntary narrative disclosure.

3.3 Proprietary costs of disclosure

Proprietary costs can be defined as “the costs associated with strategic decision-making by a competitor using all available information” (Luo et al., 2006, p.506). Therefore, competitors can use the private information disclosed voluntarily in order to impede a firm’s production activities. Verrecchia (1983) argues that disclosing information to the public may impair the competitive position of a firm. More specifically, it has been argued that information

disclosed voluntarily can be used by competitors to achieve their personal benefits (Linsley and Shrivess, 2005; Tsakumis et al., 2006). Verrecchia (1983) states that it is less desirable that managers provide information which may be used by competitors, when there is a proprietary cost of disclosure. Clearly, firms are more likely to non-disclose information if this information has a high proprietary cost; this information has a vital role for competitive position (Verrecchia, 1983; Wagenhofer, 1990; Feltham and Xie, 1992; Gigler, 1994). Consequently, managers may reduce their narrative disclosure to reduce the proprietary cost, and to avoid helping firm's competitors.

3.4 Litigation costs of disclosure

According to Healy and Palepu (2001), managers' are concerned about litigation cost in two respects: first, they increase disclosure to avoid legal acts against them when disclosure is not sufficient to shareholders. Second, they may hide or reduce disclosure that is related to the forward-looking information in order to avoid legal actions when it is inaccurate. In fact, litigation has a high cost and firms usually try to adopt or apply policies that can mitigate litigation costs (Lowry, 2009). Accordingly, managers may change their narrative disclosure based on the amount of litigation costs.

In conclusion, there are different costs, discussed above, which stem from disclosing information from managers to stakeholders. It has been argued that, in case of high cost disclosure, managers tend to increase the firm's value by disclosing information, only if this information is "favourable" (Jovanovic, 1982; Verrecchia, 1983; 1990; Dye, 1986; Lanen and Verrecchia, 1987). According to Aboody and Kasznik (2000), "favourable" information could be in positive or in negative way, relying on managers' incentives since sometimes managers are interested in reducing the share's value in case of a stock option is available. However, Jorgensen and Kirschenheiter (2003) state that information can be considered as favourable information when it contributes to maximizing the firm's asset value and/or is at a

low level of risk. When disclosure is not found by rational shareholders and investors due to the resulting cost, they will believe that the firm has a high level of risk or that their asset value is low. Although their way of thinking in the absence of disclosure will consider that a firm has “bad news”, managers will not try to disclose “bad news” because they can attain more profit by excluding the cost related to disclosure issue (Beyer et al., 2010).

2.2.2 (Social) psychology theories

Social psychology theories have originally referred to psychology literature (e.g., Rosch, 1975; Schlenker, 1980; Riess et al., 1981 and Tetlock and Manstead, 1985). However, different social psychology theories have been widely used in the accounting and management literature based on the psychology arguments that humans react through reference to the cognitive process. In this thesis, I will explain two social psychology theories that are attributed to the self-serving bias in the corporate reporting:¹ impression management theory and attribution theory.

1. Impression management theory

Impression management is considered in the social psychology literature as “the conscious or unconscious attempt to control images that are real or imagined in social interactions” (Schlenker, 1980, p. 6). Impression management can be defined in corporate reporting as “the process by which people attempt to control the impressions others form of them” (Leary and Kowalski, 1990). Impression management includes “shap[ing] an audience’s impression of a person (e.g., self, friends, enemies), an object (e.g., a business organization, a gift, a consumer product), event (e.g., a transgression, a task performance) or idea (e.g., pro-life versus pro-choice policies, capitalism versus socialism)” (Schlenker, 2006, p.1). In the corporate narrative, prior research considers impression management based on the

¹ This is the focus in Chapter 4.

assumption that corporate narrative disclosures are subjective. This assumption stems from agency theory, which stresses managerial behaviour (Smith and Taffler, 1992; 2000; Abrahamson and Park, 1994; Hooghiemstra, 2000; 2001; Godfrey et al., 2003; Rutherford, 2003; Curtis, 1995; 2004a; 2004b; Aerts, 2005). It has been argued that managers are opportunistic in selecting the style and content of presenting information, which is expected to deliver a positive impression of financial performance and prospects. Thus, impression management in this respect is considered as management practice to obscure and control the users' impression (Clatworthy and Jones, 2001).² Previous studies argue that corporate reporting is used as a vehicle to apply impression management practice, such as disclosing a self-interested information of financial performance (Bettman and Weitz, 1983; Staw et al., 1983; Abrahamson and Park, 1994; Beattie and Jones, 2000; Clatworthy and Jones, 2006; Mather et al., 2000).

Clearly, impression management can be applied in the corporate narrative in order to change the perception of stakeholder for self-serving purposes. For example, when there is bad performance (news), managers may use corporate narratives as a vehicle to strategically manipulate the perceptions and ultimately the decisions of stakeholders (Abrahamson and Amir, 1996; Clatworthy and Jones, 2003; Curtis, 1998). Furthermore, when there is good performance (news), managers may use corporate narratives to attribute this good performance (news) to themselves in order to take credit (Clatworthy and Jones, 2003). The latter case can be also explained by attribution theory, which is discussed below.

2. Attribution theory

Attribution is a strategy derived from social psychology (Heider, 1958; Jones and Davis, 1965; Kelley, 1967). Merkl-Davies and Brennan (2007, p. 126) define attribution as “a self-serving bias involving individuals' perceptions and explanations of events that manifests

² More definitions of impression management are described in Chapter 4.

itself in a tendency to claim more responsibility for successes than for failures”. Forsyth (1980) argues that attribution serve as an explanatory function. For example, people employ cause–effect relationships to explain events; they desire to have some control over others in the society (Forsyth, 1980). In corporate reporting, Bettman and Weitz (1983) is the first research that applied attribution theory despite it being published in *Administrative Science Quarterly*, not in an accounting journal. Attribution theory is related to the self-serving bias; this includes managers’ behaviour in that they explain the positive outcomes by internal factors (i.e., themselves), but negative outcomes are explained by external factors (i.e., those outside the organisation) (Merkl-Davies and Brennan, 2007). In other words, attribution occurs when managers use a defensive tactic that shifts the blame for negative results away from themselves. Aerts (1994; 2001) and Clatworthy and Jones (2003) show that firms are more likely to attribute success to internal than to external factors of the firm. Firms use accounting terminology to explain the negative firms’ outcome, but they use clear cause-effect statements to justify the positive firms’ outcomes (Aerts, 1994). Clatworthy and Jones (2003) clarify that managers engage in self-serving behaviour through attributing the good performance to internal organizational factors and attributing poor performance to external factors. Keusch et al. (2012) show that managers exploit the crisis period and they deeply apply the self-serving bias in the narrative disclosure in the annual reports in crisis situation to provide a best picture about themselves. Consistently, Ressas and Hussainey (2014) document that managers in financial institutions attribute their risky and poor performing (i.e., bad news information) to the financial crisis.

2.3 Tone management

In any organization, managers will disclose different information to outsiders in different ways. This information could be quantitative or qualitative. These two types of managers’ information have been extensively examined in different studies in the accounting literature.

Other studies look at the nature of the information delivered, such as the readability or intelligibility level of the information given. Recently, researchers shed more light on tone management for the information given. Huang et al. (2014, p.1083) define tone management as “the choice of the tone level in qualitative text that is incommensurate with the concurrent quantitative information”. Tone is the word provided in the management’s disclosure, which is mostly used to affect user’s perception (Huang et al., 2014; Davis et al., 2015). As tone management is one of managers’ disclosure types, particularly narrative disclosure, the definitions and further detail related to corporate disclosure are shown in the following section.

2.3.1 Voluntary disclosures and accounting narratives

Prior researchers employ different definitions of corporate disclosure, where disclosure has different views which are inconclusive. Gibbins et al. (1990) define disclosure as the information announcement that is disseminated from firms, formally or informally, as financial or non-financial information, having qualitative or quantitative characteristics; compulsorily or voluntarily. Additionally, Diamond and Verrecchia (1991) describe disclosure as the degree of accuracy of what investors expect about the market value of a firm's share when they follow the information that is released from the firm. In contrast, Hopkins (1996) defines disclosure as the level of understanding the information through investors when they read it. Moreover, disclosure quality has been defined by Singhvi and Desai (1971, p. 131) as “completeness, accuracy and reliability” and by Brown and Hillegeist (2003, p.5) as “the precision, timeliness, and quantity of information provided”. More recently, the definition of disclosure quality has been taken into consideration in Mouselli et al.'s (2012) study. Their definition “refers to the quantity of future-oriented earnings statements in the annual report narrative sections” (Mouselli et al., 2012, p. 3). In addition, Kent and Stewart (2008, p.651) state that “more extensive disclosures are likely to be more

informative than brief disclosures and are, therefore, an indicator of greater transparency”. Similarly, Beretta and Bozzolan (2008, p.335) highlight that “the extent of disclosure (i.e., quantity) is an adequate measure of the quality of disclosure”. Another definition of disclosure, particularly, voluntary disclosure has been shown by Gray and Skogsvik (2004) who clarify that “voluntary disclosure supposedly provides information which goes beyond the requirements inherent in company law and the prevailing accounting standards” (Gray and Skogsvik, 2004, p.793). However, other researchers such as Botosan (2004) draw attention to it being difficult to determine the level of quality and quantity of disclosure. Cooke and Wallace (1989) assure this by their clarification that determining disclosure quality is more subjective. Clearly, the term of disclosure is very complex and ambiguous. This is supported by Debreceeny and Rahman (2005) who argue that disclosure quality has no perfect concept, and by Beretta and Bozzolan (2008, p. 341) who say that it is “impossible to define”. According to Dye (1986) and Evans and Sridhar (2002), voluntary disclosure is also complicated and more ambiguous due to the fact that it is required to make balances between several conflict purposes, for example, reducing litigation risk or preserving the confidential information to prevent using it through competitors who may use it against a firm. Voluntary disclosure can be appear as management forecasts, analysts’ presentations and conference calls, press releases, internet sites and other reports (Healy and Palepu, 2001).

Beyer et al. (2010) review voluntary disclosure studies. In their review, they show that some researchers (Grossman and Hart, 1980; Grossman, 1981; Milgrom, 1981; Milgrom and Roberts, 1986) state that there are some conditions for voluntary disclosure, and firms have to provide full voluntary disclosure in case of the unravelling result if these conditions exist. These conditions are cited in Beyer et al. (2010, p. 300, 301): “(1) disclosures are costless; (2) investors know that firms have, in fact, private information; (3) all investors interpret the firms’ disclosure in the same way and firms know how investors will interpret that

disclosure; (4) managers want to maximize their firms' share prices; (5) firms can credibly disclose their private information; and (6) firms cannot commit ex-ante to a specific disclosure policy".

Managers own information that is not included in financial statements, which can be highly useful to provide better explanation about the current earnings, and predict future earnings and cash flow. Lev (1989) argues that the value-relevant of issuing financial statements alone is missed. Additionally, the International Accounting Standard Board (IASB) states that "if financial statements are not sufficient to meet the objectives of financial reporting, then the IASB should consider requiring the disclosure of other information to help the financial reports meet their objective [...] this will be achieved only if companies provide clear and meaningful information" (IASB, 2005, p. 11). Therefore, it is necessary to provide other types of traditional financial information with a sole focus on the backward-looking of financial disclosure (Lev and Zarowin, 1999; FASB, 2001; ICAEW, 2003; Beattie et al., 2004). In fact, disclosing different types of information may increase the transparency level of a firm (Espinosa et al., 2008). Such additional information to financial statements that can be disclosed in the annual report is narrative disclosure. Hassanein (2015) defines narrative reporting as "stenography for the critical textual and non-financial discussion that is reported alongside financial information. It aims to present a review of the company's operating and financial performance, position and prospects for the future" (p. 26). Beattie et al. (2004) argue that disclosing narrative information is considered as an essential element of corporate reporting process used to reach a high quality in reporting where it provides an opportunity to explain more about qualitative information that is not included in the financial statements e.g., forward-looking information. Furthermore, Merkley (2014) states that managers complete their financial statements by using narrative disclosure and this will provide them the opportunity to deliver textual data for the participants in the capital market. Clearly,

narrative disclosure can assist market participants to make the best decision by linking the gap between quantitative data in the financial statements and the economic reality of firms' performance (Feldman et al., 2010; Merkley, 2014). Li (2010a) assures that by arguing that narrative disclosure increases the understanding level of financial information that exists in the financial statements. Consistently, other previous studies indicate that narrative disclosure can be considered as an important source of information for many users. For example, Lee and Tweedie (1981) state that narrative disclosure is beneficial for investors to make the best decisions for their investment. Arnold and Moizer (1984) show that the annual report's users, particularly financial analysts and institutional investors, are significantly affected by information statements that stems from the narrative sections of the annual reports. Kaplan et al. (1990) also provide empirical evidence that the investors' decisions in the equity investment are considerably affected by the presence and the content of president's letters in the US firms. Another empirical study has been done by Bartlett and Chandler (1997) in the UK, who state that from 17 sections in the annual reports, the most readable section is the chairman's statement and classified by shareholders as the second order of the overall level of importance for the whole annual report sections. Moreover, Clatworthy and Jones (2003) confirm that several complex users (e.g., analysts and institutional investors) rely on narrative disclosure as a fundamental source of information. Additionally, the ASB (2005, para 14 and 2006, para 14) reports that narrative disclosure is helpful for investors to make a reasonable decision; they can use it to analyse the past results and predicting the future performance. Similarly, the IASB (2005, para 41) states that narrative disclosure can be useful for users in terms of interpreting financial statements and enhancing their competence to make the best economic decisions. Furthermore, previous studies have shown that narrative disclosure is useful for professional analysts (Clarkson et al., 1999) and investors use this type of disclosure in the process of pricing the market (Bryan, 1997; Hussainey et al., 2003).

In summary, management voluntary disclosures and accounting narrative enrich and assist the stakeholders' decisions; this can be explained based on economic disclosure theory, which explains that information asymmetry between managers and stakeholders can be reduced through increasing the level of disclosures information (Glosten and Milgram, 1985; Welker, 1995; Verrecchia, 2001).³

Conversely, narrative disclosures can be used for self-serving, obfuscation or manipulation purposes. Obviously, managers can manipulate the amount and the content of narrative disclosure at their discretion. For example, Brown and Tucker (2011) state that there are specific subjects must be covered by MD&A, but at the same time only managers can determine the breadth and depth of information that is disclosed in MD&A, which means that narrative disclosure in nature has a high level of discretion. Therefore, narrative disclosure can be used by managers to mislead investors (Marquardt and Wiedman, 2005). Li (2008) confirms that narrative disclosure can be used by managers to distort the financial outcomes; he shows that the narrative disclosure of the firms that have low performance is less readable and less understandable compared to firms that have a high performance. Using content analysis, Keusch et al. (2012) study the self-serving bias, particularly the attributional behaviour, in the letter to shareholders in annual reports of the most highly-capitalized companies in Europe (Euro 350 index) during the economic crises happened in 2008. They show that a crisis situation leads managers to exploit the adverse external economic conditions. Clearly, Keusch et al. (2012) show that managers extensively use of self-serving bias in the letter to shareholders in the crisis period in order to present themselves in the best possible manner. Similarly, Ressas and Hussainey (2014) document that UK financial institutions use the narrative disclosures in the annual reports to attribute the bad news information to the financial crisis during and after the crisis period. Furthermore, narrative

³ More details of economic theories are discussed in Section 2.2.1.

disclosure is different in terms of the nature of the information, whether good or bad news; the narrative disclosure of bad news is greater in the magnitude but it is less readable compared with good news narrative disclosures (Li, 2008; Asay et al., 2018; Rennekamp, 2012). In addition, previous researchers show that disclosures that are greater in size and that are less readable will have a lower reaction in the market and will be weaker in trading (You and Zhang, 2009; Miller, 2010; Rennekamp, 2012; Tan et al., 2013). Similarly, Schleicher and Walker (2010) argue that analysts' perceptions and, accordingly, the market values are significantly affected by manipulating narrative information, such as forward-looking annual report information.

This behaviour stems from psychology and social psychology discipline, in specific theories of cognitive perception and information inductance (Kahneman and Tversky, 1979; Tversky and Kahneman, 1981). It has been introduced to the accounting literature by Prakash and Rappaport (1977). Beattie (2014) reviews the narrative disclosures studies in this respect and shows several previous studies that employ attribution and impression management theories (away from economic theory) to explain narrative disclosures.⁴ For more details, see Beattie (2014).

In conclusion, although narratives disclosures offer a very rich and complex set of written information and represent a special type of business communications (Rutherford, 2005; 2013), they can be used for self-serving or impression management purposes. Narratives disclosures can be used based on two different streams: economic theory and social psychology theory (impression management or attribution theory).

The focus in this thesis is on management narrative disclosures, in particular tone management. What follows are discussions about the types and measures of tone, and then a review of tone management in the previous studies.

⁴ More details of attribution and impression management theories are discussed in Section 2.2.2.

2.3.2 Tone management types and measures

There are different types and measures of tone that have been used in the literature. In early research (e.g., Hoskin et al., 1986; Francis et al., 1994; Lang and Lundholm, 2000; Francis et al., 2002), the measurement method relied on human coders making self-assessment of information i.e., item by item, which has a high level of judgement and bias. More recently, researchers apply computational linguistics to assess the qualitative information. For example, Li (2010b) and Huang et al. (2013) employ a naïve Bayesian algorithm. Other studies use word lists from psychological dictionaries such as Harvard's General Inquirer (Tetlock, 2007; Tetlock et al., 2008) and Diction (Kothari et al., 2009; Davis et al., 2012). Moreover, other researchers design other word lists which are financial-customised (Henry, 2008; Loughran and McDonald, 2011).

Tone comes from the words of managers. There are different types of managers' tones studied in prior research, which rely on the purpose for which managers use the tone.⁵ What follows are descriptions of the most tone types used in the literature and how it can be measured.

1. Positive/negative tone

This type of tone is mostly used by managers to communicate with users in different information media. It represents words that financially reflect a positive or negative picture of financial performance. Current literature sheds more light on this type of tone, such as: D'Augusta and DeAngelis (2020); Lee and Park (2018); Boudt et al. (2018); Chen et al. (2018); Boudt and Thewissen (2018); Baginski et al. (2016); Huang et al. (2014). It is also known as the optimistic/pessimistic tone. Huang et al. (2014); Davis et al. (2015) argue that "tone management" can be considered as optimistic or positive words juxtaposed against the

⁵ Table 2.2 below reviews previous studies of tone management. It presents many studies focus on different types of tone, and shows different findings which justify that managers employ tone in their disclosure for different purposes.

pessimistic or negative words shown in the management's disclosure that can affect the perception of reader.

1.1 Positive/negative tone measure

The first step needed to measure the tone is the keywords list (dictionary). Four common dictionaries are used in the literature to measure the tone. They are; DICTION (Hart, 2000, 2001), Harvard Psychological Dictionary (IV-4), Henry (2008), and Loughran and McDonald (2011). According to DICTION,⁶ the whole positive words can be obtained by the summation of all words available in the following psychological fields:⁷

["praise" + "satisfaction" + "inspiration"]

The whole negative words can be obtained from DICTION by the summation of all words available in the following psychological fields:⁸

["blame" + "hard- ship" + "denial"]

According to the Harvard Psychological Dictionary, positive and negative words can be obtained by using the General Inquirer software. However, DICTION and Harvard dictionaries are developed for general purposes and are more related to psychology studies rather than business studies (Huang et al., 2014).

Henry (2008) and Loughran and McDonald (2011) develop keywords lists to measure the positive and negative tone, which are more convenient to financial reporting and business environment (Huang et al., 2014).

⁶ DICTION is a software that provide the number of words for a text file for specific psychological fields. It also shows the number of words for a text file under pre-determined keywords list. For more details about DICTION, see DICTION website (<https://www.dictionsoftware.com/>).

⁷ This calculation is cited from Cho et al. (2010).

⁸ This calculation is cited from Cho et al. (2010).

In summary, there are different keywords lists or dictionaries used in the previous literature to measure the positive or negative tone. Table 2.1 below summarises the focus of each wordlist used in the literature.

Table 2.1 Positive or negative tone's keywords lists

Keywords lists used to measure positive or negative tone	The focused field
DICTION (Hart, 2000, 2001)	Psychological fields (more generic)
Harvard Psychological Dictionary (IV-4)	Psychological fields (more generic)
Henry (2008)	Financial reporting fields
Loughran and McDonald (2011)	Financial reporting fields (update Henry (2008))

After identifying the appropriate keywords list, positive or negative tone can be calculated using different formulas. Appendix B, Section 1 explains these formulas.

2. Certainty/uncertainty tone

As applied in the DICTION software, the concept of “certainty” is defined as the language that indicates “resoluteness, inflexibility, completeness, and a tendency to speak ex cathedra” (Hart, 2001, p. 246). Certainty/uncertainty language can be employed when managers have good/bad performance (Jones, 1996; Cho et al., 2010).

2.1 Certainty/uncertainty tone measure

Researchers use different measures of certainty/uncertainty tone. Similar to the positive/negative tone, the keywords list (dictionary) is the first step to measuring it. Previous studies mostly use DICTION to measure certainty tone.⁹ DICTION estimates the certainty

⁹ DICTION software provides a ready-to-use score of certainty.

score as a combination of all words available in specific different fields. Appendix B, Section 2 shows the calculation of certainty tone score based on DICTION.¹⁰

Additionally, Loughran and McDonald (2011) provides keywords list of uncertainty.¹¹ In this case, uncertainty tone can be calculated and it is shown in Appendix B, Section 2.

3. Normal and abnormal tone

Huang et al. (2014) decompose tone into two components: normal and abnormal. A normal tone is the tone that stems from current available information about fundamentals and business environment (i.e., current market and financial performance, growth opportunities, firm operating risk and complexity). However, abnormal tone is the tone that stems from the managerial strategic choice (i.e., management discretion). Recently, Lee and Park (2018) and D’Augusta and DeAngelis (2017) follow Huang et al. (2014) in dividing the management tone. They shed more light on abnormal tone rather than using tone as a whole.¹²

3.1 Normal and abnormal tone measure

Huang et al. (2014) develop a regression model to derive the abnormal tone. It is shown in Appendix B, Section 3. The abnormal tone is the residual from Huang et al.’s (2014) model. The normal tone is the rest of total tone after subtracting the abnormal tone. The calculation of normal tone is described in Appendix B, Section 3.

4. Tone dispersion

Recently, researchers have studied a new type of tone management called “tone dispersion”. Allee and DeAngelis (2015, p. 242) “define tone dispersion as the degree to which tone is

¹⁰ This calculation is cited from Cho et al. (2010).

¹¹ The keywords list of uncertainty is available in Loughran and McDonald’s website (<https://sraf.nd.edu/>).

¹² See Table 2.2 for more details about Lee and Park (2018), D’Augusta and DeAngelis (2017); Huang et al. (2014).

spread evenly throughout a disclosure narrative”. They study the tone dispersion in earnings conference calls.¹³

4.1 Tone dispersion measure

Tone dispersion can be quantified through calculating the level of reduced frequency or the average reduced frequency as suggested by Savický and Hlaváčová (2002). These measures are widely used in linguistic literature. Average reduced frequency is an updated version of reduced frequency which estimates the spread of words level throughout a manuscript (Allee and DeAngelis, 2015). Tone dispersion can be derived according to Allee and DeAngelis (2015) using average reduced frequency for tone (positive or negative words). The calculation steps are shown in Appendix B, Section 4.

Having discussed different types and measures of tone used in the literature, the next section will review the empirical studies of these types of tone.

2.3.3 Empirical studies of tone management

Much of the accounting research addresses different issues related to narrative disclosure. However, few studies examine the tone of language generally in different venues of narrative disclosure, such as earnings press releases (Tama-Sweet, 2010; Gordon et al., 2010; Demers and Vega, 2011; Davis et al. 2012; Davis and Tama-Sweet, 2012; Huang et al., 2014; Boudt et al., 2018), qualitative disclosures made in conjunction with an earnings release (Bonsall et al., 2013), MD&A section of 10-K/10-Q (Li, 2008; Li, 2010b; Feldman et al., 2010; Davis and Tama-Sweet, 2012; Lee and Park, 2018; D’Augusta and DeAngelis, 2020), narratives disclosures in annual reports (Schleicher and Walker, 2010; Iatridis, 2016), corporate environmental disclosures in 10-K annual reports (Cho et al., 2010), corporate sustainability reports (Barkemeyer et al., 2014), CEO letters (Boudt and Thewissen, 2018), news media

¹³ See table 2.2 for more details about their study.

articles (Tetlock, 2007), earnings conference calls (Frankel et al., 2010; Price et al., 2012; Davis et al., 2015; Allee and DeAngelis, 2015), and both corporate filings (10-K/Q) and conference calls (Jiang et al., 2019). What follows is a review of these studies.

1. Tone management and financial performance

Several empirical studies provide evidence that managerial tone is positively associated with financial performance (e.g., Li, 2010b; Frankel et al., 2010; Feldman et al., 2010; Demers and Vega, 2011; Davis and Tama-Sweet, 2012; Davis et al., 2012; Patelli and Pedrini, 2014; Davis et al., 2015; Boudt and Thewissen, 2018; Aly et al., 2018). They suggest that tone is informative about financial performance. In other words, managers use it as signals to provide information about financial performance, which help users to make the best decisions. In particular, Li (2010b) find that current performance is positively related to management tone in forward-looking in MD&A section of corporate filling using the Bayesian learning algorithm to measure tone. He also finds that the average of tone in the same venue has explanatory power in predicting future financial performance. Aly et al. (2018) show that the narrative disclosures of good/bad news in Egyptian annual reports, measured by the manual content analysis, are positively associated with financial performance. Likewise, Patelli and Pedrini (2014) find that an optimistic tone in CEO letters, measured by DICTION wordlists, is congruent with both past and future performance. Feldman et al. (2010) also study tone in the MD&A section of corporate filling. They find a positive association between change in tone and future earnings surprises (i.e., they use standardised unexpected earnings metric based on analyst forecasts to calibrate earnings surprises). Similarly, Davis and Tama-Sweet (2012) find that higher levels of pessimistic tone in the MD&A are associated with lower future performance, measured by return on assets. In line with the above studies, Demers and Vega (2011) find a similar result but they use the unanticipated net optimism tone in quarterly earnings press releases instead of the

tone in MD&A. Davis et al. (2012) also study tone in earnings press releases. They find that net optimistic tone is positively associated with future performance as measured by future return on assets. Consistently, Boudt et al. (2018) confirm that when management tone in earnings press release is informative in reflecting future performance, the level of informativeness increases when a firm performs in a setting featured with a high level of information asymmetry. Huang et al. (2018) also focus on the managerial tone in earnings press releases. They show that firms just meeting or beating earnings benchmarks provide more positive tone in earnings press releases than firms just missing earnings benchmarks. As for earnings conference call, these two studies do not completely cover the association between tone and financial performance. Namely, Frankel et al. (2010), and Davis et al. (2015). Frankel et al. (2010) show that the management tone for firms that just miss the earnings benchmark (i.e., they use the analysts forecast as an earnings benchmark), is more pessimistic than other firms. Davis et al. (2015) mainly focus on the association between managers' tone and managers' characteristics, such as managers' age, education, experiences, involvement in charitable organizations and other characteristics, but in their findings, they provide attention that managers' tone in earnings conference calls reflects current and future performance. However, this finding cannot be generalised, as they do not consider all managers in the earnings conference call. Alternatively, they only consider specific managers, in particular CEOs and CFOs who have worked for at least two firms at the CEO or CFO place for at least 1 year; as their focus is on managers characteristics, they want to disentangle managers characteristics from the underlying factors that are specific to the firm. More recently, Boudt and Thewissen (2018) study tone in CEO letters and document that tone is positively associated with future performance, and they prove that the position of tone in CEO letters significantly outweighs the tone itself in predicting future performance.

In total, the above studies are in line with economics theories, in particular signalling theory in which that tone is incremental and informative about financial performance, and it assists in reducing the level of information asymmetry between managers and users.

Conversely, since managers work “in an environment in which their remuneration and wealth is linked to the financial performance of the companies that employ them, [they] have powerful economic incentives” to conceal their bad performance (Rutherford, 2003, p. 189).

In this context, tone management can be considered more explicitly as self-serving behaviour. Previous researchers confirm this by showing a negative association between tone management and financial performance e.g., Li (2008); Schleicher and Walker (2010); Cho et al. (2010); Huang et al. (2014); Barkemeyer et al. (2014); Guillamon-Saorin et al. (2017). Specifically, Li (2008) shows that firms with less persistent earnings disclose more positive emotion words than negative emotion words in MD&A section of US annual reports. Schleicher and Walker (2010) study management tone in forward-looking narratives in UK firms’ annual reports and report that managers provide more positive than negative tone for firms have bad news about future performance, as measured by decreases in future sales and operating profit margin, in order to change the perception of users. Cho et al. (2010) focus on tone in corporate environmental disclosures in 10-K annual reports and find that firms with poor environmental performance, measured by KLD ratings, disclose a considerably more optimistic tone than firms with strong environmental performance. Similarly, Barkemeyer et al. (2014) study tone in corporate sustainability reports and find that it does not reflect the accurate and accountable information about corporate sustainability performance. Huang et al. (2014) find that abnormal positive tone in earnings press releases is negatively associated with future performance, measured by return on asset. More recently, Guillamon-Saorin et al. (2017) report that firms that have higher non-GAAP adjustments and practise more in impression management through managers’ tone have lower future performance, suggesting

that managers try to manipulate users' perceptions when they have a lower quality of the non-GAAP adjustments in their reporting. Overall, these studies indicate that tone management is used for obfuscation and impression management purposes.

Another study related to this issue is Allee and DeAngelis (2015). They study tone dispersion in earnings conference calls and report that tone dispersion is positively associated with current disaggregated performance (i.e., the components of total firms' performance such as revenues). Moreover, they find a negative association between firms that miss the earnings benchmark (i.e., they use analysts forecast as an earnings benchmark) and tone dispersion. Furthermore, they show that tone dispersion is positively related to future performance, measured by future return on asset. They apply the rhetoric and communication theory (Kintsch and Yarbrough, 1982; Spivey, 1990), and related applications in computational linguistics (Kostoff et al., 1997) to explain their results.

More recently, D'Augusta and DeAngelis (2020) provide evidence that the management tone in the MD&A section of the 10-K files is concave around meeting/missing the earnings figure of analysts' forecast. Clearly, they show that the covariance between managerial tone and earnings performance is positive in cases when the reported earnings miss the analysts' forecasts, but it is negative in cases when earnings meet analysts' forecast. They explain their results by suggesting that managers restrain positive changes in earnings in order to reduce future growth of analysts' forecasts.

In conclusion, the literature shows mixed results about the association between tone management and financial performance using different venues and methods, and this association has been justified based on different theoretical streams, such as economic theories and impression management theory.¹⁴

¹⁴ Chapter 3 also provides a review and discussion about the association between tone and corporate performance.

2. Tone management and capital market reaction (including stock return or price, risk, and cost of capital)

Tone has been studied in various aspects of capital market reaction, such as stock return or price, risk and the cost of capital. These aspects are presented in the following paragraphs.

Tetlock (2007) provides evidence that tone in news media articles is positively related to future stock returns. Similarly, several researchers show that tone affects positively the market reaction, which means that the stock price immediately responds to the earnings announcement, when managers disclose optimism tone in earnings press releases (Demers and Vega, 2011; Davis et al. 2012; Davis and Tama-Sweet, 2012), in MD&A section of corporate filing (Feldman et al., 2010) or in earnings conference calls (Frankel et al., 2010; Price et al., 2012). However, Bonsall et al. (2013) report that the optimistic tone in qualitative disclosures, made in conjunction with an earnings release, is positively related to the market reaction only when the earnings release does not have quantitative earnings guidance. All of the above studies have been done in the US context. Going to the UK context, Wisniewski and Yekini (2015) provide evidence that the frequency of words in annual report narratives of FTSE 350 companies associated with “activity” and “realism” groups in Diction software predict subsequent price increases, even after controlling for a wide range of factors. Yekini et al. (2016) also focus on UK FTSE 350 companies’ annual report narratives. They show that abnormal returns in short windows surrounding financial report disclosure dates is positively associated with the positiveness level in annual reports captured by calculating the number of the positive words listed in Henry's (2008) dictionary divided by the number of total words.

However, Gordon et al. (2010) document that there is a negative association between optimistic tone in last periodic earnings press release prior to the restatement announcement, and market reaction to restatement announcements. Based on this finding, they suggest that

when managers disclose a positive tone prior to the restatement, investors expect that business and its management will have good performance, but in fact managers release the restatement showing a larger negative surprise for investors and even more opposite to their expectations, which will affect negatively the market reaction accordingly. Consistently, Jiang et al. (2019) is a recent study which analyses the aggregate tone in both corporate filings (10-K/Q) and conference call. They show that manager tone is strongly and negatively associated with future stock market returns. They state that manager tone captures mispricing rather than fundamental information. They find that in the period when managers provide a high tone, it is accompanied by high investment growth in the short run (i.e., up to three quarters) but low later investment growth in the long run (e.g., in two years). They indicate that investors may simply follow managers' tone, even though this tone may not reflect the firm's fundamentals. Therefore, high manager tone leads the market to overvalue the firm. However, when the true economic fundamentals are disclosed to the market gradually, the overvaluation strongly reduces and accordingly stock prices will be reversed, which leads to decreased future stock returns (Baker and Wurgler, 2007). Arslan-Ayaydin et al. (2016) show that incentivized managers – those whose wealth is connected with the share price of the firm – disclose aggressively more positive tone in earnings press releases, and investors respond proportionally less to the tone when managers' equity incentives increase. Specifically, they show that “the immediate stock price reaction remains a positive function of the abnormal tone in the earnings press release, but that the marginal price effect of abnormal tone decreases as managers' equity incentives increase” (Arslan-Ayaydin et al., 2016, p. S133).

Tama-Sweet (2010) documents that managers are more likely to increase the level of optimistic tone in the earnings press release when the litigation risk is at a low level prior to occurring options.

Iatridis (2016) shows that cost of equity decreases when managers employ the unexpected pessimistic tone in their narrative disclosure in annual reports.

In this section, having reviewed studies related to the consequences of tone management on the capital market, the next section will review other tone studies shown in the literature.

3. Tone management and corporate governance, firm and managerial characteristics

Iatridis (2016) provides evidence that firms with higher level of pessimistic tone in their annual report tend to have stronger corporate governance. Lee and Park (2018) show that audit committee financial expertise restricts managers in disclosing optimistic tone in the MD&A section of the annual report.

Li (2010b) shows that firms that have a smaller size, lower market-to-book ratio, lower return volatility, less MD&A Fog index and a longer history are more likely to engage in positive tone in the forward-looking statements in MD&A section of the annual report.

Davis and Tama-Sweet (2012) find that the pessimistic tone in the MD&A section is greater than in the earnings press release, particularly when managers have more incentives to use their discretion strategically.

Davis et al. (2015) find that managers' characteristics (e.g., gender, age, educational and career experiences) play an important role in disclosing positive or negative tone in earnings conference call. Specifically, they provide evidence that female managers provide less positive tone than male managers in the call. Moreover, they report that managers who are in early career experiences disclose less positive tone during the call. Additionally, they find that managers considered in charitable organizations speak more positively during the call. Overall, Davis et al. (2015) indicate that managers' characteristics can be considered as determinants of providing upward tone in earnings conference calls, and they suggest that tone in earnings conference calls does not signal a manager's private information in terms of

future performance or management incentives, but it is used to “reflect[...] idiosyncratic, manager-specific tendencies toward optimism or pessimism” (Davis et al., 2015, p. 671).

Having discussed the important previous studies that examine the association between tone management and some aspects, such as corporate performance, market reaction, corporate governance, and firm and managerial characteristics, Table 2.2 below summarises additional studies that address tone management issues.

Table 2.2 Summary of tone management studies

Authors and Year	The aim/objective	Information “sentiment, word, or tone” sources	Sample and Country	Textual Analysis Method	Results
Brochet et al. (2019)	to examine how managers’ ethnic cultural background affects their communication with investors.	Earnings conference call.	57,740 firm-quarters observations for the period (2002 – 2012), 42 different countries	They calculate “Tone” by taking the difference between positive and negative words, and scaling by the sum of positive and negative words. They use Loughran and McDonald (2011) word list.	Managers from a more individualistic background use a more positive tone and more singular. First-person pronouns relative to managers from a collectivist background. The results are specific to the Q&A portion of the conference calls, where individual managers’ cultural roots are more likely to have an effect. In contrast, the cultural effect of inherited individualism is largely absent from the less extemporaneous of management presentation part of the call and, in the case of tone, is even reversed. When analysts and managers share the same ethnicity, the analysts respond more strongly to managers’ tone. This is especially true for collectivist analysts and managers. Also, analysts’ revisions elicit a stronger market response for intra-cultural analysts, especially for the collectivist analyst-manager pairs.
Bochkay et al. (2019)	to examine changes in CEOs’ disclosure styles in quarterly earnings conference calls over their tenure.	Earnings conference call.	5,581 firm-quarters observations for the period (2006-2014), U.S.	Longitudinal research design and nonlinear transformations of CEO tenure (573 CEOs). The number of positive minus the number of negative words from Loughran and McDonald’s (2011) dictionary, scaled	CEOs’ forward-looking disclosures and their disclosures’ relative optimism decline in their tenure. Furthermore, externally hired and inexperienced CEOs are more future-oriented, and younger CEOs exhibit greater optimism in their disclosures. They also find that non-CEO executives’ disclosure styles remain time-invariant over their CEOs’ tenure.

				by the total words spoken by a CEO, is the measure of tone.	
Cazier et al. (2019)	to examine whether the association between qualitative disclosures and subsequent litigation differs between forward-looking statements and non-forward-looking statements.	Earnings announcement press releases filed as attachments to Form 8-K filings	239 firms for the period (2005-2013), U.S.	They calculate “Tone” by taking the difference between positive and negative words, and scaling by total words. They combine word lists developed by Loughran and McDonald (2011) and Henry (2008) to measure tone.	Positive tone in forward-looking qualitative statements is significantly less related to the likelihood of subsequent litigation than is positive tone in non-forward-looking qualitative statements. On average, they fail to find a significant association between qualitative forward-looking statements and subsequent litigation. They do find evidence, however, that positive tone in qualitative forward-looking statements relates positively to subsequent litigation in two U.S. circuits in which court rulings reduced safe harbor protections for forward-looking statements.
Huang et al. (2018)	to examine whether the tone employed in earnings press releases is related to the manager’s choice of the sign and amount of the discretionary earnings reported.	Annual earnings press releases.	22,188 firm-year observations for the period (1998-2007), U.S.	They calculate “Net Positive Tone” by taking the difference between positive and negative words. They use Loughran and McDonald (2011) word list.	Managers of firms with high discretionary accruals tend to use more positive tone in earnings press releases to hype the discretionary accounting numbers that they subsequently report in financial statements to the Securities and Exchange Commission (SEC). Firms just meeting or beating earnings targets disclose more positive tone in earnings press releases than firms just missing earnings targets.
Aly et al. (2018)	to examine to what extent financial performance represents one of the main determinants for tone disclosure in Egyptian annual reports.	Egyptian annual reports.	315 firm-year observations for the period (2011-2013), Egypt.	They use the manual content analysis to measure levels of tone (good/bad news statements) in annual reports.	Egyptian firms disclose more good news than bad news, and the net news disclosure, or net variances, between good/bad is positive. They find a positive association between the narrative disclosure of good/bad news and financial performance. They also find a highly significant association between the auditor, profitability, leverage, firm growth and financial reporting of good/bad news information.

					The results of the ordinary least squares (OLS) regression show that the causality between the two endogenous variables runs from financial performance to tone disclosure. Thus, tone disclosure is determined by financial performance.
Capalbo et al. (2018)	to examine the relation between CEO narcissism and earnings manipulation.	CEOs' answers for analysts' questions in earnings conference calls	4,021 firm-year observations for the period (2007–2013), U.S. (NYSE)	They follow Aktas et al. (2016) and Raskin and Shaw (1988) in measuring CEO narcissism score. The CEO narcissism score is derived by divided the number of the first-person singular pronouns of each CEO (I, me, my, mine, myself) to the number of total first-person pronouns (I, me, my, mine, myself, we, us, our, ours, ourselves) in CEO's answers to analysts' questions.	Evidence that firms that have narcissistic CEOs employ accruals management to increase the performance level. They show that a 1% increase in the score of narcissistic CEOs results in an increase in the discretionary accruals by 2.22%.
Baginski et al. (2018)	to examine whether investors disagree on the valuation implications of linguistic tone and whether small investors are subject to differential, and notably less efficient, trading in response to the linguistic tone in these corporate announcements.	Management earnings forecast	4,046 firm-year observations for the period (1997–2006), U.S.	They calculate TONE by taking the difference between positive and negative words, and scaling by the total number of words. They use Loughran and McDonald's (2011) word list. They measure the residual tone by regressing TONE on a set of variables that proxy for the current and future earnings news conveyed by the	Abnormal trading volume (an established measure of investor disagreement) is increasing in the residual tone of management forecasts after controlling for the price reaction to forecasts. This finding suggests that higher levels of residual tone (i.e., tone that is not explained by the announcement news or the firm's economic fundamentals) generates greater disagreement between traders. Further tests show that the net buying behaviour of small investors is positively associated with residual tone, while larger investors tend to sell on this signal. Specifically, small (large) investor net buying

				management earnings forecast (and any accompanying earnings release), as well as security market variables that capture the firm's expected risk and return.	is significantly positively (negatively) related to residual linguistic tone.
Loughran (2018)	to review and discuss Baginski, Demers, Kausar, and Yu (2018).	Management earnings forecast	-	-	<p>The author offers some concern/suggestion about the measurement of linguistic tone. He claims that positive language coming from company insiders tends to be discounted by all types of investors. Also, if the management team is using negative language to describe future operations, investors are much more likely to take notice. He also notes that in financial disclosures, negative situations can be frequently masked with innocuous positive language. As an extension of Baginski et al.'s (2018) paper, he suggests using only % negative as the starting point in the tabulation of residual tone.</p> <p>The author suggests some issues for future research related to Baginski et al.'s (2018) paper, such as the proper classification of small investor trades, the source of small investor interest in a particular stock, the tabulation of residual tone, and whether insiders intentionally misled investors by the tone of their managerial forecast announcement.</p>
Arslan-Ayaydin et al. (2016)	1- to investigate whether highly incentivized managers – those whose wealth is tied to the firm's share	Quarterly earnings press releases	26,432 firm year-quarter observations for the period (2004–2012), U.S.	The tone is measured through a content analysis in which the tone is defined as the spread between the percentage of positive and negative	<p>The tone of earnings press releases tends to be more positive when the managerial portfolio value is more closely tied to the firm's stock price.</p> <p>The immediate stock price reaction remains a positive function of the abnormal tone in the</p>

	<p>price – inflate the tone of words in earnings press releases.</p> <p>2- to examine how investors react to this incentive for tone inflation by studying the effect of the equity incentives on the impact of abnormal tone on the immediate and delayed stock price reaction following the earnings announcement.</p>			<p>words, relatively to the total number of words. They measure abnormal tone by using Huang et al.'s (2014) model.</p>	<p>earnings press release, but that the marginal price effect of abnormal tone decreases as managers' equity incentives increase. They interpret this result as evidence that investors can (partially) see through the tone inflation in the earnings press release, and therefore discount the information signal in the abnormal tone for the presence of managers' opportunistic motives. They also find that, at high levels of equity incentives for tone inflation, the delayed impact of abnormal tone on the return in the 60-day window starting two days after the announcement, can even become negative.</p>
Brochet et al. (2016)	<p>to examine how language barriers affect the capital market reaction to information disclosures.</p>	<p>Managers' answers to analysts' questions in earnings conference calls.</p>	<p>4,512 firm-year observations for the period (2002–2010), non-U.S. firms</p>	<p>They use non-plain English as a measure of complexity based on the guidelines reported in the Plain English rules of SEC's (1998) which has been used in accounting (Miller 2010) and finance (Loughran and McDonald 2014).</p>	<p>In countries that have higher language barriers, firms are more likely to employ non-plain English and mistaken expressions in their earnings conference calls. Engaging in non-plain English and mistaken expressions is reduced in cases when firm hires an English-speaking manager.</p> <p>Firms that engage more in showing non-plain English and mistaken expression in their calls have less movement in the intraday price and trading volume.</p> <p>In cases where the firm place is situated in a non-English-speaking country and have more analysts English speakers in the call, the capital market responds more negatively to non-plain English and mistaken expressions.</p> <p>The authors also highlight that, when disclosure happens verbally, language barriers between speakers and listeners affect its transparency, which, in turn, impacts the</p>

					market's reaction.
D'Augusta and DeAngelis (2017)	to investigate whether accounting conservatism mitigates upward tone management.	MD&A of the 10-K files.	27,403 firm-year observations for the period (1993-2013), U.S.	They measure abnormal tone by using Huang et al.'s (2014) model.	Upward tone management is negatively associated with several accounting conservatism proxies. Additionally, they hypothesize and find that this association is stronger among firms with managers that have higher incentives to manipulate tone (i.e., firms that are older, more accrual intensive and under stronger pressure to manipulate reported performance). The effect is stronger for backward-looking than forward-looking information.
Lee and Park (2018)	to examine whether financial expertise of audit committees affects the quality of textual information conveyed through the management discussion and analysis section of corporate annual reports.	MD&A of the 10-K files.	24,699 firm-year observations for the period (2001-2012), U.S.	They measure abnormal tone by using Huang et al.'s (2014) model.	Audit committee financial expertise, particularly that which is directly connected to accounting, curtails managerial opportunism in the form of upward management of MD&A tone. The effect of financial expertise is more pronounced when the audit committee is more powerful or when audit committee members face higher litigation risks. This study highlights the importance of audit committee financial expertise in improving the quality of qualitative disclosures.
Boudt et al. (2018)	to investigate the effect of information asymmetry on the informativeness of tone in predicting future firm performance and explaining the investors' reaction.	Earnings press releases.	52,667 firm-year observations for the period (2004-2015), U.S.	Tone is measured by calculating the spread between the number of positive and negative words, relative to the total amount of words in the earnings press release. They use Henry (2008) and Loughran and McDonald (2011) word lists by calculating the average of Tone between them as an overall	The researchers find that firm growth, size, age, complexity and forecast inaccuracy are key drivers of tone informativeness (future firm performance and explaining the investors' reaction). The effect is economically significant since, compared to the reference case of a transparent firm, the slope coefficient of tone doubles or even quadruples in panel data regressions when the firm operates in an environment with high information asymmetry.

				measure.	
D'Augusta and DeAngelis (2020)	to examine whether the relationship between managerial tone and earnings performance depends on the performance of the firm relative to earnings expectations.	MD&A of the 10-K files. They also used the entire 10-K filing, and earnings conference calls as robustness tests.	45,361 firm-year observations for the period (1993-2013), U.S.	They calculate Tone by counting the number of positive and negative words in the MD&A, taking the difference between them, and then scaling it by the sum of positive and negative words. They use Loughran and McDonald's (2011) word list.	The authors provide evidence of "tone concavity" around earnings expectations. Specifically, the covariance between managerial tone and earnings performance is positive when earnings are below expectations, but negative when earnings meet or exceed expectations. They interpret their results through suggesting that managers downplay positive changes in earnings to attenuate future growth expectations. They also find that tone concavity is significantly attenuated by managers' career concerns and accounting conservatism, but unrelated to litigation risk. They indicate that the effect of earnings performance on disclosure tone is complex and reflects managers' incentives to manage expectations.
Chen et al. (2018)	to explore what features of the manager-analyst dialogue during the discussion period of earnings conference calls drive intraday stock prices movements.	Earnings conference calls.	46,435 firm- quarters observations for the period (2002-2013), U.S.	They calculate Tone by taking the difference between positive and negative words, and scaling by the sum of positive and negative words. They use Loughran and McDonald's (2011) word list.	Intraday stock prices react significantly to analyst tone, but not management tone, for the full duration of the discussion in earnings conference call. This effect strengthens when analyst tone is relatively negative. They also present intraday visual evidence that analysts are more neutral than managers over the call and that the tones of both parties drift downward as the call progresses. They also show that analyst tone is more positive when the firm meets the consensus earnings forecast.
Boudt and Thewissen (2018)	to examine the intratextual dynamics of sentiment within chief executive officer letters to shareholders.	CEO Letters.	30 of the largest firms for the period (2001-2012), U.S.	They use the followings: 1- positive sentiment = $(\text{positive words} / \text{total words})$ 2- negative sentiment = $(\text{negative words} / \text{total words})$	Managers tend to present information through positive and negative words in such an order that the reader of the CEO letter has a more positive perception of the underlying message. They also find a significant positive association between this qualitative impression management (tone) and the use of

				<p>words)</p> <p>3- Net sentiment = positive sentiment -negative sentiment</p> <p>They use Loughran and McDonald's (2011) word list as main proxy and use DICTION and Abrahamson and Amir (1996) word lists for comparison purposes.</p>	<p>abnormal accruals in earnings management. They propose sentiment analytics that can compensate for the strategic management of narrative structure and find that the proposed position weighted sentiment has more predictive power for the firm performance over the next year.</p>
Guillamon-Saorin et al. (2017)	to study the market's reaction to the disclosure of non-GAAP earnings measures that are combined with high impression management.	Earnings announcement press releases.	845 firm-year observations for the period (2003-2009), European firms	They perform a manual content analysis to obtain a score for impression management related to the non-GAAP figures. They follow the schema developed by Brennan et al. (2009) and empirically tested by Osma and Guillamón-Saorín (2011).	Non-GAAP disclosures are informative to capital markets. However, non-GAAP adjustments are more persistent when accompanied by higher levels of impression management. This evidence is consistent with managers attempting to distort users' perceptions when non-GAAP adjustments are of lower quality.
Baginski et al. (2016)	to examine whether contemporaneous information in management earnings forecasts serves as a timely alternative to ex post verification.	Management earnings forecasts.	1,764 firm-year observations for the period (1997-2006), U.S.	Tone is measured by calculating the spread between the number of positive and negative words, relative to the total amount of words. They use Loughran and McDonald's (2011) word list.	The authors document that ex post verifiable quantitative news in unbundled forecasts, and the characteristics of the linguistic tone itself, affect investors' pricing of tone. Consistent with higher quality signals enhancing the credibility of contemporaneous lower quality signals, they find that quantitative news verifies the associated linguistic tone; when the two signals have the same sign, the price effect of tone is stronger.

Davis et al. (2015)	to examine whether there is a manager-specific component in the tone of earnings-announcement related conference calls.	Earnings conference calls.	2,098 firm-quarter observations for the period (2002-2009), U.S.	Tone is measured by taken the difference between the positive words and the negative words spoken by the manager, scaled by the total words spoken by the manager. Three different word lists are employed to measure the tone: Diction, Henry (2006, 2008), and Loughran and McDonald (2011).	The tone of conference calls that is not explained by current performance, future performance and strategic incentives has a significant manager-specific characteristics component. They also find that tone is significantly associated with manager-specific factors such as early career experiences and involvement in charitable organisations.
Iatridis (2016)	1- to investigate the association between the proportion of pessimistic language and earnings manipulation and earnings conservatism. 2- to assess the relation between pessimistic language and corporate governance. 3- to examine whether meeting or just beating earnings forecasts is associated with the tone of the reported financial information. 4- to investigate whether pessimism in reported financial	Annual reports.	405 firms for the period (2005-2013), UK-FTSE All	Tone is the tone change of the proportion of total pessimistic language in the annual report relative to total words. [The tone change = Positive or negative tone - (The average of positive or negative tone in the previous three years / the standard deviation of positive or negative tone in the same period)] as in Feldman et al. (2010); Tetlock et al. (2008); Tetlock (2007). Two different lists of positive and negative words are used i.e., Harvard's General Inquirer and Loughran and McDonald (2011).	The proportion of total pessimistic language is higher for companies with lower accruals earnings management and higher leverage. In contrast, high growth companies display less pessimism. Companies with higher levels of pessimism tend to display higher conservatism even if they experience bad news or low cash flows. Companies that use pessimistic language tend to display stronger corporate governance. The use of pessimistic language is positively associated with forecast accuracy and analyst coverage. Annual reports tend to be more pessimistic in order to guide analysts downward and reach the earnings target. Companies that meet or just beat analysts' forecasts tend to use less pessimistic language. However, they are likely to use pessimistic language in order to reduce the magnitude of a negative market reaction to underperformance. He also shows that the change of the reporting tone to pessimistic, as well as the use of

	information is intended to guide analysts downward and meet target earnings. 5- to examine how the change in the reporting language might affect the cost of equity.				unexpected pessimistic language, reduces the cost of equity.
Blau et al. (2015)	to test whether sophisticated investors interpret earnings conference call tone differently than investors at large by examining short selling activity and its relation to earnings conference call tone.	Earnings conference call.	1,318 firm-quarter observations for the period (2005-2006), U.S.	Tone is measured by using the ratio of (positive – negative)/(positive + negative) based on Loughran and McDonald's (2011) word list. They use abnormal tone. It is calculated by taking the difference in tone between the two sections; specifically, Tone in presentation section minus Tone in Q&A section.	Short sellers target firms with simultaneous high earnings surprise and abnormally high management tone. The combination of positive earnings surprise and unusually positive tone strengthens short sellers' return predictability. This result indicates that short sellers interpret revealed "inflated" call language by managers more completely than naïve investors.
Allee and DeAngelis (2015)	to examine tone dispersion, or the degree to which tone words are spread evenly within a narrative, to evaluate whether narrative structure provides insight into managers' voluntary disclosures and users' responses to those disclosures.	Conference call transcripts.	33,428 firm-quarter observations for the period (2004-2014), U.S.	Tone dispersion: They use Loughran and McDonald's (2011) word list to measure positive and negative words. They use average reduced frequency (ARF) (Savický and Hlaváčová, 2002), to quantify tone dispersion.	Tone dispersion is associated with current aggregate and disaggregated performance and future performance, managers' financial reporting decisions, and managers' incentives and actions to manage perceptions. They also find that tone dispersion is associated with analysts' and investors' responses to conference call narratives.

Brockman et al. (2015)	to answer the following three questions: First, do linguistic tones differ significantly between managers and analysts during the discussion sessions of earnings conference calls? Second, do investors react differently to manager tones than to analyst tones, and specifically, whose tone has more value relevance for pricing purposes? Third, are there differences in investors' ability to extract value-relevant information from linguistic tones? That is, do sophisticated (institutional) investors have a comparative advantage over naive (individual) investors in processing the subtle signals of linguistic tone relative to the nonsubtle signals of earnings numbers?	Earnings conference call.	2,880 firm-quarter observations for the period (2004-2007), U.S.	<p>Tone is mainly measured by using the ratio of (positive – negative)/(positive + negative) based on Loughran and McDonald's (2011) word list.</p> <p>They re-estimated all the empirical analyses using the Harvard word lists and found that the results are robust to dictionary choice. They also used Diction 6.0 and the General Inquirer content analysis packages and found that their analysis is robust to different word recognition platforms.</p>	Manager tones convey much more optimism (less pessimism) than their analyst counterparts and that investors (particularly institutional investors) react more strongly to analyst tones than to manager tones.
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Ressas and Hussainey (2014)	to examine the impact of financial crisis on financial reporting of good news and bad news in the UK annual report narrative sections.	The chairman statement in the UK annual reports	Financial institutions in FTSE 100 index, 110 firm-year observations for the period (2006-2010), UK.	Manual content analysis approach.	UK financial companies disclose more good news information than bad news information. They also find that the crisis affects the financial reporting of good news and bad news. These results suggest that after controlling for other firm characteristics and corporate governance mechanisms, UK financial companies disclose more bad news information during and after the crisis period, while they disclose less good news during these periods. They suggest that risky and poor performing financial institutions provide more negative tone during the crisis.
Barkemeyer et al. (2014)	to examine whether corporate sustainability reports can serve as accurate and fair representations of corporate sustainability performance.	CEO statements in corporate sustainability reports and corporate financial reports.	The number of observations is not shown in the paper. The number reports used is different in deferent tests. The sample period is (2001-2010), different countries (including UK, US, some Europe, and other countries)	Psycho-social dictionaries (DICTION (Hart, 2000); and General inquirer (GI) (Stone et al., 1966)) In order to make these absolute scores comparable across different sectors and dimensions, all numeric results have been converted into Z-scores. Namely, for each sector and dimension, the difference between the mean score and each individual score in the group, divided by the standard deviation, has been used has the final measure for each document. Optimism = Positive – Negative	The rhetoric in the CEO statements of sustainability reports is indicative of impression management rather than accountability, despite increasing standardisation of sustainability reporting.

Davis and Tama-Sweet (2012)	to examine managers' use of language in narrative disclosures across two disclosure outlets — earnings press releases and Management's Discussion and Analysis.	Earnings press release and the MD&A section of the 10-Q or 10-K filing.	11,826 firm-quarter observations for the period (1998-2003), U.S.	<p>Pessimistic tone = pessimistic words / total words</p> <p>Optimistic words = optimistic words / total words</p> <p>Word list from DICTION 5.0(Hart 2000, 2001) as the main measure.</p> <p>Alternative measures: Loughran and McDonald (2011) and Henry (2006).</p>	<p>They document the following results:</p> <p>1- Firms exhibit significantly lower levels of pessimistic language and significantly higher levels of optimistic language in earnings press releases relative to MD&A disclosures.</p> <p>2- Managers of firms that exactly meet or just beat analysts' expectations in the current quarter and managers of high growth firms report a lower proportion of total pessimistic language in their earnings press releases.</p> <p>3- They also find evidence consistent with managers of firms that habitually meet or just beat analysts' forecasts reporting a lower proportion of pessimistic language in their earnings press release.</p> <p>4- higher levels of pessimistic language in the MD&A are associated with lower future return on assets, controlling for pessimistic language in the corresponding earnings press release.</p>
Davis et al. (2012)	to examine whether managers use language throughout an earnings press release to signal, both directly and more subtly, their expectations about future performance.	Earnings press releases.	23,017 firm-quarter observations for the period (1998-2003), U.S.	<p>Net optimistic tone = the difference between the percentage of optimistic words and the percentage of pessimistic words.</p> <p>Diction (Hart, 2000; 2001) words list is used.</p>	Net optimistic language in earnings press releases is positively associated with future return on assets (ROA) and generates a market response.
Li (2010b)	to analyze the information content of forward-looking statements in the Management's Discussion and Analysis section of	The forward-looking statements (FLS) in MD&A of 10-Q and	30,000 sentences for the period (1994-2007), U.S.	<p>The main measure used is the Naïve Bayesian algorithm tone measure.</p> <p>FLS are manually classified into one of four tones: positive, neutral, negative and uncertainty.</p>	<p>Firms with better current performance, lower accruals, smaller size, lower market-to-book ratio, less return volatility, lower MD&A Fog index, and longer history tend to have more positive FLSs.</p> <p>The average tone of the FLS is positively associated with future earnings, even after</p>

	10-K and 10-Q filings. Specifically, he explores variations in the tone and study their economic determinants.	10-K filings.		He also used three common dictionaries (Diction, General Inquirer, and the Linguistic Inquiry and Word Count), but results do not support his predictions when these dictionaries are applied.	controlling for other determinants of future performance.
Frankel et al. (2010)	to study whether a penny of earnings per share has more significant investor-relations effects when it makes the difference between meeting and missing analyst expectations by comparing changes in earnings conference call characteristics that occur as the earnings realization varies by a few cents around the consensus analyst expectation. These characteristics include call length, call tone, and issuance of management-earnings guidance around the conference call.	Conference calls.	20,511 firm-quarter observations for the period (2001-2005), U.S.	Tone is the difference between the number of positive and negative words spoken during the conference call, scaled by the total number of words spoken during the conference call (Davis et al. 2007; Tetlock et al. 2008). They apply the Harvard-IV psychosocial dictionary word classifications to derive positive and negative words using a textual analysis program called the General Inquirer.	Reduction in conference call length between firms just missing expectations and firms meeting expectations is significantly larger than the difference in surrounding earnings surprise intervals. In other words, they find an asymmetric increase (decrease) in call length (forecasting propensity) for firms that miss analyst expectations by 1 cent compared with changes in adjacent 1-cent intervals. The authors also find that call tone improves as firm performance improves relative to analyst expectations. However, they find no statistically significant evidence that call tone is asymmetrically more negative for firms that miss expectations by a penny. They also find that firms missing earnings expectations are less likely to issue earnings guidance around the conference call.

Cho et al. (2010)	to investigate whether there are self-serving biases present in the language and verbal tone used in corporations' environmental disclosures.	Corporate environmental disclosures contained in 10-K annual reports.	190 firms - cross-sectional sample for the year 2002, U.S.	Optimism Tone and Certainty Tone. DICTION is used to obtain the tone. “optimism” is: [“praise” + “satisfaction” + “inspiration”]–[“blame” + “hard- ship” + “denial”] “certainty” is: [“tenacity” + “level- ing” + “collectives” + “insistence”]–[“numerical terms” + “ambiva- lence” + “self-reference” + “variety”]	Disclosures of worse environmental performers exhibit significantly more “optimism” and less “certainty” than their better-performing counterparts.
Schleicher and Walker (2010)	to examine whether, when and how managers bias the tone of forward-looking narratives.	Forward-looking narratives in annual reports.	The total number of firm-year observations is 502, but it varies in different tests. The sample period is (1996-2002), UK	They measure tone by employing techniques of manual content analysis and aggregate positive, neutral and negative statements into an overall measure of tone.	Firms with large impending performance declines will bias the tone in the outlook section upwards. Moreover, they find that loss firms, risky firms and firms with an analyst earnings forecast provide a more positive tone, while firms with an earnings decline provide a more negative tone. Finally, they observe that for a majority of their managerial incentive variables the main vehicle for biasing the tone is to change the number of negative statements, not the number of positive statements. Overall, the findings are difficult to reconcile with predictions from signalling models, but they are consistent with the alternative view of impression management.

Schleicher (2012)	to re-examine the positive forward-looking statements examined by Schleicher and Walker (2010) and compare, across firms with improving and deteriorating financial performance (good- and bad-news), the managerial choices made in relation to eight forecast attributes.	Forward-looking narratives in annual reports.	The total number of firm-year observations is 502 (181 good-news firms and 321 bad-news firms) for the period (1996-2002), UK.	Manual content analysis	<p>There are significant differences in the characteristics of good- and bad-news firms' positive statements. In particular, good-news Firms' positive forward-looking statements relate more frequently to sales, involve more comparisons against last year's results, relate more frequently to specific short-term horizons, and make more use of quantitative information and reinforcing qualifiers. On the other hand, bad-news firms' positive statements refer more often to individual segments, are more frequently conditioned on other occurrences, and refer more frequently to aims and objectives.</p> <p>The identified differences in good- and bad-news firms' positive statements can be exploited for classification purposes: including into a classification model additional regressors that measure a positive forward-looking statement's level of selectivity and vagueness significantly increases the model's ability to separate firms with improving financial performance from firms with deteriorating financial performance.</p>
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2.4 Earnings management

In particular, following the Enron and WorldCom scandals, earnings management became a controversial issue in corporate reporting. Accordingly, the prior literature has shed more light on several issues related to earnings management, such as the definitions, motivations, and types and measures of earnings management. The literature also shows various and enormous studies of the association between earnings management and different aspects of financial reporting.

Ronen and Yaari (2008) summarise and classify the definitions of earnings management suggested in the literature into three categories, which are as follows:¹⁵

- Beneficial and white earnings management: this category consists of the definitions of earnings management suggested by Ronen and Sadan (1981); Demski et al. (1984); Suh (1990); Demski (1998); Beneish (2001); Sankar and Subramanyam (2001). They argue that earnings management “.... is taking advantage of the flexibility in the choice of accounting treatment to signal the manager’s private information on future cash flow” (Ronen and Yaari, 2008, p.25).
- Neutral and grey earnings management: this category includes the definitions of earnings management suggested by Fields et al. (2001) and Scott (2003). They state that earnings management “.... is choosing an accounting treatment that is either opportunistic (maximizing the utility of management only) or economically efficient” (Ronen and Yaari, 2008, p.25).
- Pernicious and black earnings management: definitions that are developed by Schipper (1989); Levitt (1998); Healy and Wahlen (1999); Tzur and Yaari (1999); Chtourou et al. (2001); Miller and Bahnson (2002) are considered under this category.

¹⁵ More definitions of earnings management are described in Chapter 4.

They argue that earnings management “.... is the practice of using tricks to misrepresent or reduce transparency of the financial reports” (Ronen and Yaari, 2008, p.25).

When the definition of earnings management is being discussed, a further important subject to examine is earnings quality. Earnings quality is significantly related to earnings management. Healy and Wahlen (1999) argue that earnings management plays a major role in the quality of reporting earnings. However, the absence of earnings management does not warrant that earnings quality will be at high level because there are other factors that affect earnings quality; generally, firms that have a high level of earnings management have a low quality in their earnings (Lo, 2008). Consequently, earnings quality should be taken into account to cover earnings management definition. Earnings quality has been extensively defined in the prior literature. However, there is no single definition for “earnings quality” because earnings quality definition relies on the nature of the context (Li, 2011). Such definitions of earnings quality specify that a greater earnings quality means that earnings are more persistent and more regular (Kormendi and Lipe, 1987). Bernard and Stober (1989, p. 628) argue that “[t]o the extent that the ‘quality of earnings’ depends on the proportion of earnings derived from recurring sources, the quality of earnings argument is related to Lipe’s (1986) demonstration that the reaction to earnings components depends on their ‘persistence’, or on the strength of the relationship between a shock in a given earnings component and future values of the same and other earnings components”. Similarly, other researchers state that earnings quality will be high when the reporting of earnings is closer to the “permanent earnings” (Black, 1980; Beaver, 1998; Ohlson and Zhang, 1998). Another definition of earnings quality has been shown by Francis et al., (2008) who state that earnings quality means the existence of accuracy in earnings' signal that stems from the financial reporting system of the firm. Furthermore, Dechow et al. (2010, p. 344) state that “[h]igher quality

earnings provide more information about the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker”.

Omonuk (2007) claims that managers can obtain some of the reporting incentives by changing revenues and expenses from one reporting period to another. More specifically, they employ their discretion by managing earnings opportunistically, which results in achieving their personal interest (Jiraporn et al, 2008). Furthermore, Veenman et al. (2011) provide another motivation for engaging in earnings management, which is increasing managers' stock options.

2.4.1 Early formations of earnings management

Earnings management has been examined extensively in the previous literature. It has been used increasingly from the 1980s to now. For example, Healy (1985) argues that managers use earnings management to obtain special benefits, such as compensation and bonuses. Similarly, DeAngelo (1988) reports that managers engage in earnings management by using their discretion to reflect a good perception of their performance in order to stay longer in their positions and, accordingly, obtain larger bonuses. In contrast, other studies (e.g., DeFond and Jiambalvo, 1994; Sweeney, 1994; Dichev and Skinner, 2002) state that managers are interested in managing earnings to keep away from the disruption of a debt covenant. Healy (1985) also states that managers manage earnings by using different accrual strategies related to their incentives based on their earnings. Other previous researchers, such as DeAngelo (1986,1988); McNichols and Wilson (1989); Liberty and Zimmerman (1986); Moses (1987); Elliot and Shaw (1989) uphold this issue. They assure that discretionary accruals and accounting changes are usually used by managers to manipulate their earnings. Additionally, earnings management is also studied in many theoretical papers. For example, Lambert (1984) applies an “agency model” to assure that there is an incentive for managers who are risk-averse to smooth the economic earnings because it is in their interests to do so.

Trueman and Titman (1989) explain that managers smooth the reported earnings to reduce the market's assessment of fluctuation in earnings. Hughes and Schwartz (1989) study the implementation of inventory accounting policies by using informational asymmetry between insiders (managers) and outsiders (investors). They show that firms that employ FIFO instead of LIFO in their inventory accounting policy view high quality in their reporting, despite the fact that LIFO reduces the tax expense. Moyer (1990) studies commercial banks in the United States of America (USA) and shows that managers reduce their regulatory costs by managing the reported earnings. Baber et al. (1991) claim that managers can achieve their incentives by decreasing/increasing the expenses of research and development (R&D), which in turn affects financial statements. Bange and De Bondt (1998) suggest that managers can change earnings through changing the R&D cost in order to achieve different outcomes, such as increasing the level of free cash flow or reducing the taxable income number to reduce the tax amount. Additionally, they show that managers who have a high proportion of firms' shares are less likely to engage in earnings management.

Other theoretical pieces of research, such as Dye (1988), Stein (1989), Verrecchia (1986) and Lambert (1984), argue that managers usually smooth earnings due to smooth their compensation. In contrast, Trueman and Titman (1989) state that the reason of why managers smooth earnings is to reflect a good perception to investor where they will believe that the firm has a small amount of risk.

Finally, other studies suggest that earnings management is informational value. For example, Holthausen (1981) argues that firms manage earnings to enhance the disclosed information when earnings are published, which benefits users by providing them with information. Arya et al. (2003) indicate that the trend and level of earnings can deliver information to information's users, which assists managers in achieving their incentives.

2.4.2 Earnings management types and measures

Two main types of earnings management have been examined in previous studies: accruals earnings management and real earnings management. Below are explanations of each type of earnings management and how it can be measured based on the previous literature.

1. Accruals Earnings Management (AEM)

Pervious research on earnings management, historically, has been more focused on AEM than other types of earnings management. Accrual has been defined in many of previous literature. AEM has been employed by managers to reflect a good perception of reported performance by using discretion and judgment related to accounting choices. More specifically, AEM mislead the operating performance; however, it does not change the operation actions themselves (Roychowdhury, 2006). Dechow et al. (2010) define accruals as one of the components of earnings. Moreover, accruals quality can be defined as the magnitude of accruals that can be derived by applying regression to the differences in non-cash of working capital on variations of economic conditions in a firm (Mouselli et al., 2012; Dechow et al., 1995; Beneish, 1998). Dechow and Dichev (2002) define accruals quality as the extent of accrual earnings which can be explained into cash flows. Additionally, Dechow (1994) states that, regarding the accrual principle, reported earnings is more informative in respect of economic value for users than cash flow principle where reported earnings is smoother than cash flow. Dechow and Skinner (2000) put forward this point, arguing that the main objective of accrual in accounting is to assist firm's users in evaluation process of the firm's economic value. Accrual can be divided into non-discretionary (i.e., “normal”) and discretionary (i.e., “abnormal”) (see Dechow et al., 2010). Dechow et al. (2010) clarify that discretionary accruals capture manipulations that are made by implementing the accounting policies (i.e., earnings management), whereas non-discretionary or normal accruals capture

changes that assist in providing a perception of economic performance. However, discretionary accrual has been used in a vast body of literature to capture the level of earnings management; the benefits and drawbacks of this type of accrual have been discussed by Guay et al. (1996), Young (1999), Thomas and Zhang (2000), Fields et al. (2001), Lo (2008), Dechow et al. (2010) and DeFond (2010). Having discussed the accrual type of earnings management, the next section will look at how this type can be measured.

1.1 Accrual earnings management measures

In this type of earnings management, discretionary accrual is commonly used to measure earnings management. A number of different proxies are used in prior studies to measure discretionary accrual (i.e., earnings management). However, most of the discretionary accruals measures used in previous research lack power and are mis-specified (Dechow et al., 2012). The first measure of discretionary accruals measures is proposed by Healy (1985). Healy utilises working capital accruals to measure discretionary accruals. Interestingly, Healy employs working capital accruals as discretionary accruals proxy without including any determinant of non-discretionary accruals. Despite the simplicity of this measure, it has a fundamental limitation. The limitation is that Healy assumes that the level of non-discretionary accrual is constant, while, in fact, it is expected to be changed depending on the underlying business activities of the firms (Kaplan, 1985; McNichols, 2000).

In early research, such as by Healy (1985), depreciation and amortization expenses were subtracted from working capital accruals. However, in subsequent research, these adjustments have often been eliminated altogether, because these expenses are related to the capital expenditure, which is under long-term accruals classification and not working capital accruals (Allen et al., 2013).¹⁶

¹⁶ The discretionary accruals calculation based on Healy (1985) is shown in Appendix A, Section 1.

The main issue with Healy's (1985) model is the absence of determinants of non-discretionary accruals, which means that the model is mis-specified (Dechow et al., 2012).

Proposed solutions to this issue come from other researchers that use the non-discretionary accruals models and adding the omitted variables to the models. These models are Jones (1991), Dechow, et al. (1995), Dechow and Dichev (2002) and McNichols (2002). They decompose accruals into discretionary and non-discretionary components. They are more sophisticated than Healy (1985).¹⁷

Specifically, Jones (1991) takes into consideration two determinants of non-discretionary accruals, which are the change in revenues and the level of gross property, plant and equipment.

Dechow et al. (1995) provide the first assessment of the power and specification of discretionary accrual models. They state that all discretionary accrual models at that time lacked power of plausible magnitudes for testing earnings management; because they have poor ability to separate discretionary accrual from total accrual. They also argue that these models are mis-specified due to the existence of correlated omitted variables, if the samples used include firms have extreme financial performance. McNichols (2000) confirm the mis-specification of discretionary models by showing that these models will be mis-specified when firms included in the sample have long-term earnings growth with extreme forecasts.

Dechow et al. (1995) have developed the model of non-discretionary accruals, which have become commonly known as the Modified Jones model, by making a few improvements on Jones' (1991) model.

¹⁷ The discretionary accruals calculation based on each one of these models (Jones, 1991; Dechow et al. 1995; Dechow and Dichev, 2002; McNichols, 2002)) is shown in Appendix A, Sections 2, 3, 4 and 5, respectively.

Dechow et al. (1995) critique the original Jones (1991) model by arguing that it will be weak when firms change revenues through misreporting the net accounts receivable. Specifically, they improve the Jones (1991) model by using cash revenue instead of reported revenue.

Following these models, Dechow and Dichev (2002) propose an alternative model to identify discretionary accrual. They notice that if the aim of using accruals is to achieve a target level of underlying cash flows, then non-discretionary accruals are expected to be positively correlated with nearby cash flows and negatively correlated with concurrent cash flows. Consequently, they include previous, current and future cash flows in the non-discretionary accruals model. Although their model has some improvements, it is questioned by Wysocki (2009). Wysocki argues that considering contemporary cash flows will lead to the misclassifying of some of discretionary accruals, in particular those that are intended to be used for smoothing earnings purposes, which will be classified as non-discretionary accruals.

Following on from Dechow and Dichev's model, McNichols (2002) suggests another model which combines the determinants of non-discretionary accruals that exist both in the original Jones model and the Dechow and Dichev model. Dechow et al. (2012) state that the McNichols (2002) model can be classified as the best specified model among other accrual models, because it includes more determinants (i.e., explanatory variables).

Researchers were concerned about the failure of non-discretionary accruals to capture the whole non-discretionary accruals level, which made them support these models by considering the performance-matching procedures. Kothari et al. (2005) have developed a performance matching procedures model to detect discretionary accruals, which "entails subtracting estimates of discretionary accruals from Jones-type models using control firms matched by industry and ROA in either the current or the previous period" (Dechow et al., 2012, p. 281). Clearly, Kothari et al.'s (2005) model extends the modified Jones model

(Dechow et al., 1995) by controlling for operating performance to measure the discretionary accruals.¹⁸

Even though this model mitigates the misspecification issue, it results in a decrease in the test power, and the model can be made to work efficiently only in cases where the matching procedure occupies the important omitted variables (Dechow et al., 2012).

Dechow et al. (2012) argue that all non-discretionary accruals models, which are discussed above, have limitations. One limitation mentioned in their paper is that these models are mis-specified due to the omitted variables. Another limitation is that they lack power, due to the weakness in segregating discretionary accruals from total accruals (Dechow et al., 2012). To avoid these limitations, Dechow et al. (2012) develop a model that includes the reversal of accruals. Their model is based on the assumption that “any accruals-based earnings management in one period must reverse in another period” (p.276). However, this model cannot always be applied, because the periods of time in which discretionary accruals occur and reverse are unknown. Gerakos (2012) supports this point, critiquing the approach of Dechow et al. (2012) here. Gerakos (2012) states that their approach is only “useful when working with samples of firms with ‘known’ manipulation, such as firms subject to SEC Accounting and Auditing Enforcement Releases (AAERs)” (p. 337).

In summary, measuring earnings management through discretionary accruals has been developed differently on several occasions. Table 2.3 below describes a summary of each non-discretionary accruals model that derives the discretionary accruals.¹⁹

Table 2.3 Summary of the non-discretionary accruals’ models

Name of non-discretionary accruals model	Components of non-discretionary accruals model
Healy (1985)	All non-cash working capital accruals

¹⁸ The discretionary accruals calculation based on Kothari et al. (2005) is described in Appendix A, Section 6.

¹⁹ Discretionary accruals is the residuals from the regression applied in any of the non-discretionary accruals model described in Appendix A.

Jones (1991)	Change in revenues and gross property, plant and equipment
Dechow et al. (1995)	Change in cash revenues and gross property, plant and equipment
Dechow and Dichev (2002)	Previous, current and future cash flows
McNichols (2002)	Change in revenues, gross property, plant and equipment, and previous, current and future cash flows
Kothari et al. (2005)	Change in cash revenues, gross property, plant and equipment and operating performance

In addition to the non-discretionary accruals' models, there is another accrual model proposed by DeFond and Park (2001) to detect earnings management, which is commonly referred to abnormal working capital accruals (AWCA). This model has an advantage in that it is simple and can be applied to large samples.²⁰

As stated earlier, earnings management is associated with earning quality. It is important to mention here that earnings quality can be measured using the same measures of earning management, which rely on using the properties of accounting numbers to capture the level of earnings quality. Such measures include the level of accrual to derive earnings quality (Sloan, 1996), the amount of estimation error in the accruals model (Dechow and Dichev, 2002) and the fluctuations in earnings (Dichev and Tang, 2009).

2. Real Earnings Management (REM)

Recent studies move from standard approach of earnings management (AEM), which supposes that cash flow transactions do not have any influence on accruals policies, to REM. The latter is affected by cash flow transactions to alter the economic decisions which will help managers to attain the reported financial target.²¹ Moreover, REM comes from normal

²⁰ The abnormal working capital accruals calculation based on DeFond and Park (2001) is described in Appendix A, Section 7.

²¹ See Xu et al. (2007) for further review.

operations with a view to deceiving financial users or stakeholders into think that the financial target has been achieved in the normal operation (Roychowdhury, 2006).

Fischer and Verrecchia (2000) state that Schipper (1989) is one of the first researchers to include REM in a definition of earnings management. Schipper defines earnings management as “a purposeful intervention in the external financial reporting process, with the intention of obtaining some private gain....”. She then defines REM by stating that "... a minor extension of this definition would encompass ‘real’ earnings management, accomplished by timing investment or financing decision to alter reported earnings or some subset of it”. Fischer and Verrecchia state that REM occurs when managers undertake actions that diverge from good practice to increase reported earnings (Fischer and Verrecchia, 2000). They list several examples, such as cutting prices towards the end of the year in an effort to accelerate sales from the next fiscal year into the current year, delaying desirable investment, and selling fixed assets to affect gains and losses, all in an effort to boost current period earnings. Moreover, Cohen et al. (2008) state that there are three manipulation methods classified as REM. These are: (1) Increasing sales volume by offering discounts or by making credit terms more lenient. (2) Increasing production to report a lower cost of goods sold per unit. (3) Decreasing discretionary expenses (e.g., advertising, Research and Development (R&D), and Selling, General and, Administrative (SG&A) expenses). Other researchers (e.g., Graham et al., 2005; Roychowdhury, 2006) assure that REM can occur in a variety forms, whether by reducing investment in R&D or decreasing advertising expense and employee training cost to meet short-term purposes. Additionally, REM usually can be found at the core of marketing strategies, tactics and budgets (Moorman et al., 2012; Chapman and Steenburgh, 2011).

Real earnings management has recently been more interested in accounting research in terms of relevance and in understanding the way managers use real manipulation activities in their reporting. Kothari et al. (2016) have found a relevant issue regarding real earnings

management, which provide an attention to focus more on this type of manipulation rather than accrual. They state that although real manipulation has a high cost in the long term, managers are more likely to use it during the time of seasoned equity offering (SEO). A recent empirical study on the Spanish equity market examines the relationship between real earnings management and information asymmetry (Abad et al., 2018). The authors show that managers' strategies that contribute to increasing real manipulation are related to the increase in the level of information asymmetry, specifically in companies that have attained their earnings during the previous year. They also show that, by using real earnings management, managers can distort the market, which encourages them to increase the insider information production. Consequently, the level of information asymmetry in the market will increase considerably.

Real earnings management through discretionary expenditures has been thoroughly studied in the academic literature. Managers are more likely to manipulate discretionary expenditures (i.e., R&D, advertising and SG&A) in order to realize earnings management purposes. Xu et al. (2007, p. 209) mention some examples of these purposes, "such as, avoiding losses, maintaining an increasing trend of earnings, meeting analyst earnings forecasts, and smoothing earnings". The main reason why managers tend to achieve their goals by using discretionary expenditures is that these expenditures are reported directly as expenses under the accounting standards, which means that they will not be capitalized (Xu et al., 2007). As mentioned earlier, Baber et al. (1991) use a sample of industrial sector in the US. They show that managers are motivated to minimize R&D expenses in order to show the reporting earnings in a positive way and to maintain the consistency in increasing earnings. They also state that a decrease in R&D expenses is not attributed to changes in all levels of investment opportunities. Perry and Grinaker (1994) find that the unexpected spending of R&D is positively related to earnings that are unexpected with monitoring on investment choices and

financial circumstances. They argue that managers change the R&D expenses to attain the analysts' forecast level and these changes may occur in a large amount in the fourth quarter of the financial year. Similar to Perry and Grinaker (1994), Bange and De Bondt (1998), who use US firms to examine the R&D budgets, show that firms manipulate their R&D budgets to smooth their earnings, which will lead to minimising the difference between the forecasts of analyst earnings and reported earnings. Dechow and Sloan (1991) show further evidence regarding the manipulation in R&D expenditures. Their findings show that CEOs, who are relying on their earnings to realise their incentives and obtain greater compensation, are more likely to mitigate the R&D expenses, which will increase earnings particularly in the end time of their service. They control for the performance of the firm and investments in capital in their model. The results, after controlling for these two variables, stay the same. Dechow and Sloan (1991)'s findings suggest that managers' incentives are based on reported earnings, which motivates them to decrease the discretionary expenses in order to increase the reported earnings. Gunny (2005) draws attention to other expenses that are used by managers to distort earnings, which include selling general and administrative expenses (SGA) where managers reduce them to maximise their current reported earnings. Roychowdhury (2006) identify discretionary expenditures as R&D, SGA and advertising expenses and they assure that firms usually reduce them to mitigate reported losses and to attain the analyst level of earnings forecast. Having discussed the real type of earnings management, the next section will look at how this type can be measured based on previous research.

2.1 Real earnings management measures

There are three real earnings management activities – sales manipulation, discretionary expenses manipulation and production cost manipulation, as suggested by Roychowdhury

(2006) – which have been studied extensively in the literature.²² These three real earnings management activities can be derived through the cross-sectional models developed by Roychowdhury (2006).²³

Cohen et al. (2008) and Zang (2012) use sales manipulation and discretionary expenses manipulation to measure real earnings management, but not production cost manipulation. They combine the abnormal level of cash flows from operations and the abnormal level of discretionary expenses to capture the aggregate effect of real earnings management. In particular, they multiply abnormal cash flow from operations and abnormal discretionary expenses by -1, and then they take the summation between them, which expresses the aggregated measure of real earnings management. Most of real earnings management studies follow Cohen et al. (2008) and Zang (2012) in this respect.

Having debated the types and measures of earnings management, the next section will cover the previous empirical studies in both types (accruals and real) of earnings management.

2.4.3 Empirical studies of earnings management

There are a great number of studies that address earnings management issues. What follows is a review of earnings management studies in different aspects; some sections also include earnings quality studies; earnings quality can also be referred to earnings management.

1. Earnings management and financial performance

The relationship between earnings management and financial performance has been widely examined in the previous literature, and the results are mixed. For example, Gong et al.

²² I use real earnings management in Chapter 4. However, only two activities (sales manipulation and reducing discretionary expenses) are applied, where I do not take into consideration production cost manipulation as this type of activities can only be used in manufacturing firms (Roychowdhury, 2006) and manufacturing firms represent only 25.4% of the sample. This is consistent with previous research into real earnings management (Alhadab et al., 2015; Ali and Zhang, 2015).

²³ The calculation of the three real earnings management activities, based on Roychowdhury (2006), is explained in Appendix A, Section 8.

(2008) provide evidence that future operating performance and future stock performance are significantly and negatively related to the pre-repurchase abnormal accrual. A related study has been done by Chou et al. (2010) who suggest that the reduction in in stock performance that occurs after private placements of equity is not associated with earnings management. More recently, Tang and Chang (2015) provide evidence that earnings management is negatively related to financial performance in weak corporate governance regime, whereas it is positively related in a strong regime.

In contrast, other researchers find that earnings management is positively associated with earnings performance. For instance, Burgstahler and Dichev (1997) provide evidence that firms manage their earnings to avoid earnings decreases and losses. Consistently, Lee et al. (2006) document that firms with a higher amount of earnings management have higher performance and growth in a reporting model. Furthermore, Gunny (2010) examine the relationship between real earnings management, in particular that is used to meet earnings benchmarks and future performance. Gunny finds that real earnings management used for the purposes of achieving earnings benchmarks is positively related to future performance.

The association between earnings management and financial performance is explained by different theories in the literature. For example, Burgstahler and Dichev (1997) show two theories to explain the role of earnings management in avoiding earnings decreases and losses. The first is the transaction cost theory and the second is prospect theory. Regarding the transaction cost theory, this states that when firms report an earnings decrease, the costs of transaction with stakeholders will be considerably higher than if they report an earnings increase (see Burgstahler and Dichev, 1997). Therefore, this motives managers to manipulate their reporting in order to increase earnings. Another explanation for using earnings management to increase earnings has been provided by Burgstahler and Dichev (1997) and is based on prospect theory. This theory assumes that “decision-makers derive value from gains

and losses with respect to a reference point, rather than from absolute levels of wealth. Prospect theory also suggests that individuals' value functions are concave in gains and convex in losses (S-shaped)" (Burgstahler and Dichev, 1997, p. 123).

Moreover, Gunny (2010) proposes two explanations for the positive relationship between earnings management and future performance. The first is that managers may use their operational discretion to achieve the benefits that will encourage them to perform better in the future. The second is that they use their discretion to provide signal of future financial performance. More clearly, because managers know more about financial performance, they will use their discretion in reporting as a signal only if they are confident that the future performance will be superior, and they expect that future earnings will outweigh the drawbacks of partaking in manipulation (Gunny, 2010).²⁴

In conclusion, mixed results are reported in the literature for the association between earnings management and financial performance. This could be because different measures of earnings management in different sittings are applied. However, assuming that earnings management cost, that occurred to increase earnings, is nearly constant, it is expected that managers increase their manipulation in their earnings in order to attain the perceived value by stakeholders (Burgstahler and Dichev, 1997). Accordingly, this motives managers to exploit their ability to manipulate in reporting in order to increase earnings.

2. Earnings management and information asymmetry

A vital aspect which has been considered extensively in previous earnings management literature is information asymmetry. For example, Dye (1988) and Trueman and Titman (1988) present analytical evidence which explains that information asymmetry is a necessary condition that has to exist in incidences of earnings management. Dye (1988) argues that

²⁴ More review of the relationship between earnings management and financial performance is described in Chapter 4.

management manipulation is beneficial for shareholders where the present shareholders allow managers to do a certain volume of earnings management to make a good impression on prospective shareholders. Therefore, the information asymmetry has to be considered as an essential condition for undertaking earnings management. Schipper (1989, p. 95) also confirms that “an additional condition which must be met for earnings management to exist in an analytical model is that the asymmetry in information persists ...”. Schipper (1989) provides evidence that higher information asymmetry leads to increase the opportunity of managers to manage their earnings. Similarly, Richardson (2000) finds that information asymmetry is positively related to earnings management by using the bid-ask spread and analyst forecast dispersion as a measure of information asymmetry and discretionary accruals as a measure of earnings management.

Another important issue related to the information asymmetry in the earnings management literature that has been extensively stressed is the relationship between earnings management and the cost of capital. This relationship is theoretically based on the positive association between earnings management and information asymmetry, and the positive association between information asymmetry and cost of capital. For example, Francis et al. (2004), Gray et al. (2009) and Aboody et al. (2005) document that greater accrual earnings management is associated with a greater cost of equity capital. In addition, Bharath et al. (2008) find that accrual earnings management is also positively related to the cost of debt. However, McInnis (2010) claims that there is no relationship between earnings smoothing and the cost of equity capital. Francis et al. (2005) provide empirical evidence for the relationship between information risk, measured by accrual quality, and the cost of capital in the US market. They find that firms that have a lower level of accrual quality are associated with a higher level of cost of capital (i.e., the cost of debt and cost of equity capital) than firms that have greater accrual quality. Francis et al. (2005) divide accrual quality into two components: innate

accrual quality, which represents the economic fundamentals of the firm, and discretionary accrual quality, which reflects managerial decisions. They show that the two components affect the cost of capital, but the innate accrual quality has a stronger effect than does discretionary accrual quality. Bhattacharya et al. (2012) test the direct relationship between earnings quality and the cost of equity capital. They also test the indirect relationship between them by using information asymmetry as a mediator variable. They use path analysis to examine the direct and indirect effects. After they used a large sample from the US market for the period from 1993 to 2005, they report that earnings quality is significantly related to the cost of equity capital in both cases (directly and indirectly) with a higher level of importance for the direct relationship. Another relevant study has been carried out by Collins and Huang (2011) where they provide empirical evidence for the relationship between management entrenchment and the cost of equity capital for a sample of large US firms. They report that management entrenchment is positively associated with the cost of equity capital. Moreover, Barth et al. (2013) show that firms that provide a higher level of earnings transparency will obtain a lower cost of capital. They use the strength of the returns-earnings relation as a measure of earnings transparency. They find that their proxy of earnings transparency is negatively related to the expected cost of capital by using a sample of US firms. Finally, Kim and Sohn (2013) examine the relationship between real earnings management and the cost of equity capital by using a sample of US firms. After they control for the impact of accrual earnings management, they find that real earnings management is positively related to the cost of equity capital. They indicate that this positive relationship refers to managerial opportunism and not to the errors in their measurement of real earnings management.

Overall, earnings management is positively associated with information asymmetry and, accordingly, earnings management is positively associated with the cost of capital.

3. Earnings management and corporate disclosure

The relationship between earnings management and corporate disclosure has been extensively examined in previous studies.^{25,26} Theoretically, disclosure is negatively related to earnings management based on information asymmetry theory, where disclosure can reduce the information asymmetry between managers and shareholders (Glosten and Milgram, 1985; Welker 1995; Verrecchia, 2001) and information asymmetry is positively associated with earnings management (Richardson, 2000).

Even though the empirical findings of the relation between earnings management and disclosure are different in the existing literature, it is difficult to make a distinction between studies because they employ different methodology. Some researchers focus on the relationship between specific reporting activities in disclosure and earnings management. For example, Hirst and Hopkins (1998) and Lee et al. (2006) examine the relationship between disclosure of comprehensive income transparency and real earnings management through managers' incentive to selling available-for-sale securities by utilising archival data. These researchers document that greater disclosure about comprehensive income will lead to a decrease in the level of real earnings management due to the fact that maximising transparency assists in the capturing of earnings management. Moreover, Cassell et al. (2015) tests the relationship between the discretion in disclosure transparency, by using the valuation allowance and reserve account as well as accrual earnings management. They find that companies that provide transparent disclosure do lower earnings management than companies that do not provide transparent disclosure. Other researchers also find that the relationship between disclosure and accrual earnings management is negative, by using different proxies to measure the overall level of disclosure, such as Lobo and Zhou (2001)

²⁵ Definitions and further details of disclosure are shown in Section 2.4.1 of this chapter.

²⁶ More studies about the relationship between earnings management and narrative disclosure are presented in Chapter 4.

who use the Association for Investment Management and Research (AIMR) scores, which refers to the quality of voluntary and mandatory disclosure constructed by financial analysts, as a proxy for disclosure. Lapointe-Antunes et al. (2006) employ a self-constructed index using a dummy variable to measure the quality and quantity of voluntary disclosure (UK firms). Iatridis and Kadorinis (2009) apply self-constructed index to classify firms into firms that have voluntary disclosure and firms that do not have voluntary disclosure. Jo and Kim (2007) use firm's press release to test the disclosure. Similarly, Shaw (2003) investigates the relationship between overall disclosure and accrual earnings management by using the AIMR index as a measure of disclosure. Consistent with Lobo and Zhou (2001) who also use the same index, Shaw finds that the relationship is negative in case of “good news years”. In contrast, the author also shows that the relationship between AIMR disclosure index and discretionary accrual is positive in case of “bad news years”. Francis et al. (2008) and Mouselli et al. (2012) examine the relationship between earnings quality and voluntary disclosure, and they find that earnings quality is positively related to voluntary disclosure. Conversely, Aerts and Zhang (2014) apply their study in the US market and state that the existence of causal reasoning in MD&A is positively related to accrual earnings management, which means that greater causal reasoning leads to a reduction in investors' involvement in earnings management and hence will be high. Looking at the Chinese market, Aerts and Cheng (2011) also show that greater earnings management is related to an increase in the level of causal disclosure about earnings.

Moving to the disclosure of corporate social responsibility (CSR), Kim et al. (2012) examine the effect of disclosure of (CSR) on earnings management. They find that firms that are more socially responsible have a lower manipulation in their earnings through discretionary accrual and real management (i.e., operating activities). A new empirical paper examines the relationship between CSR performance and earnings management, taking into consideration

the involvement of family in a firm's ownership, management and governance (Liu et al., 2017). To investigate the effect of family firms, they consider them as one of the family members with a significant proportion of shares of a company and with a position in board of directors or management group. Their study is in the US market where they use S&P 500 companies as a sample. They find that family firms have more CSR performance than non-family firms, and this will support family firms in sustaining legitimacy and in maintaining the affluence of socio-emotional characteristics. They also examine the role of family firms on the two types of earnings management (accrual and real). They show that family firms have lower accrual earnings management, but there are no significant differences between family and non-family firms regarding real earnings management. In terms of the relationship between CSR performance and earnings management, their finding criticises the previous research in this aspect, where they find that there is no relationship between CSR performance and either accrual or real earnings management after controlling for the role of family firms in their model.

Overall, the relationship between earnings management and disclosures has different results, depending on the measure and type of disclosures. However, most studies are in line with information asymmetry theory and document a negative relationship between earnings management and disclosures.

4. Earnings management and other issues

Other researchers address other issues in earnings management literature. For example, Chen et al. (2007) examines the role of conservatism of accounting standard in the mitigation of unobservable earnings manipulation. They show that efficient contract can be achieved by using the conservatism principle in accounting standard and without using earnings management techniques, where this will reduce any bias in economic earnings. Additionally, Burgstahler et al. (2006) test the role of reporting incentives in earnings management by

applying their study to European private and public firms. They emphasise the level of earnings management because it is a main component of accounting quality that directly responds to reporting incentives. In their findings, they indicate that the level of earnings management is high in companies that have a weak legal system in both the private and public sectors. They also find that private companies have a higher level of earnings management than public companies in Europe. This result is consistent with Dichev et al. (2013), who show in the results of their survey of 169 CFOs, in-depth interviews of 12 CFOs and 2 standard setters, where their study is aimed at discussing earnings quality measures, that 20% of public firms use earnings management to manipulate their earnings, where 10% of earnings per share for these firm is distorted, while in private sector, the percentage of firms that manipulate in their earnings is higher, by 30.4%.

Louis (2004) documents that, before a merger event, earnings management is significantly associated with stock-for-stock acquirers' performance. He also shows that, in the period prior stock swap announcement, earnings number is increased by the acquiring firms.

McNichols and Stubben (2008) look at earnings management in terms of internal decisions (e.g., capital investment). They find that manipulating in reporting through overinvesting in capital expenditure is associated with increasing the earnings level. This result supports the notion that earnings management is considerably affected by internal decisions.

Chen et al. (2009) study the Chinese stock market and report that firms reversely manipulate in asset impairments in order to avoid being de-listing or a suspension in trading.

Jackson and Liu (2010) study an essential element that plays an important role in management discretion in the reporting process, which is the allowance for uncollectible accounts. Jackson and Liu (2010) examine the link between conservatism and earnings management taking into consideration the allowance for uncollectible accounts and bad debt expense from income statement. They indicate that managers are conservative in the

allowance account, and that this conservatism in this account continues to grow over time. They also argue that conservatism can be contributed to managing earnings. They find that conservatism is more apparent when managers use a bad debt expense account to manage their earnings. They also show that managers manipulate in their earnings through a bad debt expense account to attain the analysts' earnings prediction where, in particular, managers reduce the bad debt expense account to increase earnings. Additionally, they draw attention to the fact that managers can draw down the previous reported accruals of bad debt account that were collected on the balance sheet statement in order to mitigate the bad debt expense. They conclude that the restrictions on the amount that is allowed for managers to decrease the net asset value of the firm can help reduce management's manipulation.

Dechow and Dichev (2002) is another study related to earnings management and earnings quality. They state that a firm's business model, economic situation and estimation errors have significant impact on earnings quality. Peterson et al. (2015) examine the relationship between accounting consistency and earnings quality. They find that there is a positive relationship between accounting consistency and earnings quality measures, such as earnings persistence, predictability, accrual quality and absolute discretionary accruals. Dichev et al. (2013) assure that by examining a range of views from Chief Financial Officers (CFOs) about earnings quality, where they indicate that the majority of CFOs, about 94% of their sample, clarify that the firms that are more consistent in their reporting choices have a high level of earnings quality.

Furthermore, Demerjian et al. (2012) report a positive relationship between managerial ability and different earnings quality measures. Specifically, they argue that firms with managers who have high ability will have lower earnings restatements, a higher level of earnings persistence, a lower amount in the errors of the bad debt provision, and a higher

quality of working capital accrual estimations. They also find that managers' judgments have a vital role in the quality of earnings.

Other studies in the earnings management and earnings quality literature focus on auditing aspects. For example, Lennox et al. (2016) examine the effect of audit adjustments of the year-end audits on earnings quality. They show that audit adjustments can be considered to be the main reason of making earnings smother and persistent which will likely increase accruals quality. They also find that audit adjustments have a more serious impact on signed accruals than on absolute accruals. The last finding of their study is that audit adjustments do not make any reduction of the discontinuity in the earnings distribution around zero. Moreover, Koh et al. (2013) examine the effect of non-audit services fees on the quality of financial reporting. They find that more non-audit services offered by audit firms is associated with an increasing in earnings quality, which means that, a higher of earnings informativeness is happened as well as the audit process can be improved.

Having discussed the recent and important previous studies that examine the association between earnings management and several issues, such as financial performance, information asymmetry, corporate governance, corporate disclosure and other issues, Table 2.4 below presents a summary of the most recent studies in earnings management from 2010 until 2019.

Table 2.4 Summary of earnings management studies

Author(s) and Year	The aim/objective	Sample and Country	Earnings management methods (measures)	Results
Cassell et al. (2015)	to examine the relation between the transparency of disclosures about activity in valuation allowance and reserve accounts and accruals-based earnings management.	7427 firm-year observations used to test H1, and 5596 firm-year observations used to test H2, for the period (2008 – 2010), U.S.	They first use discretion in individual accruals accounts. In particular, they use the discretionary accruals in the allowance for doubtful accounts by applying Marquardt and Wiedman's (2004a) model. They also use the overall discretion in accruals by using Kothari's (2005) model.	Companies that provide transparent disclosure do lower earnings management than companies that do not provide transparent disclosure. Their analysis focus on the valuation allowance and reserve accounts.
Peterson et al. (2015)	to examine the relation between accounting consistency measures and earnings quality.	112,872 firm-year observations for the period (1994 – 2012), U.S.	They use different measures of earnings quality measures, such as earnings persistence, predictability and smoothness (Francis et al., 2004; De Franco et al., 2011), accrual quality (Dechow and Dichev, 2002) and absolute discretionary accruals. They follow Kothari et al. (2005) to estimate the discretionary accruals.	There is a positive relationship between accounting consistency and earnings quality, while accounting consistency is negatively related to information asymmetry.
Lennox et al. (2016)	to examine the effect of audit adjustments (during year-end audits) on the measures of earnings quality.	11,486 firm-year observations for the period (2006 – 2012), China.	They use different measures of earnings quality measures, such as earnings smoothness and earnings persistence (Dechow et al., 2010), accrual quality (Dechow and Dichev, 2002), signed accruals and absolute accruals (Dechow et al., 2010) and the discontinuity in the earnings distribution around zero.	They provide several results. First, audit adjustments cause earnings to become smoother and more persistent. Second, the adjustments result in higher accrual quality. Third, audit adjustments have a larger negative effect on signed accruals than absolute accruals. Fourth, the adjustments do not reduce the discontinuity in the earnings distribution around zero.

Badolato et al. (2014)	to examine whether audit committee status, relative to management status, interacts with financial expertise to constrain earnings management in the form of accounting irregularities and abnormal accruals.	29,073 firm-year observations for the period, (2001 – 2008), U.S.	Earnings management is measured by accounting irregularities and abnormal accruals (Kothari et al., 2005).	Audit committees with both financial expertise and high relative status are associated with lower levels of earnings management
Koh et al. (2013)	to examine whether non-audit services fees paid to one's auditor are associated with lower-quality financial reporting.	1,281 firm-year observations for the period (1978–1980), U.S.	They use different measures of earnings quality measures, such as (1) absolute discretionary accruals according to modified Jones model, (2) the probability of meeting or beating earnings benchmarks and (3) the stock market's perception of earnings quality measured as the earnings response coefficient.	They find that more non-audit services offered by audit firms is associated with an increasing in earnings quality, which means that there is a lower likelihood of reporting a small earnings surprise and an increase in earnings informativeness. Also, the audit process can be improved.
Chen et al. (2011)	to examine the effects of audit quality on earnings management and cost of equity capital for two groups of Chinese firms, state-owned enterprises and non-state-owned enterprises.	3,310 firm-year observations for the period (2001 – 2004), China.	They used absolute and signed performance-matched modified Jones' model discretionary accruals (Kothari et al., 2005) to measure earnings management.	They show that audit quality negatively affects both earnings management and the cost of equity capital for non-state-owned enterprises. In contrast, there is no significant effect of audit quality on both earnings management and cost of equity capital for state-owned enterprises.

Francis (2008)	to examine the relations among voluntary disclosure, earnings quality, and cost of capital.	677 firms for fiscal year 2001 for disclosure and cost of capital but they used the data from 1991 to 2001 to calculate earnings quality, U.S.	They use different measures of earnings quality measures, such as accruals quality (McNichols, 2002), earnings variability (the standard deviation of the firm's earnings over 1992-2001), absolute abnormal accruals (the modified Jones [1991] model), and a combined measure based on the common factor score from these three measures.	They find that the voluntary disclosures are positively related to earnings quality. In contrast, the voluntary disclosure is negatively related to the cost of capital. However, the effect of disclosure on cost of capital is significantly reduced or totally disappears when controlling for earnings quality.
Dichev et al. (2013)	1- to view the CFOs opinions about earnings quality. 2- to discuss the measures of earnings quality.	Survey of 169 CFOs of public companies and in-depth interviews of 12 CFOs and 2 standard setters, U.S.	-	Their results are that CFOs believe that: (1) above all, high quality earnings are sustainable and repeatable; specific characteristics include consistent reporting choices, backing by actual cash flows, and an absence of one-time items and long-term estimates. (2) About 50% of earnings quality is driven by non-discretionary factors such as industry and macro-economic conditions. (3) In any given period, about 20% of firms manage earnings to misrepresent economic performance; for such firms, 10% of EPS is typically managed. (4) Earnings manipulation is hard to unravel from the outside but peer comparisons and lack of correspondence between earnings and cash flows provide helpful red flags.

Dechow et al. (2010)	to discuss the reasons of variation and the consequences for each of the following measures or proxies of earnings quality: (persistence, accruals, smoothness, timeliness, loss avoidance, investor responsiveness, and external indicators such as restatements and SEC enforcement releases).	47,187 firm-year observations for the period (1987-2007), U.S. Additionally, they reviewed over 300 studies of characteristics or attributes of earnings.	Discuss the reasons of variation and the consequences for each of the following measures or proxies of earnings quality: persistence, accruals, smoothness, timeliness, loss avoidance, investor responsiveness, and external indicators such as restatements and SEC enforcement releases.	They review over 300 studies of characteristics or attributes of earnings that are generally defined. They find that there is no particular definition of the earnings quality because “quality” relies on the decision's circumstance, and “quality” in earnings refers to a function of the firm’s fundamental performance.
DeFond (2010)	to review the study of Dechow, Ge and Schrand (2010) that is related to earnings quality research and discuss the factors that contribute to increase using earnings quality in the literature.	-	Review the study of Dechow, Ge and Schrand (2010) that is related to earnings quality research and discuss the factors that contribute to the increase in the use of earnings quality in the literature	The writer infers that the main factors that contributes to the widespread earnings quality research. One factor is the SEC’s claims of common earnings management that is used by listed firms. Another important factor is a vast expansion use of the abnormal accruals measure. A final point is that there are many factors that explain earnings quality such as audit quality, internal controls and timely loss recognition. In addition, the author warns that earnings quality studies have many difficulties, such as the hardness of validity test in the abnormal accruals measures and the problems that are related to decision-maker preferences.

Christ et al. (2015)	to examine the effect of a rotational employment model of internal auditors on financial reporting quality.	353 firm-year observations for the period (2000 – 2005), U.S.	They measure financial reporting quality using accounting risk, which is developed by audit integrity (Audit Integrity, 2005).	They find that companies that use a rotational staffing model for the internal audit function have significantly lower financial reporting quality than companies that do not. They also find that many of the compensating controls can contribute to mitigating the negative effect of a rotational staffing model of internal auditors on financial reporting quality.
Srinidhi et al. (2011)	to examine the effect of gender-diverse in the top management directors in the U.S. firms on earnings quality.	Semi-structured interviews with 11 chief audit executives and 2 audit committee chairmen, and 353 firm-year observations for the period (2001 – 2007), U.S.	They use different measures of earnings quality measures, such as discretionary accruals quality (Dechow and Dichev, 2002), the lower propensity among firms whose unmanaged earnings are just short of earnings benchmarks to manage earnings and which beat the benchmarks by a small amount (Burgstahler and Dichev, 1997; Burgstahler and Eames, 2003), and lower performance-adjusted discretionary current accruals (Kothari et al., 2005).	They find that firms that have female directors have more earnings quality than firms that do not have any female directors.

Merkley (2014)	to examine the relationship between earnings performance and firms' narrative R&D disclosure.	22,482 firm-year observations for the period (1996 – 2007), U.S.	-	There is a negative relationship between the performance of earnings after adjusting the R&D expense and the number of narrative R&D disclosures. Another finding from this study is that the reason why managers provide R&D disclosures on their earnings is to provide relevant information and to not manipulate reporting earnings. He assures that narrative R&D disclosure is beneficial for market participants because it considerably affects 'sell-side analyst behaviour, disclosure information content and information asymmetry'.
Einhorn and Ziv (2012)	to investigate the voluntary disclosure theory and the link between it and earnings management theory.	They used the key features of the classical voluntary disclosure settings of Verrecchia (1983) and Dye (1985) with those of the earnings management setups of Stein. (1989) and Fischer and Verrecchia (2000), U.S.	The use their own model to analyse their study. They refer to Fischer and Verrecchia (2000), Dye and Sridhar (2004), Ewert and Wagenhofer (2005) and Guttman et al. (2006) to measure earnings management.	They indicate that there is a strong voluntary disclosure when a relaxation in reporting is high. Additionally, there is a high sensitivity between mandatory disclosure and earnings management.
Li (2011)	1- to examine whether corporate investment decisions contain information about earnings quality. 2- to examine a new approach for measuring earnings quality, which represents the contemporaneous association between changes in the levels	34,594 firm-year observations for the period (1952 – 2004), U.S.	They measure earnings quality by using the Corporate Investment Decisions (changes in the levels of capital and labour investment).	The author finds that measures of earnings quality based on managerial labour and capital decisions correlate positively with earnings persistence and have incremental explanatory power relative to earnings quality measures used in the accounting literature. In other words, there is a positive and significant relationship between the investment-based measures of earnings quality and earnings persistence.

	of capital and labour investment and the change in reported earnings.			
Bhattacharya et al. (2013)	to examine whether poor earnings quality is associated with higher information asymmetry in capital markets.	14,389 firm-year observations for the period (1998–2007), U.S.	Earnings quality is measured by using the accruals-based measure based on the modified Dechow and Dichev (2002) model used in Francis, LaFond, Olsson and Schipper (2005).	They find that poor earnings quality is significantly and incrementally (i.e., over and above a well-established benchmark model of trading costs) associated with higher information asymmetry. They find that poor earnings quality has a more pronounced impact on firms operating in a poor information environment, such as small firms and those with low institutional ownership and low analyst following. Specifically, the magnitude of the association between earnings quality and information asymmetry is estimated to be more than twice as large for small firms than large firms.

Lawson and Wang (2016)	to examine whether dividends' information is associated with auditors' assessment of their clients' earnings quality.	19,351 firm-year observations for the period (2004 – 2012), U.S.	Earnings quality is measured by earnings persistence. Earnings manipulation is measured by different measures, such as: the absolute value of performance-adjusted discretionary accruals (Kothari et al., 2005); accrual quality using the standard deviation of the residuals from Dechow and Dichev (2002) model; where they use working capital accruals in one hand, and total accruals (cash flow approach) in second hand.	Their results show that dividends have an interactive effect with respect to earnings persistence and earnings manipulation: the negative association between audit fees and earnings persistence is more pronounced for dividend firms, and dividend pay-outs mitigate the positive relationship between earnings manipulation risk and audit fees. Their results imply dividends reduce audit risk by enhancing clients' earnings quality information.
Srivastava (2014)	to examine why have measures of earnings quality changed over time? or why have the properties of earnings changed dramatically over the past 40 years?	189,608 firm-year observations for the period (1970 – 2009), U.S.	The author measure earnings quality by using the properties of earnings, such as the volatility of SG&A expenses, total expenses, revenues, and earnings (Givoly and Hayn, 2000, p. 313; Dichev and Tang, 2008, p. 1441), revenue–expense matching (Dichev and Tang, 2008, , p.1436) and relevance (Easton and Harris, 1991, , p. 31).	The author finds that each new cohort of listed firms exhibits lower earnings quality than its predecessors, mainly because of higher intangible intensity. The author concludes that the trend of decline in earnings quality is due more to changes in the sample of firms than to changes in generally accepted accounting principles (GAAP) or in the earnings quality of previously listed firms.

Demerjian et al. (2013)	to investigate the association between managerial ability (i.e. managers use their firms' resources efficiently) and earnings quality.	78,423 firm-year observations for the period (1989–2009), U.S.	They measure earnings quality by four measures. The first is earnings restatements (Dechow et al., 2010), which can be considered as evidence of unreliable earnings. The other measures are earnings persistence (Dechow et al., 2010), the accuracy of the bad debt provision (McNichols and Wilson, 1989), and the mapping of working capital accruals into cash from operations (Dechow and Dichev, 2002).	They find a positive relationship between managerial ability and earnings quality, which means that managers who have a high ability are significantly related to lower earnings restatements, a higher level of earnings persistence, poorer amount in the errors of the bad debt provision, and more quality of working capital accrual estimations. They also find that managers' judgments have a vital role of the quality of earnings.
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Heflin et al. (2015)	to examine the effect of conditional conservatism on various properties of GAAP earnings and analysts' forecasts.	The number of firm-year observations varies across different tests specifications. The sample period is (1995–2009), U.S.	They use properties of earnings measures, such as earnings persistence (Bernard and Thomas, 1990), earnings smoothing (Tucker and Zarowin, 2006), earnings informativeness (Collins and Kothari, 1989; Lennox and Park, 2006).	They find that conditional conservatism reduces GAAP earnings persistence and informativeness, makes income smoothing more difficult, and makes forecasting GAAP earnings more difficult for analysts. They also find that analysts forecast Street earnings numbers with less conditional conservatism. The decrease in conditional conservatism from adjusting GAAP earnings to Street earnings leads to improvements in persistence, smoothing, and informativeness and reduces analysts' forecast errors and dispersion. Furthermore, as GAAP conditional conservatism increases, (1) Street earnings are more likely differ from GAAP, and (2) the magnitude of the difference between Street and GAAP earnings increases. Finally, they find that exclusions (from GAAP to Street) are of higher quality for firms with higher GAAP conditional conservatism. Their results suggest that, as the conditional conservatism of GAAP earnings increases, analysts' exclusions make Street earnings more useful to investors.
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Principe (2012)	<p>to discuss Dyreng et al.'s (2012) paper. The discussion presents additional empirical evidence on issues related to the research question raised by Dyreng et al. (2012). In particular, the discussion provides answers to the following preliminary questions: do US multinational firms manage earnings differently from domestic firms? If so, to what extent are they different?</p>	60,474 firm-year observations for the period (1994–2009), U.S.	They use abnormal working capital accruals (DeFond and Park, 2001) to measure earnings management.	<p>The results show that US multinational firms manage earnings less than domestic companies. The author also suggests a number of additional questions on earnings management in multinational firms and calls for further research on the topic.</p>
Francis et al. (2004)	<p>to examine the relation between the cost of equity capital and seven attributes of earnings: accrual quality, persistence, predictability, smoothness, value relevance, timeliness, and conservatism.</p>	1,471 firms per year for the period (1975-2001), U.S.	They use seven measures of earnings attributes: accrual quality (Dechow and Dichev, 2002), persistence, predictability (Lipe, 1990), smoothness (Leuz et al., 2003), value relevance, timeliness and conservatism.	<p>They find that firms with the least favourable values of each earnings attribute, considered individually, generally experience larger costs of equity than firms with the most favourable values. The largest cost of equity effects are observed for the accounting-based attributes, in particular, accrual quality.</p>

Lo et al. (2017)	to explore how the readability of annual reports varies with earnings management.	4855 firms for the period (2000 – 2012), U.S.	They use different measures of earnings management: (1) meeting or just beating past year's earnings (Burgstahler and Dichev, 1997), (2) discretionary accruals (Jones, 1991) and (3) discretionary expenses as a proxy of real earnings management (Roychowdhury 2006). In their analysis, they use the interaction between meeting or just beating the benchmark and the positive earnings management as a proxy for earnings management.	They find that firms most likely to have managed earnings to beat the prior year's earnings have MD&As that are more complex.
Liu et al. (2017)	to shed light on how family involvement affects the link between CSR and earnings management during the post-SOX era.	2,369 firm-year observations for the period (2003–2010), U.S.	They use the accrual-based earnings management measure (Kothari et al., 2005) and the real earnings management measure (Roychowdhury, 2006).	They find that family firms engage in less accrual-based earnings management, although they are indistinguishable from non-family firms in terms of real earnings management. In contrast to previous research, they find that CSR performance is not significantly associated with either accrual-based or real earnings management behaviour after accounting for the effect of family involvement.
Lev et al. (2010)	to examine the contribution of accounting estimates embedded in accruals to the quality of financial information, as reflected by their usefulness in the prediction of enterprise cash flows and earnings.	73,324 firm-year observations for the period (1988 – 2005), U.S.	They measure accounting estimates by using accruals and other variables that are based on the estimated number.	They find that accounting estimates beyond those in working capital items (excluding inventory) do not improve the prediction of cash flows. Estimates do, however, improve the prediction of next year's earnings, though not of subsequent years' earnings. They conclude that the usefulness of accounting estimates to investors is limited and provide suggestions for

				improving the usefulness of estimates.
Barth et al. (2013)	to examine the association between cost of capital and earnings transparency.	51,612 firm-year observations for the period (1974–2000), U.S.	Earnings transparency is measured by the sum of the R^2 s pertaining to firm i 's industry and industry-neutral returns-earnings regressions in year t .	They find that firms with more transparent earnings have a lower cost of capital as reflected in subsequent excess returns and portfolio mean subsequent returns. They also find that firms with more transparent earnings have a lower expected cost of capital.
He et al. (2017)	to examine whether dividend policy is associated with earnings management and whether the relationship varies across countries with wide-ranging degrees of institutional strength and transparency.	23,429 firms for the period (1990 – 2010), 29 countries including 18 developed (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Italy, Japan, the Netherlands, Norway, Singapore, Spain, Sweden, Switzerland, the U.K. and the U.S.) and 11 emerging markets (China, India, Indonesia, Malaysia, the Philippines, Poland, South Africa, South Korea, Taiwan, Thailand, and Turkey).	They use three different accruals measures: (1) Jones (1991), (2) Dechow and Dichev (2002) and (3) Francis et al. (2005).	They show that dividend payers manage earnings less than dividend non-payers, and that this evidence is stronger in countries with weak investor protection and high opacity. Further, they find that dividend payers manage earnings less when they issue equity following dividend payments, and that this result is more pronounced in countries with weak institutions and low transparency. Overall, their evidence suggests that firms may employ dividend policies associated with less earnings manipulation to mitigate agency concerns and to establish credible reputation, thereby facilitating access to

				external funds.
Kothari et al. (2016)	to assess the role of both accruals manipulation and real activities manipulation in inducing overvaluation at the time of a seasoned equity offering.	The number of firm-year observations varies across the variables for the period (1970 – 2012), U.S.	They use accrual earnings management (Kothari et al., 2005) and real earnings management (Roychowdhury, 2006).	<p>They reveal that earnings management is most consistently and predictably linked with post-SEO stock market underperformance when it is driven by real earnings management, in particular, the opportunistic reduction of expenditures on R&D and selling, general, and administrative activities. Thus, overvaluation at the time of the SEO is more likely when managers actively engage in more opaque channels to overstate earnings.</p> <p>Their findings are particularly relevant because managers exhibit a greater propensity for real earnings management at the time of SEOs, even though real earnings management is more costly in the</p>

				long run.
Gao and Zhang (2015)	to test the differential effects of earnings smoothing and CSR on firm valuation.	10,755 firm-year observations for the period (1993 – 2010), U.S.	They construct two smoothing measures to measure earnings smoothing: (1) total accrual smoothing and (2) discretionary accrual smoothing based on Kothari et al. (2005).	Their empirical tests show income-smoothing firms with higher corporate social responsibility (CSR) experience higher contemporaneous earnings-return relationship, greater Tobin's Q, and a stronger current return-future earnings relationship. The results show that CSR is proved desirable as it adds a unique "quality dimension" to earnings attributes and is useful for firm valuation.

Cao et al. (2016)	to examine the relationship of corporate social responsibility with accrual-based earnings management, the frequency of reporting small positive earnings and real activities manipulation in the context of changing regulatory regimes.	13,481 firm-year observations for the period (1996 – 2013), U.S.	They use different measures of earnings management: (1) the absolute value of discretionary accrual (Kothari et al., 2005). (2) loss Avoidance (i.e., just beating or meeting the earnings benchmarks) (Burgstahler and Dichev, 1997) and (3) real earnings management (Roychowdhury, 2006).	<p>They find firms engaging more in CSR activities are more likely to engage in aggressive accrual-based earnings management but less likely to engage in reporting small positive earnings and real activities manipulation. In the context of the passage of Sarbanes Oxley Act of 2002 (SOX), they find high-CSR firms' opportunistic financial reporting practices have been effectively constrained by improved regulatory scrutiny. Specifically, high-CSR firms are less likely to engage in accrual-based earnings management in post-SOX period.</p> <p>In all types of real activities manipulation, they do not find evidence of significant shift from accrual-based earnings management to real earnings management in post-SOX period.</p>
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Jackson (2018)	to discuss some limitations of discretionary accruals measures.	11,475 firm-year observations, U.S.	The author discusses some limitations of discretionary accruals.	<p>It is shown that decisions of peer firms will influence the regression coefficients, and hence residuals, in accruals models which may lead to false conclusions about earnings management in other firms. This point is emphasised using an artificially constructed firm with no changes in their fundamental performance and hence no discretion in their accruals. The author also notes concerns about the inferences which are not commonly acknowledged in research. Finally, using AAERs and Enron as examples, the author demonstrates how discretionary accruals do not capture what literature often claims.</p>
Hilary et al. (2017)	to examine the effect of CEO marital status on the riskiness of financial reporting.	12,674 firm-year observations for the period (1993 – 2008), U.S.	They measure earnings management by discretionary accrual (Dechow and Dichev, 2002; Modified Jones, 1991; Kothari et al., 2005).	<p>They find that firms headed by a single CEO display a higher degree of earnings management than those headed by a married CEO. The effect is economically significant. Their results persist in an instrumental variable regression, suggesting that their results are not driven by innate heterogeneity in preferences.</p>

Abad et al. (2018)	to examines the association between earnings management through real activities manipulation and information asymmetry in the equity market.	468 firm-year observations for the period (2001 – 2008), Spain.	They use real earnings management based on Roychowdhury (2006).	They find that firms' strategies of increasing earnings through real earnings management are associated with higher information asymmetry in those firms that meet last year's earnings. Their findings are consistent with the hypothesis that earnings management through real activities manipulation garbles the market, enhances private information production, and exacerbates information asymmetry in the stock market.
Eliwa et al. (2016)	to examine the association between earnings quality and the cost of equity.	4,214 firm-year observations for the period (2005 – 2011), U.K.	They use different measures of earnings quality measures, such as accruals quality (Francis et al., 2005), earnings persistence (Francis et al., 2004; Richardson et al., 2005), earnings predictability (Francis et al., 2004) and earnings smoothness (Pincus and Rajgopal, 2002; Leuz et al., 2003; Francis et al., 2004).	They find a significant negative association between each accounting-based earnings quality proxy considered separately and the cost of equity.
Rose et al. (2013)	to examine whether stock ownership will induce directors to go along with management's aggressive revenue recognition in light of pressure from the Chief Audit Executive to take a more conservative approach. In particular, they examine whether the effects of board stock ownership are	72 active corporate directors participate in an experiment, U.S.	-	Management insists on aggressive recognition of revenue, but the chief audit executive proposes a more conservative approach. Results indicate interactive effects of director stock ownership and the transparency of director decisions. Stock-owning directors are more likely to oppose management's attempts to manage earnings when transparency increases. For non-stock owning directors, however, increasing transparency does not affect the likelihood that directors oppose management's attempts to

	dependent upon board discussion transparency.			manage earnings.
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Gaio and Raposo (2014)	to examine the relationship between corporate governance and earnings quality around the world.	537 firms for the period (1990 – 2003), 35 countries (Argentina, Australia, Austria, Belgium, Brazil, Chile, China, Denmark, Finland, France, Germany, Greece, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Korea (South), Malaysia, Mexico, Netherlands, New Zealand, Norway, Pakistan, Peru, Philippines, Portugal, Singapore, Spain, Sweden, Switzerland, Taiwan, Thailand and the U.K.).	They use several measures earnings quality and then compute an aggregate ranking, such as accruals quality, persistence, predictability, and smoothness, value relevance, timeliness, and conservatism. They follow Francis et al. (2004) in the calculation of these measures.	They find a negative and statistically significant relationship between corporate governance ratings and earnings quality rankings, suggesting that corporate governance and earnings quality are substitute mechanisms. The justification for this result would be a lesser need to invest in costly governance mechanisms for those firms that already offer high levels of earnings quality. Overall, their results suggest that poorer earnings quality increases the demand for corporate governance systems to mitigate information asymmetry and agency conflicts between managers and shareholders. This substitute role for corporate governance and earnings quality suggests that strong corporate governance standards can make up for poor earnings quality, which is consistent with the notion that limitations of financial accounting information imply a demand for costly monitoring mechanisms.
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Dyreng et al. (2012)	to examine the geographic location of earnings management within multinational firms.	2,067 multinational firms for the period (1994 – 2009), U.S.	They measure earnings management by signed pre-tax discretionary accruals, the absolute value of pre-tax discretionary accruals according to the modified Jones model before taxes (Jones 1991; Dechow et al., 1995) and restatements.	They predict and find that firms with extensive foreign operations in weak rule-of-law countries have more foreign earnings management than companies with subsidiaries in locations where the rule of law is strong. They also find some evidence that profitable firms with extensive tax haven subsidiaries manage earnings more than other firms and that the earnings management is concentrated in foreign income. Apart from these results, they find that most earnings management takes place in domestic income, not foreign income.
De Jong et al. (2014)	Surveying financial analysts to gain insight into how earnings management influences investor perception of firm value.	Survey of 306 analysts employed by 11 of the world's largest investment banks, and interviews with 21 analysts, U.S.	-	They find that analysts perceive meeting earnings benchmarks and smoothing earnings to enhance investor perception of firm value and all earnings management actions to reach a benchmark, save share repurchases, to be value-destroying. CFOs, however, are reluctant to repurchase shares, preferring to use techniques viewed by analysts as value-destroying (e.g., reductions in discretionary spending). Analysts' inability to unravel such techniques perhaps explains CFOs' preferences.

Jackson and Liu (2010)	to study the interrelation between conservatism and earnings management by focusing on the allowance for uncollectible accounts and its income statement counterpart, bad debt expense.	4,965 firm-year observations for the period (1980 – 2004), U.S.	They use the accrual method of accounting for bad debt expense and also use the meeting or beating of the earnings benchmarks.	<p>They find that the allowance is conservative and that it has become more conservative over time.</p> <p>Conservatism may, however, facilitate earnings management.</p> <p>They find that firms manage bad debt expense downward (and even record income-increasing bad debt expense) to meet or beat analysts' earnings forecasts and that conservatism accentuates the extent to which firms manage bad debt expense. Further, they find that firms manage bad debt expense downward by drawing down previously recorded over-accruals of bad debt expense that have accumulated on the balance sheet. An implication of their study is that tighter limits on the amount by which firms are permitted to understate net assets may reduce their ability to manage earnings.</p>
Kim et al. (2012)	to examine the effect of corporate social responsibility disclosure on financial reporting.	23,391 firm-year observations for the period (1991 – 2009), U.S.	They use the absolute value of discretionary accruals based on Kothari et al. (2005) and use real earnings management based on prior studies (Roychowdhury, 2006; Cohen et al., 2008; Cohen and Zarowin 2010; Badertscher 2011; Zang 2012).	They find that firms that are more socially responsible have a lower manipulation in their earnings through discretionary accrual and real management (i.e., operating activities). Consequently, the financial information will be more reliable and more transparent.

Ali and Zhang (2015)	to know whether the changes in CEOs' incentive can manage firm's reported earnings or not during their time of service.	Discretionary accruals models contains 20,206 firm-year observations, and abnormal discretionary expenses models contains 24,161 firm-year observations for the period (1992 – 2010), U.S.	They use discretionary accruals based on McNichols (2002) and also use real earnings management based on Roychowdhury (2006).	<p>They find evidence that CEOs' incentives that motivate them to maximise their earnings are higher at the beginning of their tenure than at the end of their years of service.</p> <p>This may be attributed to career issues. However, they also indicate that this result of the relationship between CEO tenure and earnings management will be reduced if there are more controls and a strong regulation system in both inside and outside the firm. They suggest that CEOs in their first time for years of services are keen to provide more good news to reflect their abilities in the market, particularly, when the market is in uncertain situation.</p>
Francis et al. (2005)	to examine the effect of accrual quality on costs of debt and equity capital.	91,280 firm-year observations for the period (1970 – 2001), U.S.	They use accrual quality measure based on Dechow and Dichev's (2002) and McNichols (2002). They distinguish between accruals quality driven by economic fundamentals (innate AQ) versus management choices (discretionary AQ).	<p>They document that lower earnings quality is related to a higher cost of debt and equity capital, consistent with several studies that use alternative measures of accrual quality. They distinguish their accrual measure by dividing accrual into two components. The first is the innate component, which refers to economic characteristics, and the second is the discretionary component, which refers to management's decisions that have greater judgment and discretion.</p>

Stubben (2010)	to examine the ability of revenue and accrual models to detect simulated and actual earnings management.	The number of firm-year observations is not shown in the paper. The sample period is (1988 – 2003), U.S.	The author constructs a measure of earnings management called discretionary revenues.	Their results indicate that revenue models are less biased, better specified and more powerful than commonly used accrual models. Using a simulation procedure, the author finds that revenue models are more likely than accrual models to detect a combination of revenue and expense manipulation. Using a sample of firms subject to SEC enforcement actions for a mix of revenue and expense related mis-statements, the author finds that, although revenue models detect manipulation, accrual models do not. These findings provide support for using measures of discretionary revenues to study earnings management.
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2.5 Summary and Conclusion

This chapter reviews the theoretical and empirical studies about corporate reporting and management communication. In particular, it focuses on tone management, earnings management, and how these two strategies are associated with financial performance. This chapter reviews the previous studies related to management communication in narrative disclosure discipline. It shows that researchers recently provide more insights on this aspect. In particular, they study managerial tone or sentiment in different venues, such as corporate filings, earnings press release, news media articles and earnings conference call. In summary, most of the previous studies emphasise evaluating managers' tone and whether it provides incremental explanatory power. In particular, they study the market reaction of tone management. This has been covered in different venues as discussed above. The chapter shows that several studies examine the association between tone management and financial performance, but the results are mixed. The chapter also extensively reviews the earnings management studies. Earnings management is well-documented in the literature. Researchers have studied earnings management in different contexts for a long time, and the problem for this behaviour still exists nowadays. Several studies presented in this chapter show that firms engage in earnings management in order to meet or just beat the earnings benchmark. According to the literature, it is concluded that earnings management is a managerial opportunistic behaviour used for self-serving purposes. Different measures are used in the literature to estimate earnings and tone management. This chapter also looks at the types and measures of these two strategies in the literature. In conclusion, tone management, financial performance and earnings management are fundamental concepts in the accounting field and should be increasingly studied in academic research.

2.6 Research gap

Tone management is new in accounting research and most previous studies cover the US firms. Few studies focus on managerial tone in the UK firms (e.g., Schleicher and Walker, 2010; Schleicher, 2012; Ressas and Hussainey, 2014; Wisniewski and Yekini, 2015; Iatridis, 2016; Yekini et al., 2016), but they study managerial tone only in annual reports. To the best of the author knowledge, this thesis is the first that look at managerial tone in the UK earnings conference calls.

This chapter shows that several studies in the literature focus on the association between tone management and financial performance. They examine whether managerial tone is informative about financial performance. The findings of this association are mixed. It has been shown that managers use tone to reflect the current and future performance. However, it has also been documented that tone is employed in order to change the perception of users about financial performance (i.e., impression management purposes). This association is well-covered using MD&A and earnings press release as channels of tone. However, it is not totally covered using earnings conference calls. Although there are some limited studies provide some attention on this association using earnings conference calls (e.g., Frankel et al., 2010; Davis et al., 2015; Allee and DeAngelis, 2015), these studies do not entirely cover the association. For example, Frankel et al. (2010) study the association between tone and firms that just miss the earnings benchmark. Their focus in this case is on analysts' earnings forecast rather than firm's actual performance. Davis et al. (2015) focus on managers' characteristics. Even though they shed light on the association between managerial tone and financial performance, they only consider specific managers in the earnings conference call to achieve the purpose of their study. Therefore, their results could be biased in this respect. Allee and DeAngelis (2015) focus on tone dispersion, rather than the nature of tone. In conclusion, the association between tone management in earnings conference calls and

financial performance needs to be covered. It will assist in evaluating managerial tone whether it is informative about financial performance; because the results of this association using different channels of managers' disclosures are mixed. This motivates the author to look at this issue as shown in Chapter 3 in this thesis.

It is important to state that the association between earnings management and tone management has received a very little attention in the literature (e.g., Iatridis, 2016; Boudt and Thewissen, 2018; Huang et al., 2018). For example, Iatridis (2016) provide a little attention about the association between accruals earnings management and tone management in annual reports. Boudt and Thewissen (2018) look at this association using the CEOs letter as a channel of management tone. Huang et al. (2018) use the earnings press release as a channel of management tone to examine the association between accruals earnings management and tone management. However, earnings conference call has not been considered yet to examine this association. Additionally, all of the three studies above only consider accruals earnings management. They do not provide any attention about real earnings management. As earnings management, it is considered as managerial opportunistic behaviour; managers may use tone as impression management behaviour to conceal their engagement in earnings management. To the best of the my knowledge, the association between the two types of earnings management (i.e., accruals earnings management and real earnings management) and tone management in earnings conference calls, and how these strategies are used to just beat the earnings benchmarks have not been considered yet in previous research. These issues need to be covered. This motivates the author to shed light on this research gap as shown in Chapter 4 in this thesis.

3 Tone in Earnings Conference Call: Obfuscation or Information?

Evidence from FTSE 350 companies

Abstract—The use of tone management in various medium of communication strategies has recently been the subject of vast interest in the accounting literature. The aim of this paper is to examine the association between managerial tone in earnings conference calls and financial performance. Specifically, it examines whether firms engage in tone management to obscure their current unfavourable performance, or to provide relevant information of financial performance. This research paper uses a sample of non-financial FTSE 350 firms during the period from 2010 to 2015. It finds that current financial performance is positively associated with management positive tone in earnings conference call, suggesting that managerial tone in earnings conference calls is not used to obscure current unfavourable performance. This paper also finds that managerial tone is positively associated with future financial performance. These results are the same in three different positions in the call: the presentation section, Q&A section, and the both presentation and Q&A sections. This confirms that managerial tone in the earnings conference call reflects current and future performance, and managers use managerial tone in their speaking in the earnings conference call as information signals of their future performance prospectus. This suggests that managers' tone in earnings conference calls is informative and can be used to predict the future performance of a firm. Overall, this study adds to the understanding of using the tone in earnings conference calls in the UK. It completes the previous research in terms of the association between tone and a firm's financial performance, and it is the first that provides a primary assessment for tone in earnings conference calls in the UK context.

Keywords—Management Tone, earnings conference call, financial performance, impression management theory, signalling theory.

3.1 Introduction

Managers during the earnings conference call can speak too optimistically or pessimistically relative to quantitative disclosures about financial performance. This study investigates the relationship between managerial tone in the earnings conference call and the firm's financial performance.

Disclosing only quantitative information is insufficient for investors to obtain full picture about a firm's economic circumstances. In fact, investors firstly need to translate the quantitative information in order to understand it and consider it (Fiske and Taylor, 1991).

The rhetoric engaged in managers' disclosures assist investors to understand quantitative disclosures, so it could be informative for users in general. However, the rhetoric could be used alternatively to deceive the user. Rapp (2010, Section 4.2) defines rhetoric as "a neutral tool that can be used by persons of virtuous or depraved character. This capacity can be used for good or bad purposes; it can cause great benefits as well as great harms". Several studies have applied different linguistic analysis tools to examine the rhetoric in management disclosures. In recent years, previous studies provide more attention on managerial tone (i.e., positive versus negative words) in various dimensions of corporate disclosures.

Researchers show that tone is important information in capital market, as it has incremental explanatory power and managers use it to communicate with stakeholders (Tetlock, 2007; Feldman et al., 2010; Frankel et al., 2010; Demers and Vega, 2011; Davis et al. 2012; Davis and Tama-Sweet, 2012; Price et al., 2012). Additionally, previous studies document that managerial tone reflects current and future performance (e.g., Li, 2010b; Frankel et al., 2010; Feldman et al., 2010; Demers and Vega, 2011; Davis and Tama-Sweet, 2012; Davis et al., 2012; Davis et al., 2015; Boudt and Thewissen, 2018). In this case, tone can be considered as informative disclosures. This case is in line with voluntary disclosures' theoretical view, as tone stems voluntarily from managers. In particular, economic theory can in this respect

explain managerial tone.²⁷ Clearly, disclosing voluntary information reduces the information asymmetry between managers and stakeholders, which will support stakeholders in their decision making as managers have higher level of information than stakeholders (Glosten and Milgram, 1985; Welker, 1995; Verrecchia, 2001). In tone context, managerial tone can be considered as information signals from managers to stakeholders.

However, tone could be used as impression management behaviour. Tone is mainly derived by managers' words. Therefore, it can be considered under accounting narrative discipline. Away from economic theories, narrative disclosure can be explained by attribution and impression management theories (Bettman and Weitz, 1983; Aerts, 1994).²⁸ Clearly, it can be used for manipulation purposes (e.g., obfuscation of outcomes) by affecting human perception (Beattie, 2014).²⁹ Schleicher and Walker (2010) and Huang et al. (2014) provide insights into tone in this respect and show that managerial tone is used to obfuscate negative performance. Furthermore, managerial tone could also be used for obfuscation purposes in cases when firms have strong performance. In this case, managers may downplay their optimistic tone in order to decrease the analyst's expectation about their performance to keep hitting the analysts' earnings target (Kross et al., 2011), or reduce the option strike price if firms decide to award stock options to CEOs (Huang et al., 2014).

In conclusion, some previous studies show that managerial tone could be informative about financial performance, but other studies report that it is mis-informative. I am interested in studying the association between managerial tone of the earnings conference call and current performance, and seeing if tone reflects current performance. Then, I examine whether tone predicts future performance.

²⁷ More details of economic theories are discussed in Chapter 2, Section 2.2.1.

²⁸ More details of attribution and impression management theories are discussed in Chapter 2, Section 2.2.2.

²⁹ This theoretical stream is constructed based on the psychology and social psychology disciplines. See Section 2.4.1 in Chapter 2 for more details.

This paper focuses on earnings conference call, rather than other channels of management communication for several reasons, as is shown below:

First, the structure of an earnings conference call is dynamic as opposed to other formal documents sources that have a static structure, such as corporate filings (Blau, 2015). This feature stems from the interactive discussion between managers (i.e., CEOs and CFOs) and the audience (e.g., analysts and investors). Earnings conference call contains two sessions (i.e., managers' presentation session,³⁰ and a question and answer (Q&A) session). In Q&A session, the audience ask questions and then managers interactively respond to these questions, but sometimes managers ask the questions and the audience then responds (Lee, 2016). This interactive discussion is not available in any other formal communication.

Second, managers' words in the Q&A session are extemporaneous words based on the audience's questions. Such words are not prepared beforehand. This extemporaneity in the call increases the possibility that managers disclose value-relevant information (Tasker, 1998; Frankel et al., 1999; Bowen et al., 2002; Bushee et al., 2003; Hollander et al., 2010; Lee, 2016), which renders ordinary investors' decisions affected by this information (Frankel et al., 1999; Brown et al., 2004; NIRI, 2004; Kimbrough, 2005; Price et al., 2012). This feature does not exist in other management communication channels. Most of management disclosures are well prepared before disclosing any information to outsiders. This gives the earnings conference call a great privilege, compared with other types of voluntary disclosure where it becomes a more important and value-relevant communication strategy (Frankel et al., 1999; Bushee et al., 2003; Lee, 2016).

Third, the majority of attendees to earnings conference call are sophisticated users, mainly analysts. They participate in the call because they have the opportunity to meet managers and ask questions. Their discussion creates additional and relevant information to other users.

³⁰ This is managers' discussion about firms' performance results for the period.

Matsumoto et al. (2011) provide evidence that significant and incremental information stems from managers' and analysts' discussion in the Q&A session of the earnings conference call. Finally, earnings conference call is less regulated voluntary disclosure channel. It is not audited as mandatory firms' disclosures. Therefore, it has greater managerial discretion to manipulate than other channels of firm's disclosures (Bushee et al., 2018).

There are few studies in the literature shed light on managerial tone in earnings conference calls (e.g., Frankel et al., 2010; Price et al., 2012; Davis et al., 2015; Allee and DeAngelis, 2015).³¹ Three of these studies provide a little attention on the association between managerial tone and financial performance (e.g., Frankel et al., 2010; Davis et al., 2015; Allee and DeAngelis, 2015). However, they do not cover this association comprehensively. For instance, Frankel et al. (2010) focus on analysts' earnings forecast. They only consider firms that just miss the earnings forecasts rather than all firms. Davis et al. (2015) only consider specific managers in their sample rather than all managers participated in the earnings conference call, since the main focus in their study is on managers' characteristics not on financial performance, so that their results of the association between tone and financial performance could be biased in this respect. Allee and DeAngelis (2015) study tone dispersion in the earnings conference call, rather than tone itself. Consequently, there is no clear evidence in the current literature about the association between tone in the earnings conference call and financial performance, which needs to be investigated.

This study follows Li (2010b) in studying deeply the association between managerial tone and financial performance, but differ from his approach. Li (2010b) focuses on managerial tone in the forward-looking statements in the Management Discussion and Analysis section (MD&A) of 10-K and 10-Q filings, whereas this study focuses on managerial tone in all earnings conference calls. This study also differs from him in measuring tone. He applies a

³¹ These studies are reviewed in Chapter 2, section 2.3.3.

statistical approach called “Naïve Bayesian machine learning algorithm” to measure tone. He manually classifies the forward-looking sentences into relative tone (i.e., positive, neutral, negative and uncertain). This tone measure could be limited to the self-selection bias of the researcher. However, this study measures tone based on the positive and negative keywords’ lists suggested by Loughran and MacDonald (2011),³² which are described as the best suitable dictionaries in financial reporting communications compared with other dictionaries (Huang et al., 2014).

The sample comprises all non-financial firms that consider under FTSE 350 in any year during the sample period. The sample period used in this research is from 2010 to 2015. For validity concern, I test the hypotheses in different parts of the call (i.e., presentation part, Q&A part, and both presentation and Q&A parts).

The results show that firms with better current performance tend to have a more positive tone in earnings conference call. Clearly, the results show that a 1 point change in the current financial performance is expected to increase the positive managerial tone in the earnings conference call by 0.36. This evidence is found after controlling for the firm’s size, stock returns, and other factors that may affect managerial tone. This indicates that current performance is positively associated with managerial tone in the earnings conference call, suggesting that managerial tone in the earnings conference call is not employed to obfuscate current performance. Instead, it reflects the current performance. Not surprisingly, the results also show that managerial tone is more positive when the firm has less volatile earnings, which assures that managerial tone is not used for obfuscation purposes.

This paper also finds that firms with more positive tone in earnings conference calls tend to have better performance in the subsequent year. Specifically, the results show that 1 point increase in positive tone in the earnings conference calls is expected to increase the

³² Appendix C shows the words’ lists.

subsequent year performance by 0.06. This result is discovered after controlling for current earnings, the firm's size, stock returns and other factors that may affect future financial performance. This indicates that managerial tone in the earnings conference call is positively associated with future performance, suggesting that managerial tone in the earnings conference call is employed to signal information about future performance prospectus. In other words, managerial tone in earnings conference calls is informative and can be used to predict future performance. Not surprisingly, the results also show that the coefficient on stock returns positively predicts earnings in the next year.

This research reports results similar to the above results in case when each session of the earnings conference calls is applied individually. It also applies various measures of managerial tone and financial performance as robustness checks to confirm the results. The results are mostly similar to the original results. This paper also finds that managerial tone is significantly and positively correlated with both firm's current and future performance. Clearly, the results are robust and confirm that managerial tone in earnings conference calls has incremental explanatory power about financial performance. The results are consistent with Li (2010b) who find similar results in MD&A of 10-K and 10-Q filings.

In additional tests, I divide the sample into two groups (i.e., group for firms with strong performance, and group for firms with poor performance). Then, I repeat the original analyses using each group separately. The results of these tests show that managerial tone for firms with poor performance are more likely to reflect firm's current and future performance than firms with strong performance. This concludes that firms with poor performance are more interested in using managerial tone during the earnings conference call to disclose information about their performance than firms with strong performance in order to reduce the information asymmetry level.

I also test the association between audience tone in earnings conference calls and future performance, and find that future financial performance is positively associated with audience tone. This result indicates that audience tone is consistent with managerial tone in terms of predicting future performance. In other words, both of these tones assist in reducing information asymmetry to contribute in predicting future performance.

This study contributes to the literature in several ways. This research is among the first of several studies on the association between managerial tone and financial performance. Prior studies show mixed results on this association (i.e., positive association and negative association) using different management communication venues other than earnings conference call, such as MD&A (Li, 2010b) and earnings press release (Davis et al., 2012; Huang et al., 2014). The assessment on this relation is incomplete due to the mixed results. Therefore, this study extends the literature on whether managerial tone is informative about financial performance.

This research is also the first to use the earnings conference call to cover the association between managerial tone and financial performance. This study adds to the literature on evaluating how managers communicate in the earnings conference call about financial performance, and whether tone in the earnings conference call can be used to predict future performance.

This study also contributes to practice by providing evidence that managerial tone in earnings conference calls reflects current and future performance. This would be useful for users in their investment decisions, as the results are in line with economic theory suggesting that managerial tone in the earnings conference call reduces information asymmetry.

Last but not least, this study is the first that provide an assessment for managerial tone in earnings conference calls of the UK FTSE 350 companies. There is still no study examining

the earnings conference calls in the UK market, and this is the reason for choosing the UK market.

I continue this chapter as follows. In section 3.2, I show background on the tone when it is used for obfuscation purposes and when it is used as signalling of future information. In sections 3.3, I describe the data, variables measurement, and research model. In section 3.4, I present the results. In sections 3.5, I show additional analyses about the association between tone and future performance, and robustness checks for the main results. Lastly, I summarise and conclude the study in section 3.6.

3.2 Literature review and hypotheses development

There is a huge body of literature on voluntary disclosure and accounting narrative research (e.g., Lang and Lundholm, 1993; Miller, 2002; Botosan and Harris, 2000; Beattie et al., 2004; Marquardt and Wiedman, 2005; Merkley, 2014; Beattie, 2014). Two different theoretical streams explain voluntary disclosure and accounting narrative as shown in previous studies. The first stream is that voluntary and narrative disclosures could be explained by economic theories, suggesting that voluntary disclosure reduce the information asymmetry between managers and stakeholders (Glosten and Milgram, 1985; Welker, 1995; Verrecchia, 2001).³³

The second stream is that accounting narrative could be explained by attribution and impression management theories.³⁴ In other words, narrative disclosures could be used for obfuscation purposes (i.e., impression management), suggesting that managers disclose narrative information in order to change the users' perception about their performance (Marquardt and Wiedman, 2005; Li, 2008; Beattie, 2014).

³³ More details of economic theories are discussed in Chapter 2, Section 2.2.1.

³⁴ More details of attribution and impression management theories are discussed in Chapter 2, Section 2.2.2.

In recent years, research in voluntary disclosure and accounting narrative is growing to focus on managerial tone in management disclosures. Managerial tone can be defined as positive against negative language “words” that stems from managers (Huang et al., 2014; Davis et al. 2015). Managerial tone is a type of management voluntary and narrative disclosures, and can be considered under the voluntary and narrative disclosures theories discussed above. A number of prior studies have evaluated tone and show how it will affect readers or audience in various corporate disclosures media. However, the evidence on this occasion is mixed. Some previous studies show that tone is provided for obfuscation-like behaviour or impression management behaviour (e.g., Schleicher and Walker, 2010; Cho et al., 2010; Huang et al., 2014; Barkemeyer et al., 2014). In contrast, other studies show that tone is informative and is used for signalling information about future performance (e.g., Li, 2010b; Frankel et al., 2010; Feldman et al., 2010; Demers and Vega, 2011; Davis et al. 2012; Davis et al., 2015). This is consistent with the two different streams that justify voluntary disclosures and accounting narrative which are discussed earlier. A review of previous studies of managerial tone under each stream is shown below.

3.2.1 Obfuscation incentive in explaining tone

A number of prior studies have examined the obfuscation or impression management practice in the management narrative disclosures and clarified that this practice is more effective in the language of such disclosures. For example, Aerts (1994) argues that impression management practice in the annual report is more applicably effective by employing bias in the language of the annual report. Jameson (2000) clarifies that language in corporate narrative is used to blur the fact about the reasons for adverse firm’s financial performance. Similarly, Smith and Taffler (2000) and Sydserff and Weetman (2002) conclude that firms employ specific language characteristics in their narrative disclosure in order to affect

positively the perception of stakeholder of the firm “obfuscation”. Li (2008) reports that firms that have lower earnings provide annual reports that are harder to read.

Some studies provide insight on managerial tone and examine whether it is used for impression management behaviour. For instance, Henry (2008) argues that, in corporate communication, positive tone is set when possible and verbal complexity words are provided for obfuscation purposes. Tama-Sweet (2010) shows that, before exercising options, the optimism level in the tone of an earnings press release is increased when the litigation risk is at a low level for obfuscation purposes. Davis and Tama-Sweet (2012) find that pessimistic tone is greater in the MD&A than earnings press release where managers strategically have stronger incentives to have less pessimistic tone.

Another group of studies investigates the association between managerial tone in different communications and firms’ financial performance in different settings, and show a negative association between them (e.g., Li, 2008; Cho et al., 2010; Barkemeyer et al., 2014).³⁵ It is clear from these previous studies that managers engage more in an optimistic tone in order to obfuscate the negative performance. However, it can also be argued that managers downplay their optimistic tone when they have stronger performance. The explanation for managers doing so could be to lower analysts’ expectations about their performance to maintain meeting or beating the analysts’ earnings expectation. This has been confirmed by Kross et al. (2011). They provide evidence that in cases when firms have strong performance, firms will disclose bad news to maintain the consistency in meeting or beating earnings expectations. Additionally, Huang et al. (2014) show that when firms decide to award stock options to CEOs, managers will bias tone downwards in order to reduce the option strike price. This could be another explanation why managers downplay their optimistic tone. Likewise, Allee and DeAngelis (2015) provide evidence that tone dispersion is associated

³⁵ For more details about these studies, see Section 2.4.3/1 in Chapter 2.

with managers' incentives to affect users' perception in cases when the financial performance is high or low.

In sum, the above discussion assumes that managers employ the tone in their communication with stakeholders in purpose for impression management. If management tone is used for obfuscation purposes as discussed above, then I expect a negative association between current performance and management optimistic tone in earnings conference calls. Therefore, I test the following hypothesis:

H1: Management optimistic tone is negatively associated with current financial performance (obfuscation hypothesis).

3.2.2 Signalling incentive in explaining tone

As opposed to the first hypothesis, tone or sentiment that stems from managers could be considered as information rather than obfuscation about financial performance. In other words, it could be used to reflect and signal information about future financial performance. This is theoretically explained by signalling theory suggesting that because managers have information more than users, managers can reduce the information asymmetry by signalling information to users about their performance through their tone in the communication with them.³⁶

A group of previous studies documents that different settings of financial performance, such as future return on assets, future earnings surprises and future performance with high information asymmetry setting, are positively associated with managers' optimistic tone in different corporate communications (e.g., Li 2010b; Davis et al. 2012; Patelli and Pedrini, 2014; Davis et al., 2015; Feldman et al., 2010; Davis and Tama-Sweet, 2012; Demers and Vega, 2011; Boudt et al., 2018; Boudt and Thewissen, 2018).³⁷ In line with these studies, it

³⁶ The signalling theory is discussed in Chapter 2 of this thesis, particularly, in Section 2.2.1/2.

³⁷ For more details about these studies, see section 2.4.3/1 in Chapter 2.

can be argued that firms with strong future financial performance provide more optimistic tone during earnings conference calls to signal positive information to users about their future financial performance in order to reduce information asymmetry. However, for firms with poor future financial performance, it is expected that they will warn users about their performance through signalling tone downwards. In this case, litigation concern may motivate managers to be more cautious in their speaking during the call, or this might be to decrease the analysts' earnings expectation consistent with Kross et al. (2011) who argue that firms disclose bad news to reduce analysts' earnings expectations.

Overall, consistent with signalling theory and the above studies, if managerial tone in earnings conference calls is used for signalling purposes, I expect that the relationship between tone and future financial performance is significantly positive, which means that firms that provide more optimistic tone are more likely to have a higher future financial performance, suggesting in turn that managers provide signals of their future financial performance to the audience of the call through their speaking, where managers have the knowledge how their future performance will be and what they intend to do in the future. Therefore, I test the following hypothesis:

H2: Management optimistic tone is positively associated with future financial performance (signalling hypothesis).

The above hypotheses are developed from two competing theories. Therefore, the two hypotheses represent two phenomena. Current and future financial performance are treated as two different phenomena. More clearly, from obfuscation theory perspective, earnings conference call can only obfuscate current financial performance, but not future financial performance. After a couple of months, the investors will find the truth. Simply, managers cannot cheat for a long time (i.e. after a year). However, from signalling theory perspective, managers only can signal future financial performance, but not current financial performance.

3.3 Data and Methodology

3.3.1 Data

This study focuses on earnings conference calls in the UK, and not all firms do such calls in the UK. More specifically, only the large firms are interested to do so. Furthermore, in the UK market, there is no database which includes them together and the only way to obtain them is manually by searching for each company name in “Thomson Reutter Database”, contrasted with the US market. Therefore, I restrict the sample to be emphasised on firms in FTSE 350. Another reason of choosing FTSE 350 is that it is commonly used, and it represents economically most main firms. The sample period for this study lasts from 2010 to 2015. Due to the financial crisis which began in 2007 and many companies going bankrupt, the FTSE list changed dramatically from 2007 to 2009. For this reason, the sample started from 2010. More clearly, if I consider the financial crises period, the total number of firms in the sample will be considerably reduced. I end the sample period in 2015. It is important to mention here the Brexit³⁸ issue which occurred in 2016. To avoid any possibilities of Brexit influencing management tone, the years 2016 and 2017 are excluded from the sample.

To avoid survivorship bias (i.e., selection bias), the sample consists of firms that are listed in London stock exchange (LSE) over the whole sample period (2010 – 2015), and have been classified under FTSE 350 in any year over the sample period.

The number of firms selected for the sample period is 471. Following previous researchers, such as Vafeas (1999), Athanasakou et al. (2011), Abernathy et al. (2014), Hussainey et al. (2003), Dimson et al. (2003), Mouselli et al. (2012), Beretta and Bozzolan (2008) and Athanasakou and Hussainey (2014), I exclude financial firms (155 firms), because they have fundamentally different financial reporting structures. I also exclude another firm, whose

³⁸ Brexit refers to the British exit from the European Union (EU), where on 23 June 2016, UK voters chose the UK to leave the EU (Los et al., 2017).

financial data is unavailable for all years in the sample period, since it has been acquired during 2010. This firm is called “**Wellstream Holdings Ltd**”. The final number of firms used is 315 firms. Table 3.1 shows the results of the number of firms selected in the sample.

Table 3.1 Selection procedure of firms used in the sample

Number of firms classified under FTSE 350 in any year from 2010 to 2015	471
Less: number of financial firms	(155)
Less: number of firms with unavailable financial data for the whole sample period	(1)
Number of firms used in the sample	315

Table 3.2 shows the industries classification according to the two digits of ICB (Industry Classification Benchmark)³⁹ classification, which results in 15 classifications in the sample.⁴⁰ Automobiles and parts sector has only 1 firm, while the industrial goods and services sector has the maximum number of firms, 73 firms, which consists of approximately 23% of the sample. Chemicals, construction and materials, and telecommunications have less than 10 firms. The number of firms in the other sectors varies from 10 to 37 firms.

³⁹ The Industry Classification Benchmark is “a detailed and comprehensive structure for sector and industry analysis, facilitating the comparison of companies across four levels of classification and national boundaries. The classification system allocates companies to the Subsector whose definition closely describes the nature of its business as determined from the source of its revenue or the source of the majority of its revenue where available” (FTSE Russell, 2018, p. 3).

⁴⁰ Previous researchers use 2-digit SIC codes (Standard Industry Classification) to describe the industries classification, such as Alhadab et al. (2016), Alhadab et al. (2015) and Ali and Zhang (2015). In line with these studies, I use 2-digit ICB codes “Supersector” instead of SIC code, as the latter is not available in both the DataStream and Bloomberg databases.

Table 3.2 Industries classification

Industry classification	Number of firms
Automobiles & Parts	1
Basic Resources	29
Chemicals	7
Construction & Materials	7
Food & Beverage	18
Health Care	16
Industrial Goods & Services	73
Media	17
Oil & Gas	24
Personal & Household Goods	13
Retail	34
Technology	20
Telecommunications	9
Travel & Leisure	37
Utilities	10
Total	315

After identifying the firms, I extract the earnings conference calls' transcripts for these firms. However, the earnings conference call transcript is unavailable for some firms. Additionally, many firms do not show the earnings conference call transcript for all years. Therefore, I use unbalanced data in the analysis; if I applied the balanced data analysis, the sample size would be greatly reduced. Figure 3.1 provides more detail about the availability of earnings conference calls' transcripts for firms used in the sample for each year (2010 – 2015). Table 3.3 describes the collection process of earnings conference calls' transcripts.⁴¹

⁴¹ The sample sizes (number of firm-year observations) vary across different tests specifications and are noted in the results section in the table of each test.

Figure 3.1 Number of firms in the sample which their earnings conference calls' transcripts are available

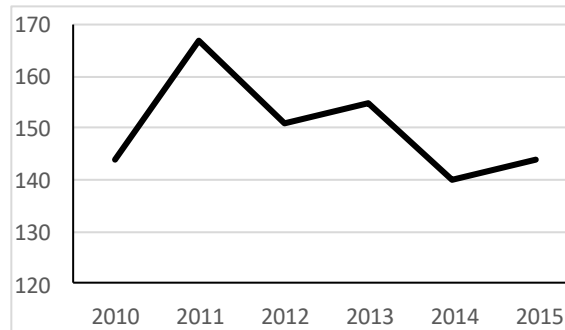


Table 3.3 The collection process of earnings conference calls' transcripts

Number of earnings conference calls' transcripts available from 2010-2015 for 315 firms	955
Less: number of transcripts that are wrongly divided by python software	-2
Less: number of earnings conference calls' transcripts that have wrong format which lead to be wrongly divided	-52
Number of earnings conference calls' transcripts before applying the abnormal tone regression	901
Less: firm-year observations with unavailable financial data for tone model	-61
Number of firm-year observations for abnormal tone in earnings conference calls' transcripts	840

The annual earnings conference call's transcript of each firm for each year (txt file) is obtained from Thomson Reuters database. The financial data needed for this study is collected from Bloomberg database.⁴² I also collect the monthly total return index from DataStream database in order to derive the monthly stock returns.⁴³

3.3.2 Variables

3.3.2.1 Tone in earnings conference call

There are different methods that have been used in previous research to derive qualitative information of narrative disclosure, such as readability level (Li, 2008; Hsieh and Hui, 2011), self-reference bias (Larcker and Zakolyukina, 2012) and optimistic versus pessimistic tone

⁴² I collect the data firm by firm manually from Bloomberg database, as firms have different end accounting period date. I do not need all firms' data at a specific date, but I need the data for each firm's accounting period; since the earnings conference call of each firm discusses the progress occurred in each firm's accounting period.

⁴³ See the next section 3.3.2 for more details about the variables' calculation.

(Frankel et al., 2010; Demers and Vega, 2011; Davis et al., 2012). The latter “tone” is the focus of this study. Few studies investigate the tone in different venues of narrative disclosure, such as financial reporting in financial statements (Iatridis, 2016), sustainability reports (Barkemeyer et al., 2014), corporate environmental disclosure (Cho et al., 2010), forward-looking statements in corporate filings (Li, 2010b; Schleicher and Walker, 2010), MD&A section of 10-K/10-Q (Feldman et al., 2010; Davis and Tama-Sweet, 2012), CEO letters (Boudt and Thewissen, 2018), news media articles (Tetlock, 2007), earnings press releases (Demers and Vega, 2011; Davis et al. 2012; Huang et al., 2014; Boudt et al., 2018), and earnings conference calls (Frankel et al., 2010; Price et al., 2012; Davis et al., 2015; Allee and DeAngelis, 2015; Brockman et al., 2015; Blau et al., 2015; Chen et al., 2018). In this study, the venue used to analyse tone is the annual earnings conference call.⁴⁴

Details of different tone measurements shown in the current literature are discussed in Chapter 2, Section 2.3.2.

Loughran and McDonald (2011) state that the classification of words designed for general purposes are not suitable to evaluate a firm’s communications. By using a huge sample of 10-Ks, they provide evidence that several words considered as negative words in the Harvard Psychological Dictionary cannot naturally be classified as negative words in financial reporting. They develop an alternative word list which is more convenient to express positive/optimistic and negative/pessimistic tone in financial reporting communications (Huang et al., 2014). Since this study focuses on managers’ words, it employs Loughran and McDonald (2011) word list, which is more suitable in financial reporting, to derive the frequency of positive versus negative managers’ words presented in the annual earnings

⁴⁴ The reasons for using the earnings conference call rather than other management disclosure venues are discussed earlier in Section 3.1 (the introduction of this chapter).

conference call.⁴⁵ Following Brockman et al. (2015), Blau et al. (2015) and Chen et al. (2018), who recently study the tone in earnings conference call, the variable TONE is constructed which represents the difference between the frequency of positive and negative words spoken by the managers in earnings conference calls scaled by the summation between them. For robustness check, I also use management pessimistic tone which is the negative words spoken by managers scaled by the summation between managers' positive and negative words, based on Loughran and McDonald (2011) word lists, as an alternative measure of tone.⁴⁶

As discussed earlier in this chapter, earnings conference call contains two parts (presentation and Q&A). For validity purposes, I test the hypotheses in three analyses on TONE in earnings conference calls. Firstly, I use managers' tone only in the presentation part (TONE_Pres). Secondly, I use manager's tone only in Q&A part (TONE_Q&A). Lastly, I do the tests on manager's tone in both presentation and Q&A parts (TONE_Both). PYTHON software is used to exclude words that do not come from managers in each earnings conference call transcript.⁴⁷ Consistent with Henry (2006, 2008) and Yekini et al. (2016), the textual-analysis software, DICTION, is employed in this study to obtain the number of words frequencies for managers' words in presentation and Q&A parts based on Loughran and McDonald (2011) word list.^{48, 49}

⁴⁵ Appendix C describes the words' list developed by Loughran and McDonald (2011).

⁴⁶ The results of robustness tests are shown in section 3.5 of this chapter.

⁴⁷ Appendix D explains the process of using PYTHON software to obtain only managers' words from the earnings conference call transcript.

⁴⁸ DICTION software has the ability to produce number of words frequencies (for a .txt file) based on the predetermined word list.

⁴⁹ Appendix G explains the validity of using DICTION to count the positive and negative words based on Loughran and McDonald (2011) words' list.

3.3.2.2 Firm's current and future performance

This study uses earnings before extraordinary items divided by lagged total assets (ERN), namely return on asset, as a measure of current financial performance. It is a common measure which is extensively used in the literature (Huang et al., 2014; Davis et al., 2015; Frankel et al., 2010). For future financial performance, which is needed to test H2, this study uses next year ($t+1$)'s earnings before extraordinary items divided by lagged total assets (ERN_{t+1}) following Huang et al. (2014). For the robustness check, it also uses return on sales, which is operating profit divided by sales revenue as an alternative measure of financial performance.⁵⁰

3.3.2.3 Control variables

A series of control variables that may affect financial performance and/or the level of tone in the earnings conference call are used to test the hypotheses (H1 and H2). The control variables are derived from previous research, such as Lo et al. (2017), Huang et al. (2014), Davis et al. (2015), Davis and Tama-Sweet (2012) and Li (2010b). Firstly, this paper includes discretionary accrual (DA) variable, which is an important variable in this context as previous researchers have found that discretionary accrual is significantly associated with financial performance (Healy and Wahlen, 1999; Dechow and Skinner, 2000; Fields et al., 2001).⁵¹ Following Huang et al. (2014), this paper also includes annual stock returns (RET) and book-to-market ratio (BTM) variables to capture the current forward-looking property of market information that may impact the management tone level. Size and loss are also included, which may affect the level of tone and financial performance (Davis et al., 2015; Huang et al., 2014; Li, 2010b). This research also adds the volatility of stock returns (STD_RET) and

⁵⁰ The results of robustness tests are shown in section 3.5 of this chapter.

⁵¹ See Appendix E for discretionary accruals (DA) calculation.

the volatility of earnings (ERN_volatility) to measure the environmental operating and business risk of the firm.

The sample includes all non-financial firms classified under FTSE 350 in any year during the period from 2010 to 2015. For example, if a non-financial firm is classified under FTSE 350 only in 2010, this firm has been taken in the sample. Therefore, a dummy variable (FTSE_350) is constructed, which equals one if the firm is classified under the FTSE 350 list and zero if it is not. I use this dummy variable when I test the hypotheses, because this may affect the tone; it might be argued that firms that dropped out from FTSE 350 are more likely to provide more positive tone.

Year dummies are also used to control for variation in the tone and performance level over time. All control variables are defined below in the empirical model section. I show a discussion in the results section for the variables that present significant explanatory power.

3.3.3 Empirical model

The earnings conference call of each firm discusses the firm's progress occurred in each firm's accounting period. It takes place after issuing the financial data. This means that the managerial tone data timely occurs after the data of the current financial performance. It is important to mention that the past event may affect the future event, but there is no way that the future event affects past event. Therefore, to test the association between current financial performance and managerial tone in the earnings conference call (H1), the managerial tone variable must be the dependent variable and the current financial performance must be the independent variable. This has also been done in Li's (2010b) study, which provides insight on the association between tone management and financial performance. In other words, the current financial performance may affect managerial tone, whereas there is no way that managerial tone affects the current financial performance. As discussed above, following previous studies, such as Lo et al. (2017), Huang et al. (2014), Davis et al. (2015), Davis and

Tama-Sweet (2012) and Li (2010b), I use a set of control variables which may affect managerial tone or financial performance.⁵² The following regression model is used to test the association between current financial performance and managerial tone in the earnings conference call (H1):

$$\text{TONE}_{it} = \alpha_0 + \alpha_1 \text{ERN}_{it} + \alpha_2 \text{DA}_{it} + \alpha_3 \text{RET}_{it} + \alpha_4 \text{Size}_{it} + \alpha_5 \text{BTM}_{it} + \alpha_6 \text{STD_RET}_{it} + \alpha_7 \text{ERN_volatility}_{it} + \alpha_8 \text{Loss}_{it} + \alpha_9 \text{FTSE_350}_{it} + \text{Year}_t + \varepsilon_{it} \dots\dots\dots(1)$$

However, following Li's (2010b) study, when future financial performance is used to test the association between managerial tone and financial performance (H2), the managerial tone variable must be the independent variable and the future financial performance must be the dependent variable. In other words, the managerial tone may predict future financial performance, whereas it does not make any sense that future financial performance affects the managerial tone, since managerial tone is occurred before financial performance in this case. Similar to H1, I use the same control variables discussed above, which may affect managerial tone or financial performance. The following regression model is applied to test the association between managerial tone in the earnings conference call and future financial performance (H2):

$$\text{ERN}_{it+1} = \alpha_0 + \alpha_1 \text{TONE}_{it} + \alpha_2 \text{DA}_{it} + \alpha_3 \text{ERN}_{it} + \alpha_4 \text{RET}_{it} + \alpha_5 \text{Size}_{it} + \alpha_6 \text{BTM}_{it} + \alpha_7 \text{STD_RET}_{it} + \alpha_8 \text{ERN_volatility}_{it} + \alpha_9 \text{Loss}_{it} + \alpha_{10} \text{FTSE_350}_{it} + \text{Year}_t + \varepsilon_{it} \dots\dots\dots(2)$$

Where;

TONE_{it}: is management positive tone measured by calculating the difference between the positive and negative words spoken by managers in earnings conference call, in the analyses I use different places of management tone in the call, scaled by the summation between them, based on word lists from Loughran and McDonald (2011).⁵³

⁵² More details about the reasons why these control variables have been chosen are shown in Section 3.3.2.3.

⁵³ See Section 3.3.2.1 in this chapter for more details.

DA_{it} : is discretionary accruals measured by modified Jones model. See Appendix E for more details.

ERN_{it} : earnings before extraordinary items scaled by lagged total assets.

ERN_{it+1} : earnings before extraordinary items in year t+1 scaled by total assets in year t.

RET_{it} : annual stock return calculated by this formula $((P_t - P_{t-1}) + Div_t) / P_{t-1}$, where:

P_t : Stock price in year t.

P_{t-1} : Stock price in year t-1.

Div_t : Dividends per share in year t.

Size_{it} : logarithm of market value of equity at the end of the fiscal year.

BTM_{it} : book-to-market ratio measured at the end of the fiscal year.

STD_RET_{it} : standard deviation of monthly stock returns over the fiscal year (monthly stock returns is obtained by calculating the growth in monthly total return index, which has been collected from DataStream database).

ERN_volatility_{it} : standard deviation of ERN calculated over the last five years, with at least three years of data required.

Loss_{it} : an indicator variable set to 1, when ERN is negative, and is 0 otherwise.

FTSE_350_{it} : is an indicator variable set equal to one if the firm is classified under FTSE 350 list, and zero if it is not.⁵⁴

Year_t : Year Dummies (2010, 2011, 2012, 2013, 2014 and 2015).

Following previous studies of managerial tone in earnings conference calls, such as Chen et al. (2018), Davis et al. (2015) and Matsumoto et al. (2011), all continuous variables are winsorized at the 1 percent level to minimize the effects of outliers. This paper applies panel fixed effect regressions for firm and year for equations (1 & 2) based on the significant result of Hausman test. Following prior research in tone literature, the standard error is clustered by firm under each fixed effect regression. However, the pool regression is also applied if the Breusch-Pagan test result is insignificant.^{55,56}

Having discussed the data, measurement of each variable and models used in the study, the next section looks at the summary statistics of the variables.

⁵⁴ More details about this variable are explained in Section 3.3.2.3.

⁵⁵ The results of Breusch-Pagan test and Hausman test are reported in the results' tables in Section 3.4.

⁵⁶ Industry dummies variables are included in all regressions, but are automatically deleted when I apply the fixed effect regression test.

3.3.4 Summary statistics

3.3.4.1 Descriptive statistics

Table 3.4 presents summary descriptive statistics for the variables used to test the hypotheses.

The results reveal that mean and median for the management tone in presentation part of the call are (0.437) and (0.444) respectively, and in Q&A part are (0.139) and (0.143) respectively. In the whole call, the mean and median of management tone are (0.340) and (0.343), respectively. These values indicate that in any part of the earnings conference call, on average, managers' tone in the sample is relatively positive. More specifically, managers in presentation session of the call speak more positively than in the Q&A session. This is reasonable because the presentation session is well-prepared by managers rather than in Q&A where managers need to respond based on analysts' questions. This result is in the line with that in Davis et al. (2015) who study the tone in earning conference calls in the US, where their average of net positive words in the call based on Loughran and McDonald (2011) wordlists is (0.0059). Similarly, Huang et al. (2014) report a positive average of tone in the annual press release in the US with value (0.0043). In contrast, Loughran and McDonald (2011) show a higher average for negative words than positive words in 10-K filings for US firms. Overall, the descriptive results of tone are higher than those in previous studies, suggesting that managers in UK earnings conference calls highly engage in tone management.

The descriptive results for future financial performance (ERN_{t+1}) are mostly same as current financial performance (ERN). This is because this paper uses next year financial performance ($t+1$) as a proxy for future financial performance in current year (t). The descriptive results for all other variables are mostly similar to those in previous research.

Table 3.4 Descriptive statistics

Variable	N	Minimum	Mean	Median	Maximum	Range	Std. Dev.
TONE_Pres	901	-0.137	0.437	0.444	0.824	0.961	0.195
TONE_Q&A	900	-0.471	0.139	0.143	0.660	1.131	0.232
TONE_Both	901	-0.170	0.340	0.343	0.718	0.888	0.179
ERN	1745	-0.231	0.065	0.058	0.397	0.628	0.088
ERN _{t+1}	1732	-0.249	0.062	0.058	0.378	0.628	0.090
DA	1694	-3.622	0.457	0.078	8.921	12.543	1.487
RET	1618	-0.798	0.186	0.142	2.039	2.838	0.447
Size	1659	1.771	3.214	3.106	4.999	3.228	0.644
BTM	1657	-0.110	0.566	0.388	4.470	4.581	0.625
STD_RET	1743	0.000	0.084	0.074	0.262	0.262	0.045
ERN_volatility	1767	0.004	0.053	0.031	0.467	0.463	0.068
Loss	1745	0.000	0.140	0.000	1.000	1.000	0.348
FTSE_350	1890	0.000	0.752	1.000	1.000	1.000	0.432

TONE_Pres is the optimistic management tone in the presentation part of earnings conference call measured by calculating the difference between the positive and negative words spoken by managers in the presentation part of earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011). **TONE_Q&A** is the optimistic management tone in the Q&A part of earnings conference call measured by calculating the difference between the positive and negative words spoken by managers in the Q&A part of the earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011). **TONE_Both** is the optimistic management tone in both presentation and Q&A parts of the earnings conference call measured by calculating the difference between the positive and negative managers' words in both presentation and Q&A parts of the earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011). All other variables are described in Section 3.3.3. All continuous variables are winsorized at a 1% level.

3.3.4.2 Correlation analysis

Table 3.5 shows Pearson correlation for the variables used in this study. In any section in the earnings conference call, management tone is significantly and positively correlated with both firm's current and future performance at (p-value <0.01) with largest correlation coefficient values to the presentation part in the call (0.3101) and (0.3143), respectively.⁵⁷ This supports the first and the second hypotheses. This indicates that firms with strong financial performance speak, on average, more optimistically in the earnings conference call in order to provide signals to the audience about their financial performance. It is clearly evident from the table that management tone is significantly correlated at (p-value <0.01)

⁵⁷ The correlation between tone in earnings conference calls and current earnings is consistent with Li (2010b), as he shows that management tone in MD&A of the corporate filing is positively correlated with current earnings with value (0.142) of a Pearson correlation coefficient.

with all variables except for discretionary accruals and size. Additionally, financial performance is significantly correlated at (p-value <0.01) with all variables except for earnings volatility variable. Although most of the independent variables are correlated, but the highest correlation coefficient is less than (0.35). This confirms that there is no multicollinearity problem in the analyses.

Table 3.5 Pearson correlation

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) TONE_Pres	1.0000												
(2) TONE_Q&A	0.4538*	1.0000											
(3) TONE_Both	0.9049*	0.7215*	1.0000										
(4) ERN	0.3101*	0.1862*	0.2804*	1.0000									
(5) ERN _{t+1}	0.3143*	0.1869*	0.2923*	0.6566*	1.0000								
(6) DA	0.0611	0.0289	0.0621	0.1086*	0.0728*	1.0000							
(7) RET	0.2465*	0.1085*	0.2302*	0.2832*	0.3230*	0.0288	1.0000						
(8) Size	0.0711	0.0147	0.0083	0.1288*	0.0762*	-0.1420*	-0.0059	1.0000					
(9) BTM	-0.2020*	-0.1197*	-0.1896*	-0.2974*	-0.3174*	-0.0437	-0.1759*	-0.3198*	1.0000				
(10) STD_RET	-0.2345*	-0.1627*	-0.2135*	-0.2550*	-0.2498*	0.0598	-0.1149*	-0.3635*	0.2524*	1.0000			
(11) ERN_volatility	-0.1238*	-0.0788	-0.1284*	-0.0086	0.0008	0.1490*	-0.0615	-0.1308*	0.0327	0.3421*	1.0000		
(12) Loss	-0.2411*	-0.1687*	-0.2427*	-0.6008*	-0.3750*	0.0643*	-0.2272*	-0.1503*	0.2113*	0.3490*	0.2345*	1.0000	
(13) FTSE 350	0.1451*	0.0584	0.1104*	0.2275*	0.1581*	-0.1419*	0.1116*	0.4552*	-0.1902*	-0.1780*	-0.1348*	-0.2520*	1.0000

TONE_Pres is the optimistic management tone in the presentation part of earnings conference call measured by calculating the difference between the positive and negative managers' words in the presentation part of earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011). **TONE_Q&A** is the optimistic management tone in the Q&A part of earnings conference call measured by calculating the difference between the positive and negative words spoken by managers in the Q&A part of the earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011). **TONE_Both** is the optimistic management tone in both presentation and Q&A parts of the earnings conference call measured by calculating the difference between the positive and negative managers' words in both presentation and Q&A parts of the earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011). All other variables are described in Subsection 3.3.3. * indicates the statistical significance at the 1% level.

3.4 Empirical results

3.4.1 Current performance and management tone (H1)

If managers during the earnings conference call speak positively in order to obscure or mask the financial performance, then the regression results have to accept the first hypothesis by providing negative sign and significant result for the coefficient of the current financial performance. Table 3.6 presents panel fixed effect regression results for H1 in different parts of the call. The first column presents the results for management tone used only in the presentation session. The second column presents the results for management tone used only in the Q&A session. The third column reports the results for management tone used in both presentation and Q&A sessions. The results are similar in the three columns. The coefficients on ERN in the first, second and third columns are 0.438, 0.437 and 0.364, with p-value of 0.005, 0.014 and 0.007, respectively. Based on these results, H1 has to be rejected; since the coefficients for current financial performance are highly significant, but the sign of each coefficient is positive. This indicates that tone is positively related to current performance. This confirms the correlation results in Table 3.5. This suggests that when a firm is performing well, they are more confident about their future and would like to signal it for the investors by discussing more positive tone in earnings conference call.

The results are in line with the finding in Li (2010b), that tone in forward-looking statements in MD&A is positively associated with current earnings. However, this research uses different measure of tone. In Li (2010b), the Bayesian learning algorithm is used to measure tone, whereas this research relies on the wordlists of Loughran and McDonald (2011) to derive the tone which is more suitable for corporate reporting studies. Consequently, the results support the evidence in Li (2010b) that managerial tone is informative about financial performance.

On the other hand, the results are inconsistent with Li (2008), Cho et al. (2010) and Barkemeyer et al. (2014) who argue that managerial tone is used to obfuscate the bad results of current performance (i.e., impression management). This could be because they focus on different settings of firms' performance rather than current earnings. For example, Li (2008) focuses on earnings persistent, Cho et al. (2010) focus on environmental performance and Barkemeyer et al. (2014) focus on corporate sustainability performance. Another reason for the difference in their results could be that they apply different communication venues other than earnings conference calls.⁵⁸

This paper also finds that management tone during earnings conference calls is more positive when the firm has less earnings volatile, which does not support the obfuscation perspective. Overall, the first hypothesis is rejected. The results show that current financial performance is reflected in managerial tone during the earnings conference calls. This can be theoretically explained based on signalling theory, as managerial tone in this case is used as signals to reflect current performance in order to reduce the information asymmetry between managers and stakeholders.

⁵⁸ For more details about these studies, see Section 2.4.3/1, Chapter 2.

Table 3.6 Current financial performance and managerial tone in earnings conference calls

Variable	Dependent variable: Management Tone					
	TONE_Pres		TONE_Q&A		TONE_Both	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
ERN	0.438***	0.005	0.437**	0.014	0.364***	0.007
DA	-0.010	0.197	-0.012	0.254	-0.01	0.171
RET	0.023	0.202	-0.011	0.596	0.011	0.462
Size	0.118*	0.052	0.089	0.260	0.097*	0.076
BTM	0.014	0.556	0.003	0.937	0.008	0.746
STD_RET	-0.503**	0.033	-0.087	0.771	-0.306	0.136
ERN_volatility	-0.412**	0.048	-0.604**	0.012	-0.536***	0.001
Loss	-0.006	0.788	0.011	0.731	-0.003	0.897
FTSE_350	-0.058	0.115	-0.067	0.142	-0.054*	0.084
_cons	0.089	0.676	-0.104	0.712	0.066	0.731
Year	Included		Included		Included	
Number of observations	852		851		852	
Number of groups	204		204		204	
Fstat (Value)	5.79***		2.98***		6.52***	
Mean VIF	4.44		4.44		4.44	
Hausman test-Prob>chi2 (%)	0.03		1.33		0	
Breusch-Pagan LM test-Prob>chi2 (%)	0		0		0	
R-squared (%)	14.45		5.94		13.04	

The table presents the panel fixed effect regression results for the association between current financial performance and management tone in earnings conference call (equation 1). All variables are described in subsection 3.3.3. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level.

In term of the economic significance of H1, the results show that one change in standard deviation in current financial performance will cause 0.039 changes in management tone in the presentation session of the earnings conference call. However, in the Q&A session of earnings conference call the economic significance become slightly lower, where the results report that one change in standard deviation in current financial performance will cause 0.038 changes in management tone in the Q&A session of the earnings conference call. When both sessions are applied, the results show that one

changes of standard deviation in current financial performance will cause 0.032 changes in management tone in the earnings conference call.

The following section shows the result of testing the second hypothesis (H2).

3.4.2 Management tone and future performance (H2)

In line with previous researchers, such as Li (2010b), I expect that managers provide tone as signals of future performance. Table 3.7 presents the panel fixed effect regression results for H2. The results support the prediction (H2), where the coefficient for management positive tone in any section of the call is significant and the sign is positive. The coefficients of management tone in presentation, Q&A, and both sessions are (0.052), (0.026) and (0.061) with p-value of 0.002, 0.058 and 0.001, respectively. Based on these results, this paper provides evidence that firms that provide more positive tone in the call have higher future performance. This indicates that managers use tone in their speaking during the call in order to signal information about their future performance. The results are consistent with some of previous studies (e.g., Li, 2010b; Davis et al., 2012; Demers and Vega, 2011; Patelli and Pedrini, 2014; Boudt and Thewissen, 2018), who focus on different venues of management communications rather than earnings conference call. These results are in line with economic theories, in particular signalling theory suggesting that as managers have more information than users, they signal information about future performance through tone of words in their speaking during the earnings conference call, and this accordingly will help users in predicting future earnings.

In contrast, the results are inconsistent with Huang et al. (2014), Schleicher and Walker (2010) and Guillamon-Saorin et al. (2017), who argue that managerial tone is used to misinform users about future performance (i.e., impression management). This could be

mainly because their focus is on different communication venues other than earnings conference call.

Regarding the control variables used in the regression model, the findings report that firms that have higher stock returns have higher future performance, and firms whose market valuation is poorer relative to its book value have lower future performance. These control variables results are mostly consistent with previous research, such as Huang et al. (2014) and Li (2010b).

In terms of the economic significance of H2, the results show that one change in the standard deviation in management tone in the presentation session of the earnings conference call will cause 0.010 changes in next year financial performance. However, in the Q&A session of earnings conference call the economic significance become lower; the results report that one changes of standard deviation in management tone in the Q&A session of the earnings conference call will cause 0.006 changes in subsequent year financial performance. Where both sessions are applied, the results show that one changes of standard deviation in management tone in the earnings conference call will cause 0.011 changes in next year's earnings.

However, it can be seen from Table 3.7 that the p-value of Breusch-Pagan test is insignificant in each part of the call with values (14.78%), (14.11%) and (12.98%) in presentation, Q&A, and both sessions respectively, which suggest applying pool regression rather than fixed effect regression. Therefore, I apply the pool regression in this case (equation 2) and the results are shown in Table 3.8. The results are quietly similar to those in Table 3.7. Overall, the results confirm that managerial tone in earnings conference calls is informative and assists in predicting future financial performance.

Table 3.7 Managerial tone in earnings conference call and future financial performance

Variable	Dependent variable: Future performance (ERN_{t+1})					
	TONE_Pres		TONE_Q&A		TONE_Both	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
TONE	0.052***	0.002	0.026*	0.058	0.061***	0.001
DA	0.010**	0.033	0.010**	0.036	0.010**	0.031
ERN	0.107	0.214	0.116	0.167	0.107	0.212
RET	0.014**	0.018	0.016***	0.008	0.015**	0.013
Size	0.008	0.708	0.013	0.554	0.008	0.694
BTM	-0.024***	0.002	-0.024***	0.002	-0.024***	0.002
STD_RET	-0.091	0.402	-0.112	0.311	-0.098	0.365
ERN_volatility	0.059	0.730	0.053	0.761	0.070	0.688
Loss	0.008	0.555	0.007	0.595	0.007	0.562
FTSE_350	-0.002	0.834	-0.005	0.691	-0.003	0.821
_cons	0.0001	0.999	0.004	0.957	0.0005	0.995
Year	Included		Included		Included	
Number of observations	838		837		838	
Number of groups	203		203		203	
Fstat (Value)	9.26***		7.13***		9.20***	
Mean VIF	4.79		4.35		4.65	
Hausman test-Prob>chi2 (%)	0		0		0	
Breusch-Pagan LM test-Prob>chi2 (%)	14.78		14.11		12.98	
R-squared (%)	19.19		18.48		19.31	

The table shows the panel fixed effect regression results for the association between management tone in earnings conference call and future financial performance (equation 2). All variables are described in Subsection 3.3.3. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level.

Table 3.8 Managerial tone in earnings conference call and future financial performance by applying pool regression

Variable	Dependent variable: Future performance (ERN_{t+1})					
	TONE_Pres		TONE_Q&A		TONE_Both	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
TONE	0.044***	0.001	0.019*	0.069	0.046***	0.001
DA	0.005	0.196	0.005	0.183	0.004	0.208
ERN	0.455***	0	0.472***	0	0.458***	0
RET	0.02***	0	0.022***	0	0.021***	0
Size	0.001	0.806	0	0.918	0.002	0.703
BTM	-0.013***	0.002	-0.015***	0.001	-0.013***	0.002
STD_RET	-0.134	0.109	-0.141*	0.095	-0.135	0.108
ERN_volatility	-0.007	0.885	-0.015	0.774	-0.006	0.907
Loss	0.004	0.69	0.005	0.656	0.005	0.651
FTSE_350	0	0.974	0.001	0.935	0.001	0.946
_cons	0.032	0.134	0.049**	0.017	0.032	0.127
Year	Included		Included		Included	
Industry	Included		Included		Included	
Number of observations	838		837		838	
F stat (value)	16.67***		16.34***		16.87***	
Mean VIF	1.47		1.46		1.47	
R-squared (%)	43.63		42.94		43.52	

This table shows the pool regression results for the association between management tone in earnings conference call and future financial performance (equation 2). All variables are described in subsection 3.3.3. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All continuous variables are winsorized at 1% level.

3.5 Additional analyses and robustness checks

In this section, I first offer additional analyses on the association between tone and financial performance. Then, I apply several robustness checks on the original results.

3.5.1 Additional analyses

I add more tests to the main tests. First, I repeat the original analyses (H1 and H2) on two different groups of firms separately, namely, group of firms with poor performance and group of firms with strong performance, to see which group has stronger results. Second, I test the association between audience's tone and future performance to see whether audience tone also signal information about future performance.

3.5.1.1 Poor performance firms and strong performance

I repeat the analyses for H1, and H2 after dividing the sample into two groups. Group includes firms with strong performance and group has firms with poor performance. I use the median of earnings before extraordinary items scaled by lagged total assets of all firms one time (ERN), and the median of earnings per share (EPS) in another time to classify the firms whether it is in poor or strong performance group. I apply the fixed effect regression with using the same models applied in the main analyses of this chapter. The results of the two groups are shown in Tables 3.9 and 3.10 below.

Table 3.9 Comparison between poor performance firms and strong performance firms in testing H1

Table 3.10 Comparison between poor performance firms and strong performance firms in testing H2

Dependent variable is management tone (Tone) and independent variable is current performance (ERN_t)	Group_Poor Performance		Group_Strong Performance	
Basis used to determine the group	Median of ERN	Median of EPS	Median of ERN	Median of EPS
Presentation session	Sig** (+)	Sig*** (+)	Sig*** (+)	
Q&A session		Sig* (+)		
Both sessions	Sig** (+)	Sig*** (+)	Sig*** (+)	

Fixed effect regression is applied in each case in this table to test H1. Sig means that the association is significant. (+) indicates that dependent and independent variable is positively associated. ***,** and * denotes statistical significance at the 1%, 5% and 10% levels respectively. The empty cell indicates that the association is insignificant.

Dependent variable is future performance (ERN_{t+1}) and independent variable is management tone (Tone)	Group_Poor Performance		Group_Strong Performance	
Basis used to determine the group	Median of ERN	Median of EPS	Median of ERN	Median of EPS
Presentation session	Sig** (+)	Sig*** (+)		
Q&A session	Sig* (+)	Sig** (+)		
Both sessions	Sig** (+)	Sig*** (+)	Sig** (+)	

Fixed effect regression is applied in each case in this table to test H2. Sig means that the association is significant. (+) indicates that dependent and independent variable is positively associated. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. The empty cell indicates that the association is insignificant.

It is clearly evident from Tables 3.9 and 3.10 that the results are more supported when the poor group is applied. This indicates that firms that have poor performance are more likely to signal information about financial performance than firms that have strong performance through the managerial tone in the earnings conference call.

3.5.1.2 Audience's tone and future performance

I test the association between audience tone in earnings conference calls and future performance using the following pool regression model (equation 3).⁵⁹

⁵⁹ I apply pool regression rather than fixed effect regression, because the result of Breusch-Pagan test is insignificant which suggests to use pool regression.

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$$\begin{aligned} \text{ERN}_{it+1} = & \alpha_0 + \alpha_1 \text{Audience tone}_{it} + \alpha_2 \text{DA}_{it} + \alpha_3 \text{ERN}_{it} + \alpha_4 \text{RET}_{it} + \alpha_5 \text{Size}_{it} + \alpha_6 \\ & \text{BTM}_{it} + \alpha_7 \text{STD_RET}_{it} + \alpha_8 \text{ERN_volatility}_{it} + \alpha_9 \text{Loss}_{it} + \alpha_{10} \text{FTSE_350}_{it} \\ & + \text{Year}_t + \text{Industry}_i + \varepsilon_{it} \quad \dots\dots\dots(3) \end{aligned}$$

Table 3.11 presents the result. The coefficient of audience tone is (0.022) with p-value of (0.018). This indicates that future performance is positively associated with audience tone, suggesting that audience tone decreases information asymmetry between managers and users by signalling information about future performance. In conclusion, audience tone is in line with managerial tone in signalling information to help users to predict future earnings.

Table 3.11 Audience tone in earnings conference calls and financial performance

Variable	Dependent variable: Future performance (ERN _{t+1})			
	Coefficient	p-Value	Robust Std. Err.	t-Value
Audience's Tone	0.022**	0.018	0.009	2.37
DA	0.005	0.197	0.004	1.29
ERN	0.483***	0.000	0.058	8.33
RET	0.021***	0.000	0.006	3.65
Size	0.001	0.815	0.004	0.23
BTM	-0.015***	0.001	0.004	-3.40
STD_RET	-0.134	0.114	0.085	-1.58
ERN_volatility	-0.026	0.611	0.052	-0.51
Loss	0.006	0.576	0.011	0.56
FTSE_350	0.002	0.890	0.011	0.14
_cons	0.031	0.145	0.022	1.46
Year	Included			
Industry	Included			
Number of observations	834			
F stat (value)	16.14***			
Mean VIF	1.46			
R-squared (%)	43.13			

The table shows the pool regression results for the association between audience tone in earnings conference calls and financial performance. All variables are described in Appendix F. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All continuous variables are winsorized at the 1% level.

3.5.2 Robustness checks

For robustness checks, I use an alternative measure of firm's financial performance measure used in the main analysis. I employ return on sales, which is earnings before extra-ordinary item divided by sales revenues for firm *i* in year *t*, as a measure of current financial performance. Table 3.12 reports the results of the panel fixed effect regression for the association between current financial performance and management tone in the earnings conference call (equation 1) by using return on sales as a measure of current financial performance. The results are consistent with the original results in case when Q&A is applied, as the coefficient of ROS in this case is (0.188) and the significant level is at 5%. This indicates that there is a positive association between current financial performance and management tone in Q&A session. In addition, in

cases when both presentation and Q&A sessions are applied, the result is also significant but only at the 10% level. However, Table 3.12 shows that there is no association between financial performance and management tone provided in the presentation session of the call. Overall, in any session applied, there is no evidence that financial performance is negatively associated with management tone. This leads the author to reject the obfuscation perspective in explaining tone. This is in line with the original results overall.

Table 3.12 Robustness tests' results of H1 using return on sales (ROS) as a measure of current performance

Variable	Dependent variable: Management Tone					
	TONE_Pres		TONE_Q&A		TONE_Both	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
ROS	0.061	0.401	0.188**	0.019	0.111*	0.059
DA	-0.011	0.126	-0.012	0.222	-0.01	0.121
RET	0.026	0.169	-0.01	0.633	0.013	0.404
Size	0.159**	0.012	0.104	0.179	0.119**	0.030
BTM	0.017	0.472	0.005	0.892	0.01	0.677
STD_RET	-0.5**	0.039	0.029	0.924	-0.253	0.229
ERN_volatility	-0.473**	0.028	-0.627***	0.008	-0.568***	0.001
Loss	-0.027	0.243	0	0.989	-0.015	0.474
FTSE_350	-0.062*	0.085	-0.073	0.118	-0.058*	0.063
_cons	-0.026	0.904	-0.145	0.601	0.006	0.977
Year	Included		Included		Included	
Number of observations	851		850		851	
R-squared (%)	12.81		5.82		12.08	

This table shows the robustness tests' results of the association between management tone in earnings conference call and financial performance (equation 1) by applying panel fixed regression and using return on sales (ROS) as a measure of current performance. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. ROS: namely is return on sales, which is earnings before extra-ordinary item divided by sales revenues. All other variables are described in Section 3.3.3.

As a robustness check of the main result for H2, I use future return on sales (i.e., next year earnings before extra-ordinary item divided by next year sales revenues for firm i in year t) as an alternative measure of firm's future financial performance measure used in the main analysis. Table 3.13 reports the results of the panel fixed effect regression for the association between management tone in the earnings conference call and future financial performance (equation 2) by using return on sales as a measure of financial performance. The results are mostly similar to the main results except in case when only Q&A is applied. More clearly, the table shows that there is no association between management tone in Q&A session of the earnings conference call and future financial performance. This may be attributed to the fact that the managers' words in this session rely on analysts' or audience's questions. This is confirmed by the descriptive results in

Table 3.4 where managerial tone in Q&A session is significantly less than tone in presentation session. The mean and median for the management tone in Q&A session are (0.139) and (0.143) respectively, whereas in presentation session they are (0.340) and (0.343) respectively. This suggests that managers engage less in their tone in Q&A session than in presentation. However, Table 3.13 supports the main results for H2 in cases when presentation session and both the presentation and Q&A sessions are applied. It shows a positive and significant association between managerial tone and future financial performance in these two cases at significant level (5%) and (10%), respectively. Overall, Table 3.13 mostly supports the original results in accepting H2.

Table 3.13 Robustness tests' results of H2 using future return on sales (ROS_{t+1}) as a measure of future performance

Variable	Dependent variable: Future performance (ROS _{t+1})					
	TONE_Pres		TONE_Q&A		TONE_Both	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
TONE	0.067**	0.025	0.020	0.516	0.067*	0.051
DA	0.019***	0.006	0.019***	0.007	0.019***	0.005
ERN	0.069	0.573	0.086	0.484	0.073	0.549
RET	0.019	0.147	0.02	0.108	0.019	0.126
Size	0.012	0.832	0.02	0.721	0.014	0.805
BTM	-0.085***	0.002	-0.085***	0.002	-0.085***	0.002
STD_RET	0.053	0.802	0.027	0.900	0.041	0.848
ERN_volatility	0.394	0.226	0.379	0.252	0.402	0.221
Loss	-0.033	0.259	-0.034	0.243	-0.033	0.254
FTSE_350	-0.038	0.308	-0.041	0.263	-0.038	0.294
_cons	0.0280	0.891	0.029	0.887	0.028	0.891
Year	Included		Included		Included	
Number of observations	837		836		837	
R-squared (%)	17.74		17.30		17.63	

This table presents the robustness tests' results for the association between management tone in earnings conference call and future financial performance (equation 2) by applying panel fixed regression and using future return on sales (ROS_{t+1}) as a measure of future performance. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. ROS_{t+1}: namely is future return on sales, which is next year earnings before extra-ordinary item divided by next year sales revenues. All other variables are described in Section 3.3.3.

I also apply different measure of management tone in testing H1 and H2. I use management pessimistic tone rather than the management tone measure used in the original analysis. The management pessimistic tone is calculated as shown in the following formula based on Loughran and McDonald (2011) word lists:

$$\text{Management pessimistic tone} = \text{Managers' negative words} / (\text{Managers' negative words} + \text{Managers' positive words})^{60}$$

Tables 3.14 and 3.15 show the robustness tests' results for H1 and H2, respectively, when management pessimistic tone measure is used instead of the management tone measure used in the main tests. The results are the same as the main results except for

⁶⁰ This measure of pessimistic tone is cited from Iatridis (2016).

the sign of the coefficients. In Tables 3.14 and 3.15 when management pessimistic tone is applied, each coefficient has the opposite sign of the same coefficient in the main tests. This is because the management pessimistic tone variable focuses on negative words, whereas the management tone variable used in the original tests focuses on the positive words as it considers the difference between positive and negative words. In conclusion, the results in the robustness tests' support H2 (signalling hypothesis), but they do not support H1 (obfuscation hypothesis), which are similar to the main results.

Table 3.14 Robustness tests' results of H1 using management pessimistic tone as a measure of management tone

Variable	Dependent variable: Management Pessimistic Tone					
	TONE_Pres		TONE_Q&A		TONE_Both	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
ERN	-0.219***	0.005	-0.218**	0.014	-0.182***	0.007
DA	0.005	0.197	0.006	0.254	0.005	0.171
RET	-0.012	0.202	0.005	0.596	-0.006	0.462
Size	-0.059*	0.052	-0.045	0.260	-0.049*	0.076
BTM	-0.007	0.556	-0.002	0.937	-0.004	0.746
STD_RET	0.252**	0.033	0.044	0.771	0.153	0.136
ERN_volatility	0.206**	0.048	0.302**	0.012	0.268***	0.001
Loss	0.003	0.788	-0.005	0.731	0.001	0.897
FTSE_350	0.029	0.115	0.034	0.142	0.027*	0.084
_cons	0.456***	0	0.552***	0	0.467***	0
Year	Included		Included		Included	
Number of observations	852		851		852	
R-squared (%)	14.45		5.94		13.04	

This table shows the robustness tests' results for the association between management tone in earnings conference call and financial performance (equation 1) by applying panel fixed regression and using management pessimistic tone as a measure of management tone (dependent variable). ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. Management pessimistic tone: is the negative words spoken by managers in each section scaled by the summation between managers' positive and negative words, based on Loughran and McDonald (2011) word lists. All other variables are described in Section 3.3.3.

Table 3.15 Robustness tests' results of H2 using management pessimistic tone as a measure of management tone

Variable	Dependent variable: Future performance (ERN _{t+1})					
	TONE_Pres		TONE_Q&A		TONE_Both	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
Management Pessimistic Tone	-0.103***	0.002	-0.052*	0.058	-0.122***	0.001
DA	0.010**	0.033	0.010**	0.036	0.010**	0.031
ERN	0.107	0.214	0.116	0.167	0.107	0.212
RET	0.014**	0.018	0.016***	0.008	0.015**	0.013
Size	0.008	0.708	0.013	0.554	0.008	0.694
BTM	-0.024***	0.002	-0.024***	0.002	-0.024***	0.002
STD_RET	-0.091	0.402	-0.112	0.311	-0.098	0.365
ERN_volatility	0.059	0.730	0.053	0.761	0.070	0.688
Loss	0.008	0.555	0.007	0.595	0.007	0.562
FTSE_350	-0.002	0.834	-0.005	0.691	-0.003	0.821
_cons	0.052	0.523	0.03	0.710	0.061	0.458
Year	Included		Included		Included	
Number of observations	838		837		838	
R-squared (%)	19.19		18.48		19.31	

The table shows the robustness tests' results for the association between management tone in earnings conference call and future financial performance (equation 2) by applying panel fixed regression and using management pessimistic tone as a measure of management tone (dependent variable). ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. Management pessimistic tone is the negative words spoken by managers in each section scaled by the summation between managers' positive and negative words, based on Loughran and McDonald (2011) word lists. All other variables are described in Section 3.3.3.

Similar to the original results of H2, the p-value of Breusch-Pagan test is insignificant in each model used in Table 3.15, which suggests to apply pool regression rather than fixed effect regression⁶¹. Therefore, I apply the pool regression in this occasion and the results are shown in Table 3.16. The results are quietly similar to those in Table 3.15. Overall, the results support H2 and this indicates that management tone in any part of the call is informative and assists in predicting future financial performance.

⁶¹ The Breusch-Pagan test's results are not reported.

Table 3.16 Robustness tests' results of H2 using management pessimistic tone as a measure of management tone by applying pool regression

Variable	Dependent variable: Future performance (ERN _{t+1})					
	TONE_Pres		TONE_Q&A		TONE_Both	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
Management Pessimistic Tone	-0.088***	0.001	-0.038*	0.069	-0.092***	0.001
DA	0.005	0.196	0.005	0.183	0.004	0.208
ERN	0.455***	0	0.472***	0	0.458***	0
RET	0.020***	0	0.022***	0	0.021***	0
Size	0.001	0.806	0	0.918	0.002	0.703
BTM	-0.013***	0.002	-0.015***	0.001	-0.013***	0.002
STD_RET	-0.134	0.109	-0.141*	0.095	-0.135	0.108
ERN_volatility	-0.007	0.885	-0.015	0.774	-0.006	0.907
Loss	0.004	0.690	0.005	0.656	0.005	0.651
FTSE_350	0	0.974	0.001	0.935	0.001	0.946
_cons	0.076***	0.001	0.068***	0.003	0.079***	0
Year	Included		Included		Included	
Industry	Included		Included		Included	
Number of observations	838		837		838	
R-squared (%)	43.63		42.94		43.52	

The table shows the robustness tests' results for the association between management tone in earnings conference calls and future financial performance (equation 2) by applying pool regression and using management pessimistic tone as a measure of management tone (dependent variable). ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All continuous variables are winsorized at 1% level. Management pessimistic tone is the negative words spoken by managers in each section scaled by the summation between managers' positive and negative words, based on Loughran and McDonald (2011) word lists. All other variables are described in Section 3.3.3.

3.6 Discussion and Conclusion

This research evaluates the purpose of managerial tone used in earnings conference calls. Specifically, it examines the association between managerial tone in earnings conference calls and financial performance. The sample period applied in this research lasts from 2010 to 2015. The sample comprises all UK non-financial firms that consider under FTSE 350 in any year during the sample period.

There are two theoretical streams which explain managerial tone, signalling and impression management theories. Because managers have information more than other

users in a business, the signalling theory can explain tone in this case (Glosten and Milgram, 1985; Welker, 1995; Verrecchia, 2001). Clearly, managers could use their tone to signal information in order to decrease the information asymmetry (Li, 2010b). On the other hand, based on the psychological human effect, managers can use the tone in order to change the users' perception (i.e., obfuscation-like behaviour) (Bettman and Weitz, 1983; Aerts, 1994). In this case, impression management theory explains the tone (Schleicher and Walker, 2010; Huang et al., 2014). This research is in line with the first theoretical stream (i.e., signalling theory) in explaining tone as shown in the discussion below.

This research paper finds that managerial tone in the earnings conference call is positively associated with current financial performance. This indicates that managerial tone reflects the current performance. This result is in line with the result in Li (2010b), but this research differs from him by using different management communication venue and by measuring the tone. Li (2010b) focuses on tone in MD&A measured by Bayesian learning algorithm to measure tone, but this research focuses on tone in the earnings conference call measured by using the wordlists of Loughran and McDonald (2011), which is considered as the best measure of tone in the corporate reporting context (Loughran and McDonald, 2011). In contrast, the result is inconsistent with Li (2008), Cho et al. (2010) and Barkemeyer et al. (2014), who explain managerial tone as an impression management behaviour to obfuscate negative current performance. However, these group of studies apply different settings of financial performance other than current earnings figure, such as environmental performance. This paper also documents that managerial tone in the earnings conference call positively predicts future earnings. Clearly, the results are in line with signalling theory in explaining managerial tone rather than impression management theory. This is consistent with

some of previous studies in this respect (e.g., Li 2010b; Davis et al. 2012; Demers and Vega, 2011; Patelli and Pedrini, 2014; Boudt and Thewissen, 2018), whereas it is inconsistent with other studies which support impression management theory in explaining tone in other communication venues (e.g., Huang et al., 2014; Schleicher and Walker, 2010; Guillamon-Saorin et al., 2017). The results are robust as is shown in the robustness checks of the results.⁶² In further analyses, the paper shows that the results are stronger for firms with poor performance than firms with strong performance, suggesting that poor performance firms are more likely to signal information about their financial performance than strong performance firms. Overall, this research evaluates the managerial tone in earnings conference calls as information disclosure behaviour rather than obfuscation behaviour about financial performance.

This chapter further shows that audience tone also positively predicts a firm's future earnings. Consequently, both managerial and audience tones in earnings conference calls signal information about future performance. In summary, the results prove that the earnings conference call discussion is useful to reduce information asymmetry, which accordingly assists in predicting future earnings.

This paper contributes to the theory related to tone management by adding that the earnings conference call discussion reduces information asymmetry, in particular through managerial and audience tones. It also contributes to the literature by providing empirical evidence about the association between managerial tone in earnings conference calls and firms' performance. Although there are some previous studies in the current literature looking at the association between managerial tone and financial performance, the results are mixed and it is not completely covered in the earnings

⁶² I test the hypotheses in three different positions of the earnings conference call separately (presentation section, Q&A section, and both of them) and the results are similar. I also use different measures of the main variables and the results are also quite similar. For more details see Section 3.5.2 in this chapter.

conference call. Consequently, it extends the current literature on whether managerial tone is informative about financial performance. It also the first that provides a primary assessment for tone in earnings conference calls within the UK context. This research also contributes to practice. It will benefit stakeholders in making their decisions through providing more attention to the managerial tone in the earnings conference call. Overall, this study adds to the understanding of using tone in earnings conference call. This research does not support the impression management theory in explaining tone. However, some previous studies that support this aspect consider settings in which firms have unfavourable performance, such as JMBE. For example, Huang et al. (2014) document that managers use tone more strategically when firms just meet or beat the earnings benchmark. This is in line with the impression management explanation. Future research could look at whether the purpose of managerial tone will change in unfavourable financial performance settings. This leads the author to consider this aspect in the next chapter, by focusing on JMBE.

4 Earnings Management and Tone Management: Evidence from FTSE 350 companies

Abstract—The aim of this paper is to study the self-serving behaviour in financial reporting and disclosure, especially for firms meeting or just beating an earnings benchmark. In particular, it investigates whether JMBE engage in tone management in earnings conference calls to complement earnings management. It also investigates whether the audience tone in firms that meet or just beat the earnings target fails to predict future performance. I use a sample of non-financial FTSE 350 firms during the period from 2010 to 2015. I find that JMBE and likely have more earnings management provide more abnormal tone during earnings conference call. This means that firms that use earnings management, and that meet or just beat the earnings benchmark, have incentives to manipulate their narrative disclosure through tone, in order to obfuscate users about the earnings management techniques used in their reporting in order to achieve the earnings benchmark. This result suggests that both earnings management and tone management practices complete each other, where they can be used together by managers as a form of self-serving behaviour. I also provide evidence that the audience's tone of firms meeting or just beating the earnings benchmark fails to predict future performance. This confirms that the perception of audience in meeting or just beating firms is managed by managers' tone. I also find that managers are greatly more optimistic in their words than the audience who attend the earnings conference call. Overall, I believe that this study is fundamental in the accounting context, where it evaluates the communication strategies used by managers to achieve the earnings target.

Keywords—Earnings management, earnings conference call, earnings benchmarks, self-serving theory, tone management.

4.1 Introduction

This study looks at the purpose of managerial tone in UK earnings conference calls in firms meeting or just beating an earnings benchmark. In particular, it investigates whether JMBE engage in tone management to complement earnings management. It also investigates whether the audience tone in firms that meet or just beat the earnings target fails to predict future performance.

Financial reporting and disclosures are different aspects within the same frame in the accounting context. One of the differences between them is that the annual financial reports are audited, and auditors review the interim financial reports, while in disclosures, auditors do not audit or review disclosures excepting the notes in annual financial reports. Moreover, financial reporting is quantitative. In contrast, most of the disclosure is qualitative (i.e., narrative) (Tucker, 2015). In a corporate report, narrative disclosures provide additional information for investors, which can be used to understand the quantitative information. Narrative disclosure represents the majority of firm's disclosure. Lo et al. (2017) indicates that 80% of an annual report consists of narrative disclosure. However, managers can use this type of disclosure to misinform investors (Marquardt and Wiedman, 2005). Managers can manipulate different narrative disclosures medium through tone. Huang et al. (2014) is a recent study which stresses narrative disclosure by examining the tone management in earnings press releases. They provide empirical evidence, for a sample of US firms, that managers use their discretion in disclosing the tone to mislead investors through concealing poor future performance. In addition, the earnings conference call can arguably be considered as one of a prevalent narrative disclosure medium that has greater managerial incentives to obscure than other reports (Bushee et al., 2018). In a conference call, different users, such as

analysts and other market participants can interactively discuss with managers (i.e. CEO and CFO), within 30 to 60 minutes, about the earnings announcement.

From another perspective, it is known from the previous literature that managers manage earnings in such a way as to mislead the perception of investors about the firm (Teoh et al., 1998; Xie, 2001). For instance, managers are more likely to manage earnings upward in order to avoid reporting losses or a decrease in earnings (Burgstahler and Dichev, 1997). Furthermore, the accounting literature shows that managers exercise earnings management techniques in order to just beat or meet an earnings benchmark (Healy and Wahlen, 1999; Dechow and Skinner, 2000; Fields et al., 2001), but other researchers have shown that firms that use earnings management to meet or just beat the benchmarks have negative consequence on future performance, which reduces the market premium accordingly (Moehrle, 2002; Bartov et al., 2002). In this case, although firms are more likely to present good news about their performance (i.e., beating the earnings benchmark), they have incentives to conceal the tools that have been used to just achieve the earnings benchmark (i.e., earnings management). The question that may arise here is how the tone management in earnings conference calls varies with earnings management used to narrowly attain the earnings target. This research is motivated to address this question. This research also provides insight about whether managers' tone in earnings conference calls of meeting or just beating the earnings benchmark successfully misleads the perception of audience about the poor future performance. In particular, this research also examines whether audience tone in just meeting or beating an earnings benchmark companies is less likely to predict future performance than in other firms.

There are some previous studies related to this study in the existing literature that look at the association between earnings management and different issues of qualitative

disclosure, such as using graphical impression management in the financial reports (Godfrey et al., 2003) and readability (Lo et al., 2017). However, these studies do not consider managerial tone. There are three other studies in the literature that are more closely related to this paper (e.g., Iatridis, 2016; Boudt and Thewissen, 2018; Huang et al., 2018). They look at tone management and draw some attention to the association between earnings management and managerial tone, but I differ from these authors. For example, Iatridis (2016) looks at the annual reports, Boudt and Thewissen (2018) look at CEOs letters and Huang et al. (2018) look at earnings press releases, but I look at earnings conference calls. I consider firms that are just beating or meeting the earnings benchmark with a small positive number. I also differ in using the abnormal optimistic tone in the analysis, rather than other types of tone used in above studies. In sum, this study considerably differs from previous studies in the research question.

The sample period lasts from 2010 to 2015, and the sample comprises all non-financial firms that consider under FTSE 350 in any year during the sample period. As this study focuses on management discretion, I follow Huang et al. (2014) and Lee and Park (2018) by using abnormal management tone rather than the whole management tone. I use positive and negative words suggested by Loughran and MacDonald (2011) to measure management and audience tone.⁶³ This study uses last year's earnings per share as an earnings benchmark following Lo et al. (2017) by employing different values as small positive number.⁶⁴ In this study, I use both accrual and real earnings management.

⁶³ Appendix C shows the list of words.

⁶⁴ Many prior studies use the same measure of earnings benchmark as this measure, such as Chan et al. (1996), Chordia and Shivakumar (2006), Sadka (2006), Drake et al. (2011) and Blau et al. (2015). I recognise that there are other measures in the literature that can be used as an earnings benchmark, such as analyst forecast estimates. However, there are different values of analysts' forecasts in different databases (Bloomberg or DataStream). Therefore, I choose last year's earnings per share as an earnings benchmark to avoid the selection bias, and I use the analyst forecast as a control variable in the regression model. In addition, this study focuses on management self-serving behaviour through financial performance. Consequently, if the firm does not meet the analyst forecast but it meets last year's earnings, this may

I measure accrual earnings management using Jones' (1991) Model and the Modified Jones Model (Dechow, Sloan and Sweeney, 1995), and real earnings management according to Roychowdhury (2006).

The findings are consistent with the prediction. This research finds that JMBE and exercise either more discretionary accruals or real earnings management will provide more abnormal tone during earnings conference calls than other firms. This means that companies meeting or just beating an earnings benchmark and which use earnings management have incentives to speak positively during the earnings conference call so as to mislead users about the earnings management techniques used in their reporting to achieve the earnings benchmark. Moreover, the results show that abnormal management tone in the earnings conference call is more positive when the firm is large, old, growing, and has high earnings number relative to analyst earnings' forecast, and is excluded from FTSE 350 list. In contrast, it is more negative when the firm has higher book to market ratio, more volatile earnings and a higher value of analysts forecast error.

This research also finds that the audience's tone in firms meeting or just beating (0.01) of last year earnings per share (EPS) is negatively associated with future performance. This means that the audience's tone of such firms fails to predict future performance. This confirms that the perception of audience in meeting or just beating firms is managed by managers' tone.

In subsequent analyses, I document that there are significant differences in the mean of abnormal tone between JMBE and other firms. Specifically, the mean value of abnormal tone in JMBE is higher than in other firms, and it increases for those firms

refer to wrongly estimate the earnings level by analysts. However, if the firm does not meet last year's earnings, this certainly refers to the firm performance. In robustness tests, I use another earnings benchmark, which is last year's earnings before extra-ordinary item divided by total asset, and I obtain similar results.

(i.e., the firms just beating the earnings benchmark), when the change in earnings per share becomes close to zero. This suggests that managers of JMBE manipulate more optimistically in their speaking during the earnings conference call than do other firms. I also find that managers provide greatly more positive tone than do other audiences who attend the earnings conference call. In summary, the results suggest that in cases where using a sitting in which firms meet or just beat an earnings benchmark, the earnings conference call is used for obfuscation purposes; and both earnings management and tone management strategies complete each other when used by managers as self-serving behaviour.

This research contributes to the literature in a number of ways. Theoretically, I show that in cases when firms just beat or meet the earnings benchmark, managerial tone is explained by (social) psychology theory (i.e., impression management theory) rather than economic theories. This study extends the understanding of the self-serving behaviour in reporting and communication. Empirically, this paper provides insight into the association between earnings management and tone management. It adds to the existing literature by examining the self-serving behaviour of managerial tone during earnings conference calls within a sitting in which meeting or just beating a benchmark is used. It is the first that examine the self-serving behaviour in the UK earnings conference call. It is also the first that compares managers' and the audience's tone in the UK earnings conference call. In practical terms, this study highlights the need for increased accountability by firms on earnings conference call. It also supports academics and practitioners in understanding the management discretion used in reporting and communication during the earnings conference call. Overall, I believe that this study is fundamental in the accounting context.

The following sections of this study are as follows. Section 4.2 presents the related literature and hypothesis development, Section 4.3 describes the data and methodology. Section 4.4 discusses the empirical results, Section 4.5 presents the further analyses and robustness checks, and Section 4.6 presents the conclusion of the study.

4.2 Related literature and hypothesis development

4.2.1 Self-serving theory in financial reporting and communication

Managers can exercise actions which increase their own interest, as they are the main source of reporting and disclosed financial information. For example, earnings management is such an action in management reporting used for self-serving purposes, which leads to an increase in the information asymmetry between managers and external users (Dye, 1988; Trueman and Titman, 1988). Schipper (1989, p. 92) describes earnings management as “a purposeful intervention in the external financial reporting process, with the intention of obtaining some private gain”. Healy and Wahlen (1999, p. 368) argue that “earning management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers”. Burgstahler and Dichev (1997, p. 112) list that “[s]tudies of earnings management typically consider a specific incentive for earnings management (e.g., incentives related to executive bonus plans) and then test whether earnings have been managed assuming a particular earnings management method (e.g., management of accruals)”. Managers are more likely to manage earnings, because there are several incentives to do so, such as financial gain, self-preservation, job security, bonus, satisfying the expectations, increasing the stock price, and meeting the earnings benchmark (Burgstahler and Dichev, 1997; Healy and Wahlen, 1999; Habib and Hansen, 2008; Lo, 2008). In

summary, the evidence is consistent with managers using earnings management techniques to achieve various self-serving objectives.

Another management action that can be used for self-serving purposes is the impression management behaviour used in management communication. This can be defined as the process in which managers manipulate their impressions to influence their audience (Goffman, 1959). Schlenker (1980) argue that basic human need of self-presentation in a psychological setting can be achieved through impression management. Hooghiemstra (2000, p. 60) describes impression management as a way “within social psychology studying how individuals present themselves to others to be perceived favourably”. In the accounting context, impression management is also defined by Clatworthy and Jones (2001, p. 311) as an attempt “to control and manipulate the impression conveyed to users of accounting information”. In addition, Yuthas et al. (2002, p. 142) define it as a medium to “strategically ... manipulate the perceptions and decisions of stakeholders”. Leary and Kowalski (1990) state that both individuals and organisations can change the image of other “external” parties by making a bias in the information provided to them. Similarly, Clatworthy and Jones (2003) argue that in most cases, empirically, managers provide a positive disclosure bias as an impression management in order to increase remuneration and job security. Obviously, the main purpose for managers in employing impression management is to reflect a self-serving vision of their performance (Neu, 1991; Neu et al., 1998).

Different techniques have been used in the accounting literature to distort the users’ perception of “impression management”, such as: focusing on the most favourable items to report; reporting the positive results by relying on benchmarks that make the results favourable through period-to-period comparison (Krische, 2005; Schrand and Walther, 2000); making reports that have bad news or bad performance harder to read

(Subramanian et al., 1993; Li, 2008); manipulating in visual and presentational practices by stressing positive outcomes and restraining negative performance (Beattie and Jones, 2002; Bowen et al., 2005; Cheng and Courtenay, 2006; Courtis, 2004b; So and Smith, 2002); and using a positive language technique through positive tone “tone management”, which is the focus of this study, to present a strong performance or positive results (Schleicher and Walker, 2010; Huang et al., 2014). Cho et al. (2010) argue that impression management strategy can result from the bias in the language and verbal tone engaged in narrative disclosure. As mentioned in the previous literature (e.g., Huang et al., 2014; Davis et al. 2015), “tone management” can be defined as optimistic or positive words versus pessimistic or negative words shown in the management’s disclosure that can affect the perception of users. More specifically, managers can manipulate tone for their self-serving interest by changing positively users’ perception; as in psychological studies, it has been shown that humans’ perceptions are affected by reference points (Rosch, 1975). Indeed, managers exercise a self-serving bias to emphasise good news and conceal bad news by providing more positive than negative keywords (Abrahamson and Park, 1994; Matsumoto et al., 2006; Rutherford, 2003; Huang et al., 2014).

This study focuses on two common management strategies used as self-serving behaviour. One is used in reporting which is earnings management strategy. The second is employed in managers’ communication which is tone management. According to the literature, these two strategies are connected to JMBE. Having discussed the use of reporting and communication strategies as self-serving behaviour, the next sections look at the motives for meeting or just beating the earnings benchmarks, and the link between firms meeting or just beating an earnings benchmark, and earnings and tone management.

4.2.2 Motives of meeting or just beating the earnings benchmarks

Previous research draws attention to market concerns about earnings benchmarks. Barth et al. (1999) report that, *ceteris paribus*, firms that have continuous growth in their annual earnings have higher prices than do other firms. Skinner and Sloan (2002) and Brown (2003) state that firms miss the earnings target (i.e., the earnings target used in their studies is the analyst's estimation), have dramatic decreases in their price at the time of earnings announcement. Bartov et al. (2002) find that firms that meet or beat the earnings target enjoy a higher return than firms that miss the earnings target. Similarly, Kasznik and McNichols (2002) show that firms meeting expectation have greater abnormal annual returns than in other firms. They also show that the market reward is significantly greater for firms that continuously meet or beat the earnings expectations in several sequential periods. Graham et al. (2005) did a survey of US chief financial officers (CFOs) about the main incentives or motivations for beating or meeting the earnings target. They suggest to CFOs the main incentives, such as the employee bonuses, bond covenants, stakeholder motivations, stock price movement and career concerns. They find that the most important incentive for CFOs to beat or meet the earnings target is boosting the stock price; more than 80% of CFOs in their survey support this incentive, and CFOs are also concerned about the other incentives that are less important.

4.2.3 Earnings management and meeting or just beating the earnings benchmarks

Given the main managers incentives to meet or just beat the earnings benchmark, managers may use their discretion to do so. The accounting literature shows that managers exercise earnings management techniques (i.e., accruals or real earnings management) in order to just hit an earnings benchmark (e.g., Healy and Wahlen, 1999; Dechow and Skinner, 2000; Fields et al., 2001; Gunny, 2010). Burgstahler and Dichev

(1997) have observed that there is a high increase in accruals for firms that just beat the earnings by increasing the discontinuity in the distribution relative to other firms. Dechow et al. (2000) report that JMBE have more discretionary accruals than the firms that just miss the benchmark. Das and Zhang (2003) find that managers employ accruals to round up the earnings figure to be met by the analysts' forecast. Abarbanell and Lehavy (2003) indicate that firms use accruals to meet the earnings target in the current period or to increase the probability of beating the future target. Matsumoto (2002) finds a positive relationship between firms that have positive discretionary accruals and the probability level of avoiding negative earnings surprises. Payne and Robb (2000) show that firms that have pre-managed earnings figure less than the analyst expectation figure have more positive discretionary accruals. Consistently, Peasnell et al. (2000) studied the UK firms in this respect; they report that firms whose changes between pre-managed earnings figure and the analyst expectation are negative have a positive average of discretionary accruals. Gunny (2010) provide evidence that real earnings management is positively associated with firms just meeting earnings benchmarks. In conclusion, managers apply different earnings management practices to just meet or beat the earnings benchmark for self-serving purposes.

Even though managers have the ability to manage earnings, doing so has negative consequences. For example, Marquardt and Wiedman (2004b) document that when earnings management is occurred, the reported earnings is less value relevant in determining stock price. Sloan (1996) show that if managers use current accruals to manage earnings, this can adversely affect future performance when the accruals reverse. Consistently, DeFond and Park (1997) report that in cases where the current year's financial performance is "poor" and future financial performance is expected to be "good", firms will manage the reported earnings by borrowing some earnings from

the future to be used in the current year, which in turn will reduce the future performance. More recently, other researchers also find that earnings management is negatively associated with future financial performance (Fairfield et al., 2003; Chu, 2012). Similarly, Fama and French (2006) provide evidence that accruals negatively predict next year's reported earnings. Gong et al. (2008) state that stock pre-repurchase abnormal accruals are negatively related to post-repurchase future financial performance. Gunny (2005), Leggett et al. (2009), Tabassum et al. (2014) and Vorst (2016) provide evidence that firms that engage in real earnings management to increase current earnings have a significantly negative effect on future operating performance. Gunny (2005) also shows that investors recognise this future performance implication in two real earnings management activities (i.e., investment in SG&A and cutting prices and/or overproducing to increase current period earnings).

Furthermore, although meeting or beating the earnings target may significantly increase the market price, as mentioned above, this has been changed since the accounting scandals of the early 2000s. Koh et al. (2008) examine the market rewards for firms that meet or beat the earnings target after the accounting scandals. They suggest that, after the accounting scandals period, the market has more concerned about firms that meet or beat the earnings target and become more sceptical of such firms. They show that following the scandals period, no stock market premium assigned to firms that meet or beat the target by less than one percent, whereas the market premium has diminished for firms that beat the target by more than one percent. Following the accounting scandals, the market become more aware about "earnings management" and how managers may use it to meet or just beat the earnings benchmarks. Previous research shows that if firms employ earnings management to meet or just beat the benchmarks, they will have a negative impact on future performance, and lower market premium. Moehrle (2002)

provide evidence that firms use restructuring accrual reversals to meet the earnings targets. Bartov et al. (2002, pp. 175-6) show that “earnings surprises that are likely to have been obtained through earnings or expectations management are associated with only a slightly lower premium and have marginally weaker predictive power with respect to future earnings”. Jiang (2008) provides evidence that beating the earnings benchmark is associated with a lower cost of debt, but the reduction in the cost of debt is diminished for those firms that have likely employed earnings management in order to beat the earnings benchmark. In summary, this suggests that firms that manage earnings to meet or just beat the earnings target need to take some actions to conceal the earnings management in order to avoid its negative consequences, and then they can achieve their incentives.

4.2.4 Earnings management, meeting or just beating the earnings benchmarks, and tone management

A group of previous studies argue that firms just meeting earnings benchmarks are more likely to engage in tone management as an impression management behaviour with a view to biasing users' perceptions favourably. For example, Huang et al. (2014) document that managers use tone more strategically when firms just meet or beat the earnings benchmark. Furthermore, Iatridis (2016) and Davis and Tama-Sweet (2012) find that firms that just beat the analysts' forecasts use less pessimistic tone. Therefore, tone management could be an action to complete the earnings management practice used to meet or just beat the earnings benchmark. Clearly, firms that exercise earnings management to meet or just beat the earnings benchmark are expected to use tone in the earnings conference call as self-serving behaviour rather than for signalling purposes.

I conclude from the above discussion that earnings management and tone management can be used for self-serving purposes when firms just beat the earnings benchmark. I expect that firms that are at the earnings change benchmark of zero or just above and

that are likely have more earnings management will show more abnormal positive tone in their speaking during the earnings conference call in order to affect users' perception of financial performance to conceal the earnings management used to just beat the earnings benchmark.⁶⁵ I expect that firms meeting or just beating the benchmark employ both earnings and tone management as impression management behaviour. In other words, I expect that they will engage in tone management to complete earnings management.

A few studies look generally at this domain of research. For example, Godfrey et al. (2003) show that there is a positive relationship between discretionary accruals and the use of graphical impression management in financial reports. Huang et al. (2014) undertook a pilot study about discretionary accruals and abnormal tone in earnings press release, suggesting that abnormal tone is positively correlated with discretionary accrual. Consistently, Huang et al. (2018), Boudt and Thewissen (2018) and Iatridis (2016) show that discretionary accruals is positively associated with managerial tone in different management communication venues (i.e., Earnings press releases, CEO letters and annual report, respectively) rather than in the earnings conference call. Larcker and Zakolyukina (2012) provide insight into the earnings conference call and show that using linguistics-based deceptiveness technique in the CEOs' answers in quarterly earnings conference calls is stronger than discretionary accruals models in terms of accounting manipulation. Lo et al. (2017) is a more closely-related study to this paper. They show that when firms manage their earnings using accruals in order to beat or meet the prior year's earnings, they make their MD&A section in their annual report harder to read. Consistent with prior research, the first hypothesis is formulated as follows (in alternative form):

⁶⁵ As the focus here is on management discretion and impression management, I use abnormal management tone rather than the whole management tone in the analyses.

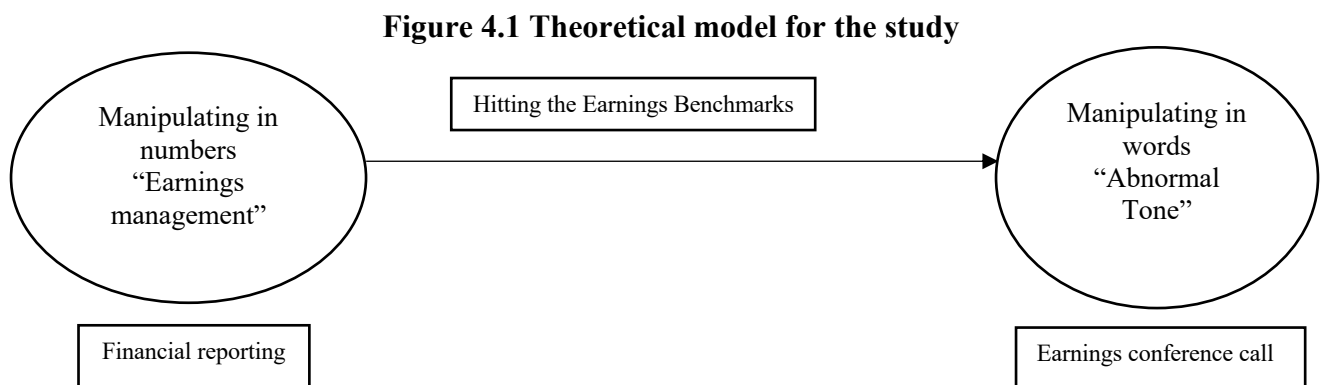
H1a: Firms that just meet or beat an earnings benchmark employ tone management to complement the accrual-based earnings management.

Management discretion can be used not only by managers' choice of accounting estimates and methods (i.e., accrual-based earnings management), but it also can be used through operational decisions (i.e., real earnings management). Graham et al. (2005) show in their survey that managers prefer engaging in real earnings management rather than in accrual-based earnings management, since it is difficult for auditors or regulators to detect real economic actions used to meet earnings targets. This is also supported by Cohen et al. (2008) and Cohen and Zarowin (2010). They argue that real earnings management is less likely to be identified by auditors' or regulators' examination than accrual-based earnings management. Cohen et al. (2008) examine the difference between the earnings management techniques used to just achieve the earnings target before and after the Sarbanes-Oxley Act (SOX), which occurred in 2002. They find that firms that just achieved the target, exercise less accrual and more real earnings management after SOX relatively compared to the same firms before SOX. However, Roychowdhury (2006) suggests that real earnings management can reduce the firm value, since the operational decisions made (i.e., real earnings management) can have an adverse effect on future cash flows. Cohen and Zarowin (2010) show that real earnings management affects future operating performance more severely than accrual-based earnings management during the seasoned equity offering. Lo et al. (2017) show that when firms engage in real earnings management in order to beat or meet the earnings target, they make their MD&A section in their annual report harder to read.

Based on the above discussion and consistent with H1a, I test the following hypothesis (in alternative form):

H1b: Firms that just meet or beat an earnings benchmark employ tone management to complement real earnings management.

The focus in this study is on a setting in which firms meet or just beat last year's earnings to see whether managerial tone is used for self-serving purposes, rather than to signal information as is shown in Chapter 3. Overall, I emphasise the analysis in testing the above hypotheses on three aspects: hitting the earning benchmark with a small positive number, managing the reported earnings in financial reporting “earnings management”, and management manipulation in words during earnings conference calls “tone management”. This research tests the effect of the interaction between earnings management (i.e., either accrual or real earnings management) and firms that just meet or beat the earnings benchmark on abnormal management tone in earnings conference call. Figure 4.1 below summarises the theoretical model for the above hypotheses.



4.2.5 Audience tone reaction for JMBE in predicting future performance

Most of the audience in an earnings conference call are analysts, who play an important role. Jensen and Meckling (1976) argue that the main role of analysts is to monitor managers' performance and provide relevant information to both bondholders and

shareholders. Moyer et al. (1989) argue that the role of analyst monitoring managers performance can be considered as an efficient means for controlling agency-related costs of debt and equity. Another role of analysts in the capital market can be described as information intermediaries. For example, financial analysts obtain information from public and private sources, and assess the firms' performance that they interested in. Then, they predict future financial performance, and recommend for investors whether buy, hold or sell the stock (Healy and Palepu, 2001). Prior research shows that the analysts' recommendations significantly affect stock prices (Givoly and Lakonishok, 1979; Lys and Sohn, 1990; Francis and Soffer, 1997). Financial analysts play an important role in increasing the efficiency of capital market, and their earnings forecasts are more precise than time-series models of earnings, because they can incorporate firm and economy news more timely than time-series models (Brown and Rozeff, 1978; Brown et al., 1987; Fried and Givoly, 1982). As regards the earnings conference call, Matsumoto et al. (2011) document that the Q&A session in an earnings conference call is relatively more informative than the presentation session, and that this superior information content is positively associated with analysts' following. They also show that managers provide more disclosure during the presentation session of the call when a firm has poor performance, but in these cases more information is obtained during Q&A session. They argue that the information content of earnings conference calls is increased when the active analyst is involved in conference calls, particularly when the firm has poor performance. Chen et al. (2018) show that intraday prices respond significantly to analyst tone, but not to management tone in the earnings conference call. It can be concluded that analysts' tone is important for an investment decision. Therefore, it is expected that managers have an incentive to manage analysts' perception in order to achieve their purposes.

Prior research finds that managers' qualitative information in a firm's disclosures affects the quality of analysts' forecast outputs. For example, Lehavy et al. (2011) find that firms with 10-Ks reports which are harder to read have greater dispersion, lower accuracy and greater overall uncertainty in analysts' earnings expectation. Bozanic and Thevenot (2015) show that a higher level of readability in earnings press releases is associated with a lower level of analysts' uncertainty. Filzen and Peterson (2015) provide an insight that analysts rely more on management guidance in earnings forecast. It can be concluded from the previous research that managers are able to affect analysts' perception about future earnings. Huang et al. (2014) find that firms that just meet or beat the earnings benchmark engage in managerial tone strategically to obfuscate the market participants. Thus, I expect that when managers for JMBE use tone strategically in earnings conference call, then this leads to a detrimental impact on audience' ability to process information about future performance. In other words, I expect that audience's tone for firms that just meet or beat an earnings benchmark fails to predict future performance, as the audience of such firms have been impressed by abnormal managerial tone provided in the call. Consequently, I test the following hypothesis:

H2: The tone of the audience in just meeting or beating an earnings benchmark companies is less likely to predict future performance than in other firms.

4.3 Data and Methodology

4.3.1 Data

The sample and data applied in this chapter is same as that used in Chapter 3 (see Chapter 3, Section 3.3.1 for more details). I also collect the financial data needed for earnings management models for all firms listed in LSE from DataStream (WorldScope

database) in order to calculate the earnings management variables for the sample.⁶⁶ The sample sizes (number of firm-year observations) vary across different tests specifications and are noted in the results section in the table of each test.

4.3.2 Variables

1. Abnormal Positive Tone in Earnings Conference Calls

For more review of tone management measures, see Chapter 2, Section 2.3.2. I apply the same measure of management tone that is used in Chapter 3, Section 3.3.2.1.⁶⁷ However, I restrict the analysis of TONE in earnings conference calls on the presentation part and only managers' words in the Q&A part using PYTHON software.⁶⁸

In line with Huang et al. (2014), TONE is decomposed into two components: normal component and abnormal component (Ab_Tone). To examine the association between managing earnings number in financial reporting (Earnings Management) and management's manipulation in words (Tone Management) in a firm meeting or just beating an earnings benchmark, I follow Lee and Park (2018) in using Ab_Tone instead of TONE as a whole, based on pool regression of Huang et al.'s (2014) tone model (equation 10) (described in Appendix B, Section 3) in order to obtain the managerial strategic choice of tone rather than tone that stems from current available information about fundamentals and business environment (i.e., current market and financial performance, growth opportunities, firm operating risk and complexity).⁶⁹ To control

⁶⁶ See Section 4.3.2/2, the measurement of earnings management, for more details.

⁶⁷ TONE is the difference between the frequency of positive and negative words spoken by the managers in an earnings conference call scaled by the summation between them based on Loughran and McDonald (2011) wordlist. Appendix C describes the words' list developed by Loughran and McDonald (2011).

⁶⁸ Appendix D explains the process of using PYTHON software to obtain only managers' words from the earnings conference call transcript.

⁶⁹ The following regression model is the tone model applied in this study (pool regression):

for variations across industries and over time, I add **Industry** and **Year** dummies. The residual from the pool regression, equation 10, in Appendix B, Section 3 represents Ab_Tone .⁷⁰ Table 4.3 shows the regression result of Tone Model.

2. Earnings Management

There are two types of earnings management in the accounting literature: accrual earnings management and real earnings management. Accrual earnings management is more common and well-utilised in the current literature. I follow the literature in using this technique as the main measure of earnings management. However, Peasnell et al. (2000) study the accrual earnings management in the UK following the Cadbury report, and they show that increasing the corporate governance level after the Cadbury report constrains the use of accruals to avoid losses or decrease earnings. Therefore, I also use real earnings management in addition to accruals earnings management in this study; this study is in the UK context and examines FTSE 350 firms, which have an environment with a high level of corporate governance. The proxy of each type is explained below.

2.1 Accrual Earnings Management

$$TONE_i = \alpha_0 + \alpha_1 ERN_i + \alpha_2 RET_i + \alpha_3 Size_i + \alpha_4 BTM_i + \alpha_5 STD_RET_i + \alpha_6 ERN_volatility_i + \alpha_7 Age_i + \alpha_8 Bus_Segments_i + \alpha_9 Geographic_segments_i + \alpha_{10} Loss_i + \alpha_{11} \Delta ERN_i + \alpha_{12} AFE_i + \alpha_{13} AF_i + Year_i + Industry_i + \epsilon_i$$

All variables are defined in Appendix F.

⁷⁰ Lee and Park (2018) and Huang et al. (2014) also use cross-sectional regression at industry-year level to obtain the abnormal tone in order to allow for variations in coefficients across industries and over time. However, the cross-sectional regression for each industry-year group is not applicable in this study to obtain the abnormal tone because I have only 315 firms in the sample and the earnings conference call for some firms is unavailable in some years. Furthermore, some industries have less than 10 firms in my sample, which means that in some groups, there will be less than 10 observations which is not applicable to running the regression and they will be eliminated from the sample. Therefore, if the industry-year level regression is applied, there will be a significant decrease in the sample size. Lee and Park (2018) also estimate pooled regression using their full sample after controlling for industry and year to obtain the abnormal tone, and their results are similar to their results when they use cross-sectional regression.

Following previous studies in earnings management literature, I use the cross-sectional **Jones (1991) Model** and **Modified Jones Model** (Dechow, Sloan, and Sweeney 1995) at industry-year level to estimate discretionary accruals, which represents earnings management. **Jones** and **Modified Jones Models** are explained in Chapter 2, Section 2.4.2/1.1.⁷¹ Firstly, I calculate total accruals (**TACC**) in order to apply the above two models. Recent research on earnings management are more geared towards using cash flow accrual rather than working capital accruals to derive **TACC**; Hribar and Collins (2002) suggest that working capital accrual is less accurate. Consistent with Chapter 3, I follow the prior research and use cash flow approach to calculate **TACC** in this study.⁷²

⁷³ Secondly, I run the cross-sectional regression models of the Jones and Modified Jones Models that are described in Chapter 2 for each two-digit ICB industry and year.^{74,75} Thirdly, I calculate the non-discretionary accruals (**NDA**) of each model separately for the sample (315 firms) by using their coefficients estimated in the accruals models (Jones and Modified Jones Models) and the financial data of variables included in each model. Simply, I conduct the following equations separately (equations 1 & 2) to obtain **NDA**.

$$\mathbf{NDA}_{it} = \alpha_1(1/A_{i,t-1}) + \alpha_2 \Delta \mathbf{REV}_{it} + \alpha_3 \mathbf{PPE}_{it} + \varepsilon_{it} \dots\dots\dots(1)$$

⁷¹ The discretionary accruals calculation based on Jones (1991) Model and Modified Jones Model is shown in Appendix A, Sections 2 and 3, respectively.

⁷² I only applied modified Jones model in Chapter 3 and its calculation described in Appendix E.

⁷³ The calculation of **TACC** according to the cash flow approach is explained in Appendix A, Section 2, equation 5.

⁷⁴ I run each regression separately for each two-digit from ICB industry code and year group with at least ten observations, by using all available data on the WorldScope database for all non-financial firms listed in LSE to calculate the coefficients for each model for the period from 2010 to 2015. More specifically, for each accrual model, I run a regression for each year and two digit ICB industry classifications for all firms listed in LSE.

⁷⁵ In each model, the coefficients are different in each year and two digit of ICB industry group.

$$NDA_{it} = \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta REV_{it} - \Delta REC_{it}) + \alpha_3PPE_{it} + \varepsilon_{it} \dots\dots\dots (2)$$

Finally, I estimate discretionary accrual (**DA**) for each model separately, by subtracting NDA from TACC as shown in the following formula (equation 3):

$$DA_{it} = TAC_{it} - NDA_{it} \dots\dots\dots (3)$$

2.2 Real Earnings Management

The real earnings management activities are described in Chapter 2, Section 2.4.2/2.1.

In this study, two activities (sales manipulation and reducing discretionary expenses) are examined with abnormal tone; I do not take into consideration production cost manipulation as this type of activities can only be used in manufacturing firms (Roychowdhury, 2006) and manufacturing firms represent only 25.4% of the sample. This is consistent with previous research on real earnings management (Alhadab et al., 2015; Ali and Zhang, 2015).

This study uses the cross-sectional models (Roychowdhury, 2006) to estimate real earnings management.⁷⁶ In term of sales manipulation, I first use the cross-sectional regression, equation (11) shown in Appendix A, Section 8, for each industry and year for all firms listed in LSE to capture the normal level of cash flows from operations.^{77,78} Then, similar to the way of extracting DA stated above, the discretionary or abnormal cash flows from operations (CFO) for firms in the sample (315 firms) is calculated as actual CFO minus the normal level of CFO, which is estimated using the coefficients from the cross-sectional regression, equation (11) in Appendix A.

⁷⁶ The cross-sectional models of real earnings management are shown in Appendix A, Section 8.

⁷⁷ This study classifies industries based on the first two-digit of ICB industry code, as shown in Table 3.2 in Chapter 3 (see Section 3.3.1 in Chapter 3 for more details).

⁷⁸ This study takes into account all non-financial firms listed in LSE for the period from 2010 to 2015 with available data in WorldScope database.

Regarding discretionary expenses manipulation, similarly, I use the cross-sectional regression, equation (12) in Appendix A, for each 2-digit ICB industry and year for all firms listed in LSE to capture the normal level of discretionary expenses. Then, the abnormal of discretionary expenses for firms in the sample (315 firms) is calculated as actual discretionary expenses minus the normal level of discretionary expenses, which are estimated using the coefficients from the cross-sectional regression, equation (12) in Appendix A.

Following Cohen et al. (2008) and Zang (2012), I combine the abnormal level of cash flows from operations and the abnormal level of discretionary expenses to capture the aggregate effect of real earnings management. In particular, I multiply abnormal cash flow from operations and abnormal discretionary expenses by -1, and then I take the summation between them, which expresses the aggregated measure of real earnings management (REM).

3. Just Beating or Meeting the Earnings Benchmarks

Burgstahler and Dichev (1997) provide evidence that firms that have a higher probability of managing their earnings are those firms whose earnings are in the neighbourhood of just meeting or beating their last year's earnings. In addition, Huang et al. (2014) provide evidence that firms have an incentive to provide more abnormal tone, when they just beat the earnings benchmark. Clearly, meeting or just beating the earnings benchmark can be considered as self-serving behaviour in reporting and communication, which is my focus. Therefore, I examine the relationship between earnings management and tone management with considering setting in which managers may have managed earnings in order to just meet or beat prior year's earnings. There are three earnings benchmarks that have been suggested in accounting research (Burgstahler and Dichev, 1997; Degeorge et al., 1999). These benchmarks are:

last years' earnings, zero earnings or profit, and analysts' consensus expectation. I follow Lo et al. (2017) in respect of the earnings benchmark. Lo et al. (2017) use the change in earnings per share as a main proxy to define firms that meet or beat the benchmark.⁷⁹ Lo et al. (2017) define the benchmark as the value of change in earnings per share from zero to a small positive number. To check the validity of the results, I also follow Lo et al. (2017) in using different values, which represent the small positive number to identify whether firms are classified under whether they just met or beat last year's earnings.⁸⁰ Below is the description of this variable:

JMBE: is an indicator variable sets to 1 when ΔEPS belongs to one of these ranges [$\pounds 0$, $\pounds 0.01$], [$\pounds 0$, $\pounds 0.02$] or [$\pounds 0$, $\pounds 0.03$] separately, and 0 otherwise.

ΔEPS : is the change in earnings per share.

4. Control Variables

A series of control variables that may affect the level of earnings management and that urge a certain level of tone are used to test the main hypothesis (H1). The control variables are derived from previous research, such as Lo et al. (2017), Huang et al. (2014), Guillamon-Saorin and Osma (2010), Davis et al. (2015), Ali and Zhang (2015) and Davis and Tama-Sweet (2012). The most important variables in this context are the earnings-related variables and earnings performance benchmarks, such as ERN, Δ ERN, Loss, AFE and AF. I include these variables to control for profitability and performance benchmarks, where previous research such as Huang et al. (2014) and Davis et al. (2015) indicates that management tone is affected by these variables. Following Huang et al. (2014), I use annual stock returns (RET) and book-to-market ratio (BTM)

⁷⁹ This measure of earnings benchmark is commonly used in the literature, such as Chan et al. (1996), Chordia and Shivakumar (2006), Sadka (2006), Drake et al. (2011) and Blau et al. (2015).

⁸⁰ In robustness tests, I use another earnings benchmark with different values as small positive number as well, which is last year's earnings before extra-ordinary item divided by total asset; I obtain similar results.

variables to capture the current forward-looking property of market information that may impact the management tone level. The size of the firm, the age of the firm, revenues growth, leverage, issue capital, and tangibility (property, plant and equipment), may also affect the level of tone and earnings management. Previous studies used them as control variables in management disclosure reports (Aerts, 2001; Clatworthy and Jones, 2003; Aerts and Cheng, 2011) and earnings management studies (Lobo and Zhou, 2001; Ali and Zhang, 2015; Cassell et al., 2015; Guillamon-Saorin and Osma, 2010). I also add volatility of stock returns (STD_RET) and volatility of earnings (ERN_volatility) to measure the environmental operating and business risk of the firm.

Similar to Chapter 3, the sample is all non-financial firms classified under FTSE 350 in any year during the period from 2010 to 2015. For example, if a non-financial firm is classified under FTSE 350 only in 2010, this firm has been taken in my sample. Therefore, I construct a dummy variable (FTSE_350), which equals one if the firm is classified under FTSE 350 list and zero otherwise. I use this dummy variable when I test the relation between discretionary accrual or real earnings management, and abnormal tone; this may affect the abnormal tone as it might be argued that firms that dropped out from FTSE 350 are more likely to provide more abnormal tone.

Year dummies are also used to control for variation in abnormal tone level over time in conference calls. I define all control variables below in the empirical model section. I show a discussion in the results section for the variables that present significant explanatory power.

4.3.3 Empirical model

The following regression model is used to test the association between abnormal management tone in earnings conference call, and the interaction between earnings management and JMBE (H1a and H1b):

$$\begin{aligned} \text{Ab_Tone}_{it} = & \alpha_0 + \alpha_1 (\text{EM}_{it} \times \text{JMBE}_{it}) + \alpha_2 \text{EM}_{it} + \alpha_3 \text{JMBE}_{it} + \alpha_4 \text{ERN}_{it} + \alpha_5 \text{RET}_{it} \\ & + \alpha_6 \text{Size}_{it} + \alpha_7 \text{BTM}_{it} + \alpha_8 \text{STD_RET}_{it} + \alpha_9 \text{ERN_volatility}_{it} + \alpha_{10} \text{Age}_{it} + \alpha_{11} \text{Loss}_{it} + \alpha_{12} \\ & \Delta \text{ERN}_{it} + \alpha_{13} \text{AFE}_{it} + \alpha_{14} \text{AF}_{it} + \alpha_{15} \text{PPE}_{it} + \alpha_{16} \text{REV_Growth}_{it} + \\ & \alpha_{17} \text{DEBT_TO_EQY}_{it} + \alpha_{18} \text{issue}_{it} + \alpha_{19} \text{FTSE_350}_{it} + \text{Year}_t + \varepsilon_{it} \\ & \dots\dots\dots(4) \end{aligned}$$

Fixed effect regression for firm and year is applied in testing H1 based on the significant results in Breusch-Pagan test and Hausman test.⁸¹ In the above model (equation 4), Bus_Segments, Geographic_segments, and industry dummies variables are included, but are automatically deleted when I apply the fixed effect regression test. It uses the abnormal tone as the dependent variable, and the interaction between one of the earnings management proxies and JMBE as independent variable with control variables, which may affect the level of tone or earnings management discussed in Section 4.3.2/4. The following regression model is applied to test the association between future financial performance, and the interaction between audience tone and JMBE (H2):

$$\begin{aligned} \text{ERN}_{it+1} = & \alpha_0 + \alpha_1 (\text{Audience_Tone}_{it} \times \text{JMBE}_{it}) + \alpha_2 \text{Audience_Tone}_{it} + \alpha_3 \text{JMBE}_{it} + \\ & \alpha_4 \text{DA_MJ}_{it} + \alpha_5 \text{ERN}_{it} + \alpha_6 \text{RET}_{it} + \alpha_7 \text{Size}_{it} + \alpha_8 \text{BTM}_{it} + \alpha_9 \text{STD_RET}_{it} + \alpha_{10} \\ & \text{ERN_volatility}_{it} + \alpha_{11} \text{Loss}_{it} + \alpha_{12} \text{FTSE_350}_{it} + \text{Year}_t + \varepsilon_{it} \\ & \dots\dots\dots(5) \end{aligned}$$

Fixed effect regression for firm and year, and pool regression are applied in testing H2. Industry dummies variables are included in both regressions, but are automatically deleted when I apply the fixed effect regression test. I apply pool regression in addition to the fixed effect regression; because the result of Breusch-Pagan test is insignificant for H2 model, this suggests using pool regression.⁸²

Where;

Ab_Tone_{it} : is abnormal positive tone, which is measured as the residual from the pool regression, equation 10, in Appendix B, Section 3.

⁸¹ The results of Breusch-Pagan test and Hausman test are reported in the results' tables in Section 4.4.2.

⁸² The results of Breusch-Pagan test and Hausman test are reported in the results' tables in Section 4.4.3.

EM_{it} × JMBE_{it} : is the interaction between one of the earnings management proxies and firms that just meet or beat the earnings target.

EM_{it} : refers to the earnings management proxy, which is one of the discretionary accruals measures or real earnings management measure. See Section 4.3.2/2 for more details.

JMBE_{it} : is an indicator variable is set to 1 if firms just meet or beat the earnings benchmark, and 0 otherwise. See Section 4.3.2 for more details.

ERN_{it} : is earnings before extraordinary items scaled by lagged total assets.

RET_{it} : is annual stock return calculated by this formula $((P_t - P_{t-1}) + Div_t) / P_{t-1}$, where:

P_t : Stock price in year **t**.

P_{t-1} : Stock price in year **t-1**.

Div_t : Dividends per share in year **t**.

Size_{it} : is logarithm of market value of equity at the end of the fiscal year.

BTM_{it} : is book-to-market ratio measured at the end of the fiscal year.

STD_RET_{it} : is the standard deviation of monthly stock returns over the fiscal year (monthly stock returns is obtained by calculating the growth in monthly total return index, which has been collected from DataStream database).

ERN_volatility_{it} : is the standard deviation of ERN calculated over the last five years, with at least three years of data required.

Age_{it} : is log (1 + age from the first year the firm entered the DataStream database).

Loss_{it} : is an indicator variable set to 1, when EARN is negative, and is 0 otherwise.

Δ ERN_{it} : is the change in earnings before extraordinary item scaled by lagged total assets.

AFE_{it} : is the analyst forecast error calculated by taking the difference between actual EPS and the median of analysts' forecasts EPS (Bloomberg estimation), scaled by stock price at the end of the fiscal year.

AF_{it} : is the median of analysts' forecasts EPS related to the year **t+1** (Bloomberg estimation), scaled by stock price at the end of the fiscal year.

PPE_{it} : is gross property plant and equipment scaled by lagged total assets.

REV_Growth_{it} : is sales growth calculated by change in sales divided by the beginning of period sales.

DEBT_TO_EQY_{it} : is total debt scaled by total shareholders' equity.

issue_{it} : is an indicator variable set equal to one if the firm issued equity or debt in the year, and zero otherwise.

FTSE_350_{it} : is an indicator variable set equal to one if the firm is classified under the FTSE 350 list, and zero otherwise.⁸³

Audience tone_{it} : is the audience (i.e., analysts and other market participants who attend the call) optimistic tone, measured by calculating the difference between the positive and negative words spoken by the audience of earnings conference call, scaled by the summation between them, based on word lists from Loughran and McDonald (2011).

⁸³ More details about this variable are explained in Section 4.3.2/4.

Audience_Tone_{it} × JMBE_{it} : is the interaction between audience tone and firms that just meet or beat the earnings target.

DA_MJ_{it}: is discretionary accruals measured by modified Jones model. See appendix E for more details.

Year_t : Year Dummies (2010, 2011, 2012, 2013, 2014, and 2015).

Similar to Chapter 3, following previous studies of managerial tone in earnings conference calls, such as Chen et al. (2018), Davis et al. (2015) and Matsumoto et al. (2011), all continuous variables are winsorized at the 1 percent level to reduce the effects of outliers. Following prior research in tone literature, the standard error is clustered by firm under each fixed effect regression.

Having discussed the measurement of each variable and the empirical model used in the study, the next section looks at the summary statistics of the variables.

4.3.4 Summary statistics

4.3.4.1 Descriptive statistics

Table 4.1 presents summary descriptive statistics for the variables used in the study analysis.⁸⁴ The mean and median of Ab_Tone are (0.001), (0.007) respectively. This is in line with previous research (i.e., Huang et al., 2014; Lee and Park, 2018), where the mean and median of Ab_Tone in previous studies are slightly higher than zero. This indicates that managers manipulate positively in their speaking during earnings conference call. The mean and median of Audience_Tone are (-0.259) and (-0.263), suggesting that the audience of earnings conference calls speak pessimistically. This could be because the audience may want to restrict managers in order to obtain the true information from them.

⁸⁴ As the sample used in this chapter is the same as the sample used in Chapter 3, the descriptive statistics of management tone is discussed in Chapter 3. See Section 3.3.4.1 in Chapter 3 for more details.

Table 4.1 Descriptive statistics

Variable	N	Minimum	Mean	Median	Maximum	Range	Std. Dev.
Tone_All	955	-0.234	0.247	0.256	0.622	0.856	0.176
TONE	901	-0.170	0.340	0.343	0.718	0.888	0.179
Audience_Tone	896	-0.878	-0.259	-0.263	0.400	1.278	0.242
Normal_Tone	840	0.063	0.343	0.360	0.499	0.437	0.090
Ab_Tone	840	-0.401	0.001	0.007	0.323	0.725	0.151
DA_J	1717	-3.565	0.487	0.084	8.671	12.236	1.485
DA_MJ	1694	-3.622	0.457	0.078	8.921	12.543	1.487
REM	1735	-10.051	0.265	-0.005	12.195	22.246	2.518
JMBE = 1 when $\Delta EPS \in [\pounds 0, \pounds 0.01]$	1667	0.000	0.048	0.000	1.000	1.000	0.214
JMBE = 1 when $\Delta EPS \in [\pounds 0, \pounds 0.02]$	1667	0.000	0.100	0.000	1.000	1.000	0.300
JMBE = 1 when $\Delta EPS \in [\pounds 0, \pounds 0.03]$	1667	0.000	0.135	0.000	1.000	1.000	0.342
ERN	1745	-0.231	0.065	0.058	0.397	0.628	0.088
RET	1618	-0.798	0.186	0.142	2.039	2.838	0.447
Size	1659	1.771	3.214	3.106	4.999	3.228	0.644
BTM	1657	-0.110	0.566	0.388	4.470	4.581	0.625
STD_RET	1743	0.000	0.084	0.074	0.262	0.262	0.045
ERN_volatility	1767	0.004	0.053	0.031	0.467	0.463	0.068
Age	1763	0.000	1.236	1.301	1.716	1.716	0.419
Bus_Segments	1884	0.301	0.678	0.699	1.230	0.929	0.253
Geographic_segments	1884	0.301	0.727	0.778	1.342	1.041	0.255
Loss	1745	0.000	0.140	0.000	1.000	1.000	0.348
Δ ERN	1705	-0.312	0.000	0.002	0.313	0.626	0.076
AFE	1628	-1.203	-0.045	-0.006	0.136	1.339	0.160
AF	1592	-0.105	0.077	0.069	0.487	0.592	0.065
PPE	1732	0.007	0.553	0.454	2.042	2.035	0.433
REV_Growth	1720	-0.484	0.075	0.047	1.306	1.789	0.221
DEBT_TO_EQY	1711	0.000	0.897	0.466	10.989	10.989	1.573
Issue	1755	0.000	0.745	1.000	1.000	1.000	0.436
FTSE_350	1890	0.000	0.752	1.000	1.000	1.000	0.432

Tone_All is the optimistic tone in the whole earnings conference call measured by calculating the difference between the positive and negative words in the whole earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011). **Audience_Tone** is the difference between the positive and negative words spoken by audience (not managers), who attend the earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011). **Normal_Tone** is the expected management positive tone obtained after running the regression of the tone model. **Ab_Tone** is abnormal management positive tone, which is measured as the residual from the regression of the tone model. **DA_J** is discretionary accrual through cash flow approach according to Jones model. **DA_MJ** is discretionary accrual through cash flow approach according to Modified Jones model. **REM** is the summation between the abnormal level of cash flows from operations and the abnormal level of discretionary expenses multiplied by -1, which expresses the aggregated measure of real earnings management. All other variables are described in equation (4), and in Appendix F.

Furthermore, Table 4.1 shows that the averages of earnings management measures are (0.487), (0.457), and (0.265) for DA_J, DA_MJ, and REM respectively, suggesting that FTSE 350 firms, on average, manage their reporting to increase their performance rather than decreasing their performance. In unreported (not tabulated) results, I find that there are significant differences from zero in the mean value of all firms in the sample for each measure of earnings management. This confirms that earnings management exist in the sample. The descriptive results for the other variables are mostly similar to those found in previous research.

4.3.4.2 Correlation analysis

Table 4.2 shows Pearson correlation for the variables used in the study. Abnormal management tone is significantly correlated with revenues growth with a coefficient at (0.1060) at (p-value <0.05), suggesting that firms that have more growth in revenues are more likely to manipulate their words positively during earnings conference call. It is clearly evident from Table 4.2 that abnormal management tone is positively correlated with audience tone with a coefficient at (0.2089) at (p-value <0.05). This indicates that when managers speak strategically more optimistically in the earnings conference call, the audience will respond by speaking less pessimistically during the call. This suggests that the audience is affected by abnormal managers' tone.

Table 4.2 Pearson correlation

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Tone_All	1.0000												
(2) Tone	0.9749*	1.0000											
(3) Audience_Tone	0.3706*	0.2550*	1.0000										
(4) Normal_Tone	0.5201*	0.5143*	0.1690*	1.0000									
(5) Ab_Tone	0.8247*	0.8557*	0.2089*	0.0057	1.0000								
(6) DA_J	0.0482	0.0625	-0.0494	0.0870*	0.0136	1.0000							
(7) DA_MJ	0.0500	0.0621	-0.0623	0.0857*	0.0137	0.9819*	1.0000						
(8) REM	-0.0220	-0.0085	-0.0709*	0.0368	-0.0318	0.4393*	0.4445*	1.0000					
(9) ERN	0.2516*	0.2804*	0.0369	0.5217*	0.0175	0.1177*	0.1086*	0.0115	1.0000				
(10) RET	0.2270*	0.2302*	0.1138*	0.3657*	0.0418	0.0391	0.0288	0.0960*	0.2832*	1.0000			
(11) Size	-0.0483	0.0083	-0.0715*	-0.0101	-0.0041	-0.1579*	-0.1420*	-0.0718*	0.1288*	-0.0059	1.0000		
(12) BTM	-0.1762*	-0.1896*	-0.0466	-0.2973*	-0.0649	-0.0500*	-0.0437	-0.0345	-0.2974*	-0.1759*	-0.3198*	1.0000	
(13) STD_RET	-0.1989*	-0.2135*	-0.0611	-0.3941*	-0.0081	0.0634*	0.0598*	0.0463	-0.2550*	-0.1149*	-0.3635*	0.2524*	1.0000
(14) ERN_volatility	-0.1373*	-0.1284*	-0.0656	-0.2774*	-0.0051	0.1449*	0.1490*	0.0581*	-0.0086	-0.0615*	-0.1308*	0.0327	0.3421*
(15) Age	0.1037*	0.0816*	0.0859*	0.0963*	0.0038	-0.1996*	-0.1955*	-0.1575*	0.0373	0.0642*	0.1719*	-0.0220	-0.2510*
(16) Bus_Segments	-0.0841*	-0.0525	-0.1032*	-0.0968*	-0.0046	-0.1137*	-0.0946*	-0.0878*	0.0002	0.0185	0.2271*	-0.0269	-0.1388*
(17) Geographic_segments	-0.2266*	-0.2060*	-0.0758*	-0.3906*	0.0007	-0.0693*	-0.0581*	-0.0891*	-0.0097	-0.0810*	0.2378*	-0.0782*	0.0419
(18) Loss	-0.2428*	-0.2427*	-0.0919*	-0.4844*	-0.0034	0.0587*	0.0643*	0.0517*	-0.6008*	-0.2272*	-0.1503*	0.2113*	0.3490*
(19) Δ ERN	0.1379*	0.1415*	0.0548	0.2342*	0.0140	0.0782*	0.0723*	0.0379	0.4298*	0.2292*	0.0208	-0.0728*	-0.0878*
(20) AFE	0.1842*	0.1895*	0.0912*	0.3908*	-0.0030	0.0239	0.0200	0.0272	0.4799*	0.2426*	0.2165*	-0.3758*	-0.4044*
(21) AF	0.0283	0.0165	-0.0096	0.0413	0.0015	-0.1024*	-0.1021*	-0.0284	0.1381*	0.0939*	-0.2179*	0.3168*	-0.0163
(22) PPE	-0.1679*	-0.1542*	-0.1017*	-0.2880*	0.0182	-0.0387	-0.0223	-0.0777*	-0.0905*	-0.0545*	0.0453	0.0828*	0.0802*
(23) REV_Growth	0.0950*	0.1428*	0.0348	0.1267*	0.1060*	0.1310*	0.1262*	0.0364	0.2250*	0.1502*	-0.0030	-0.0489*	0.0118
(24) DEBT_TO_EQY	0.0064	0.0113	-0.0286	0.0060	0.0033	-0.0828*	-0.0718*	-0.0579*	-0.1296*	-0.0393	0.0555*	-0.1322*	-0.0030
(25) Issue	0.0451	0.0515	-0.0042	0.0207	0.0272	-0.0107	-0.0056	0.0083	-0.0512*	-0.0086	0.0928*	-0.0630*	-0.0460
(26) FTSE_350	0.0934*	0.1104*	0.0303	0.1696*	0.0069	-0.1527*	-0.1419*	-0.1026*	0.2275*	0.1116*	0.4552*	-0.1902*	-0.1780*

* indicates statistical significance at the 5% level. All variables are defined in Appendix F.

Table 4.2 Pearson correlation (Cont.)

Variable	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
(14) ERN_volatility	1.0000												
(15) Age	-0.2727*	1.0000											
(16) Bus_Segments	-0.1563*	0.1601*	1.0000										
(17) Geographic_segments	0.0194	0.1256*	0.2758*	1.0000									
(18) Loss	0.2345*	-0.1541*	-0.0669*	0.0135	1.0000								
(19) Δ ERN	-0.0500*	0.0125	-0.0172	-0.0526*	-0.2878*	1.0000							
(20) AFE	-0.1175*	0.1039*	-0.0233	-0.0303	-0.4986*	0.3349*	1.0000						
(21) AF	-0.0983*	0.0902*	0.0958*	-0.0479	-0.1704*	0.0557*	-0.0334	1.0000					
(22) PPE	0.0263	-0.0379	-0.0654*	-0.0069	0.0772*	0.0005	-0.0580*	-0.0479	1.0000				
(23) REV_Growth	0.1932*	-0.1740*	-0.1335*	-0.0691*	-0.0927*	0.1381*	0.1598*	0.0404	0.0239	1.0000			
(24) DEBT_TO_EQY	-0.1109*	-0.0054	0.1080*	-0.0800*	0.0783*	-0.0107	-0.1343*	0.0590*	0.1370*	-0.1317*	1.0000		
(25) Issue	-0.0963*	0.0933*	0.0163	0.0663*	0.0007	-0.0595*	-0.0283	-0.0391	-0.0006	0.0810*	0.0367	1.0000	
(26) FTSE_350	-0.1348*	0.1011*	0.1807*	0.1160*	-0.2520*	0.0313	0.2797*	-0.0695*	0.0071	0.0692*	-0.0539*	0.0708*	1.0000

* indicates statistical significance at the 5% level. All variables are defined in Appendix F.

4.4 Empirical results

4.4.1 Management Tone Model

Table 4.3 presents the regression results of tone model (the pool regression, equation 10, see Appendix B, Section 3) to obtain the abnormal management tone. The results are generally consistent with prior literature (D'Augusta and DeAngelis, 2017; Huang et al., 2014; Li, 2010b). I find that management tone during the earnings conference call is more positive when the firm is more profitable, and also has higher stock returns and more business segments, whereas it is more negative when the firm has more volatile stock returns and more geographic segments, and when the firm's market valuation is poor relative to its book value. The residual from this regression represents the abnormal management tone.

Table 4.3 Tone regression model

Variable	Dependent variable: TONE	
	Coefficient	p-Value
ERN	0.532***	(0.000)
RET	0.02**	(0.025)
Size	-0.017	(0.153)
BTM	-0.003**	(0.041)
STD_RET	-0.312*	(0.081)
ERN_volatility	-0.025	(0.791)
Age	-0.029	(0.117)
Bus_Segments	0.056**	(0.044)
Geographic_segments	-0.07***	(0.006)
Loss	-0.022	(0.324)
Δ ERN	-0.094	(0.219)
AFE	0.001	(0.945)
AF	-0.02	(0.751)
_cons	0.542***	(0.000)
Industry	Included	
Year	Included	
Mean VIF	1.50	
No. of Observations	840	
Fstat (Value)	9.25***	
R-squared (%)	26.83	
Adjusted R-squared (%)	23.93	

p-values are reported between brackets. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

4.4.2 Earnings Management and Abnormal Tone

As discussed earlier, JMBE are more likely to manage both earnings and tone for self-serving purposes than are other firms. Therefore, the behaviour in meeting or just beating the earnings benchmark can be considered as self-serving behaviour in reporting and communication. As the focus in this study is on the self-serving behaviour, I take into account this behaviour in the analysis. In particular, I examine the effect of the interaction between earnings management and firms that just meet or beat the earnings benchmark on abnormal management tone in the earnings conference call.

For validity concern, I use three small positive numbers to classify firms that just hit the earnings benchmark.⁸⁵ Clearly, firms are considered to just beat the benchmark, when change in earnings per share is $\in [\pounds 0, \pounds 0.01]$, $[\pounds 0, \pounds 0.02]$, or $[\pounds 0, \pounds 0.03]$. I apply panel fixed effect regression for firm and year (equation 4) by using the abnormal tone as the dependent variable, and the interaction between one of earnings management proxies (DA_J, DA_MJ or REM) and JMBE as the independent variable with control variables described in equation (4).⁸⁶ Standard errors in each regression are clustered at the firm level. Tables 4.4, 4.5 and 4.6 show the estimation results of examining the relationship between the interaction between earnings management and firms that just meet or beat the earnings benchmark, and abnormal management tone in earnings conference call. What follows are a set of discussions of the results from each table.

4.4.2.1 Accrual-Based Earnings Management and Abnormal Tone

Table 4.4 presents the regression results when I use discretionary accruals based on Jones (1991) model as a proxy of accruals earnings management.⁸⁷ When I use **(0.02)**, or **(0.03)** as small positive numbers to classify firms that just hit the benchmark, the results of these regressions are significant, with a positive sign. The Ab_Tone coefficients are **(0.020)** and **(0.021)** with p value **(0.012)** and **(0.008)** for the interaction between discretionary accruals and firms that just meet or beat the earnings benchmark when the small positive earnings number used is **(0.02)**, and **(0.03)**, respectively. This

⁸⁵ In robustness tests, I use another earnings benchmark with different values as small positive number as well, which is last year earnings before extra-ordinary item divided by total asset; I obtain similar results.

⁸⁶ The earnings conference call of any firm occurs after issuing the financial data related to earnings management and the other variables used in equation (4). Therefore, there is no endogeneity problem in term of reversal causal effect. However, to control for endogeneity problem that may happen due to other issues, I apply fixed effect regression for firm and year with unbalanced data, and I use a very large number of control variables used in previous research related to tone or earnings management.

⁸⁷ In Table 4.4, I apply fixed effect regression under each benchmark based on the significant results of Breusch-Pagan test and Hausman test, which suggests using fixed effect regression. The significant results of these tests are shown in the table.

supports my hypothesis (H1a) that JMBE use tone management in the earnings conference call to complete accrual-based earnings management. Clearly, the results indicate that firms that just meet or beat the earnings benchmark and have more discretionary accruals provide more abnormal tone in their earnings conference call. This suggests that JMBE use earnings and tone management as impression management practice. However, Table 4.4 shows that the result is insignificant in cases where **(0.01)** is used as a benchmark of small positive earnings number, but the sign of the coefficient in this case is positive, which is consistent with the other benchmarks.

Table 4.4 Abnormal tone, and the interaction between discretionary accruals (Jones model) and JMBE

Variable	Dependent variable: Ab_Tone					
	JMBE = 1 when $\Delta EPS \in$					
	[£0, £0.01]		[£0, £0.02]		[£0, £0.03]	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
DA_J \times JMBE	0.002	(0.857)	0.020**	(0.012)	0.021***	(0.008)
DA_J	-0.022***	(0.006)	-0.028***	(0.001)	-0.029***	(0.001)
JMBE	0.020	(0.401)	0.017	(0.391)	0.011	(0.531)
ERN	-0.193	(0.240)	-0.187	(0.246)	-0.188	(0.243)
RET	-0.023	(0.136)	-0.023	(0.132)	-0.023	(0.133)
Size	0.129**	(0.017)	0.129**	(0.015)	0.129**	(0.015)
BTM	-0.05*	(0.065)	-0.051*	(0.062)	-0.051*	(0.061)
STD_return	0.141	(0.430)	0.155	(0.387)	0.156	(0.381)
ERN_volatility	-0.423***	(0.007)	-0.399**	(0.013)	-0.401**	(0.012)
Age	0.344***	(0.001)	0.348***	(0.001)	0.347***	(0.001)
Loss	0.007	(0.726)	0.006	(0.775)	0.006	(0.779)
Δ ERN	0.199**	(0.030)	0.204**	(0.025)	0.205**	(0.025)
AFE	-0.113*	(0.054)	-0.118**	(0.041)	-0.118**	(0.042)
AF	0.456***	(0.000)	0.446***	(0.000)	0.449***	(0.000)
PPE	-0.023	(0.676)	-0.021	(0.702)	-0.022	(0.684)
REV_Growth	0.020	(0.633)	0.015	(0.731)	0.015	(0.720)
DEBT_TO_EQY	-0.008	(0.257)	-0.008	(0.258)	-0.008	(0.262)
Issue	-0.007	(0.595)	-0.006	(0.655)	-0.006	(0.647)
FTSE_350	-0.072**	(0.034)	-0.073**	(0.030)	-0.073**	(0.031)
_cons	-0.835***	(0.000)	-0.844***	(0.000)	-0.844***	(0.000)
Year	Included		Included		Included	
Observations with JMBE = 1	31		67		88	
Total number of observations	814		814		814	
Number of groups	199		199		199	
Fstat (Value)	4.64***		5.95***		5.98***	
Mean VIF	4.91		4.95		4.96	
Hausman test-Prob>chi2 (%)	0.040		0.090		0.060	
Breusch-Pagan LM test-Prob>chi2 (%)	0		0		0	
R-squared (%)	9.74		10.17		10.14	

The table shows the panel fixed effect regression results for the association between abnormal tone, and the interaction between discretionary accruals (Jones model) and JMBE (equation 4). Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

I also run the regression in equation (4) by using a modified Jones model (Dechow et al., 1995) as a proxy of accrual-based earnings management instead of Jones (1991) model. Table 4.5 presents the estimation regression results in this case.⁸⁸ These results are similar to the above results in case when I applied Jones model to measure discretionary accruals. In sum, the results show that in cases when I use (0.02) or (0.03) as targets of small positive number to classify JMBE, firms that just hit the earnings benchmark and use more discretionary accruals in their reporting provide more abnormal tone in their earnings conference calls to conceal the accrual-based earnings management technique used to just attain the earnings benchmark. This supports my hypothesis (H1a) and confirms the above result that JMBE use tone management in the earnings conference call to complete accrual-based earnings management.

⁸⁸ In Table 4.5, I apply fixed effect regression under each benchmark based on the significant results of Breusch-Pagan test and Hausman test, which suggests using fixed effect regression. The significant results of these tests are shown in the table.

Table 4.5 Abnormal tone, and the interaction between discretionary accruals (Modified Jones model) and JMBE

Variable	Dependent variable: Ab_Tone					
	JMBE = 1 when $\Delta EPS \in$					
	[£0, £0.01]		[£0, £0.02]		[£0, £0.03]	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
DA_MJ \times JMBE	-0.004	(0.831)	0.019**	(0.035)	0.020**	(0.025)
DA_MJ	-0.020**	(0.016)	-0.026***	(0.004)	-0.027***	(0.003)
JMBE	0.021	(0.370)	0.017	(0.383)	0.011	(0.525)
ERN	-0.191	(0.245)	-0.185	(0.249)	-0.187	(0.246)
RET	-0.024	(0.127)	-0.024	(0.125)	-0.024	(0.126)
Size	0.124**	(0.020)	0.125**	(0.018)	0.125**	(0.018)
BTM	-0.049*	(0.071)	-0.050*	(0.068)	-0.050*	(0.068)
STD_return	0.137	(0.446)	0.151	(0.403)	0.152	(0.398)
ERN_volatility	-0.410***	(0.009)	-0.387**	(0.016)	-0.389**	(0.015)
Age	0.347***	(0.001)	0.351***	(0.001)	0.350***	(0.001)
Loss	0.007	(0.740)	0.005	(0.784)	0.005	(0.789)
Δ ERN	0.188**	(0.040)	0.193**	(0.033)	0.194**	(0.033)
AFE	-0.110*	(0.062)	-0.114**	(0.050)	-0.114**	(0.050)
AF	0.452***	(0.000)	0.442***	(0.000)	0.445***	(0.000)
PPE	-0.023	(0.671)	-0.021	(0.692)	-0.023	(0.674)
REV_Growth	0.026	(0.543)	0.021	(0.630)	0.021	(0.620)
DEBT_TO_EQY	-0.008	(0.237)	-0.008	(0.240)	-0.008	(0.244)
Issue	-0.006	(0.631)	-0.006	(0.685)	-0.006	(0.676)
FTSE_350	-0.071**	(0.037)	-0.072**	(0.033)	-0.072**	(0.034)
_cons	-0.825***	(0.000)	-0.835***	(0.000)	-0.834***	(0.000)
Year	Included		Included		Included	
Observations with JMBE = 1	31		67		88	
Total number of observations	807		807		807	
Number of groups	197		197		197	
Fstat (Value)	4.46***		5.66***		5.70***	
Mean VIF	4.89		4.94		4.94	
Hausman test-Prob>chi2 (%)	0.110		0.200		0.140	
Breusch-Pagan LM test-Prob>chi2 (%)	0		0		0	
R-squared (%)	9.53		9.92		9.88	

The table shows the panel fixed effect regression results for the association between abnormal tone, and the interaction between discretionary accruals (Modified Jones model) and JMBE (equation 4). Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

It is indicated that in cases when I use **(0.01)** as a target of small positive number to classify firms with just beating the benchmark, only **(31)** observations just beat the target. Furthermore, in a non-tabulated test, there are no significant differences in the mean of discretionary accruals (i.e., both Jones model and modified Jones model proxies) between JMBE and other firms, in cases when **(0.01)** is used as a target of small positive number compared to other targets (i.e. **(0.02)** and **(0.03)**)⁸⁹. This indicates that **(0.01)** target does not motivate firms to use more discretionary accruals to simply achieve this target. This may explain why there is no relationship between earnings management and abnormal tone management when I use **(0.01)** as an earnings target.

4.4.2.2 Real Earnings Management and Abnormal Tone

Table 4.6 presents the regression results of examining the relationship between the interaction between real earnings management and firms that just meet or beat the earnings benchmark, and abnormal of management tone in earnings conference call.⁹⁰ For each earnings target, the interaction between real earnings management and just beating the benchmark is positively and significantly associated with abnormal tone in earnings conference call, suggesting that firms that just hit the earnings benchmark and exercise more real earnings management practices will disclose more abnormal tone in the earnings conference call in order to conceal the real earnings management used to just attaining the earnings benchmark. This supports my hypothesis (H1b) that JMBE

⁸⁹ For each earnings target, I test separately to see if there are significant differences in the mean of discretionary accruals between group of JMBE and other firms, or not. When I use (0.02) or (0.03) of change in earnings per share as a small positive number of earnings target, I find that there are significant differences in the mean of discretionary accruals with higher value for JMBE. In contrast, for (0.01) target, there are no significant differences in the mean of discretionary accruals between JMBE and other firms. These results are not tabulated.

⁹⁰ In Table 4.6, I apply fixed effect regression under each benchmark based on the significant results of Breusch-Pagan test and Hausman test, which suggests using fixed effect regression. The significant results of these tests are shown in the table.

use tone management in the earnings conference call to complete real earnings management.

In addition to the finding of the association between the interaction between firms just beating the benchmark and earnings management, and abnormal tone, in each regression of equation (4), presented in Tables 4.4, 4.5 and 4.6, the results report that abnormal management tone in the earnings conference call is more positive when the firm is large, old, growing, and has high earnings number relative to analyst earnings' forecast. In contrast, it is more negative when the firm has a higher book to market ratio, more volatile earnings, and a higher value of analysts forecast error. Furthermore, the tables show that managers provide more abnormal tone in the year when the firm is excluded from FTSE 350 list.

In sum, the evidence is consistent with the prediction that firms meeting or just beating the target use earnings management and tone management as self-serving behaviour. This suggests that they use earnings management and tone management strategies as complementary, and not substitute, strategies. The results conclude that in cases where firms are just meet or beat the earnings benchmark, managerial tone in earnings conference calls is explained by impression management theory rather than economic theories, and this is in line with Huang et al. (2014) and Schleicher and Walker (2010).

Table 4.6 Abnormal tone, and the interaction between real earnings management and JMBE

Variable	Dependent variable: Ab_Tone					
	JMBE = 1 when $\Delta EPS \in$					
	[£0, £0.01]		[£0, £0.02]		[£0, £0.03]	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
REM \times JMBE	0.021*	(0.061)	0.019***	(0.004)	0.020***	(0.002)
REM	-0.004	(0.309)	-0.009*	(0.074)	-0.009*	(0.052)
JMBE	0.027	(0.308)	0.023	(0.223)	0.016	(0.318)
ERN	-0.162	(0.331)	-0.159	(0.333)	-0.16	(0.331)
RET	-0.024	(0.108)	-0.025*	(0.091)	-0.026*	(0.087)
Size	0.109**	(0.045)	0.108**	(0.047)	0.109**	(0.045)
BTM	-0.048*	(0.078)	-0.050*	(0.071)	-0.049*	(0.074)
STD_return	0.123	(0.495)	0.124	(0.492)	0.123	(0.496)
ERN_volatility	-0.370**	(0.019)	-0.356**	(0.026)	-0.355**	(0.026)
Age	0.324***	(0.003)	0.322***	(0.003)	0.319***	(0.003)
Loss	0.013	(0.525)	0.013	(0.536)	0.013	(0.536)
Δ ERN	0.160*	(0.078)	0.162*	(0.074)	0.161*	(0.075)
AFE	-0.104*	(0.080)	-0.107*	(0.071)	-0.106*	(0.073)
AF	0.433***	(0.000)	0.437***	(0.000)	0.441***	(0.000)
PPE	-0.029	(0.594)	-0.028	(0.606)	-0.03	(0.577)
REV_Growth	0.022	(0.595)	0.017	(0.677)	0.018	(0.665)
DEBT_TO_EQY	-0.008	(0.263)	-0.008	(0.257)	-0.008	(0.265)
Issue	-0.003	(0.813)	-0.002	(0.859)	-0.002	(0.869)
FTSE_350	-0.066**	(0.049)	-0.067**	(0.050)	-0.066*	(0.052)
_cons	-0.753***	(0.001)	-0.745***	(0.001)	-0.745***	(0.001)
Year	Included		Included		Included	
Observations with JMBE = 1	31		67		88	
Total number of observations	814		814		814	
Number of groups	199		199		199	
Fstat (Value)	3.64***		3.89***		3.88***	
Mean VIF	4.95		4.97		4.98	
Hausman test-Prob>chi2 (%)	2.270		1.300		1.060	
Breusch-Pagan LM test-Prob>chi2 (%)	0		0		0	
R-squared (%)	8.95		9.54		9.61	

The table shows the panel fixed effect regression results for the association between abnormal tone, and the interaction between real earnings management and JMBE (equation 4). Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

4.4.3 Analyst Tone Reaction for JMBE in Predicting Future Performance

Table 4.7 below presents the panel fixed effect regression results for H2. Although the sign of the interaction ($\text{Audience_Tone} \times \text{JMBE}$) coefficients under any benchmark are negative consistent with the prediction, the results in this table do not support the prediction as the p values are insignificant under any benchmark. However, it can be observed from Table 4.7 that the p-value of Breusch-Pagan test is insignificant under each benchmark with values (16.39%), (15.73%) and (15.41%) of benchmarks $[\text{£}0, \text{£}0.01]$, $[\text{£}0, \text{£}0.02]$ and $[\text{£}0, \text{£}0.03]$, respectively. This suggests applying pool regression rather than fixed effect regression. Therefore, I apply the pool regression of equation 5 and the results are shown in Table 4.8. The results show that when I use $[\text{£}0, \text{£}0.01]$ as an earnings benchmark of ΔEPS to classify firms that just hit the benchmark, the result of this regression is significant, with a negative sign. The ERN_{t+1} coefficient is (-0.052) with p value (0.042) for the interaction between audience tone and firms that just meet or beat the earnings benchmark. This means that there is a negative association between future performance and the interaction between audience tone and firms that just meet or beat the earnings benchmark in cases when the benchmark used is $[\text{£}0, \text{£}0.01]$. This indicates that the audience tone for firms that meet or just beat last year EPS by $[\text{£}0, \text{£}0.01]$ does not signal information about future performance. This supports the hypothesis (H2) that the tone of the audience in firms that just meet or beat an earnings benchmark companies is less likely to predict future performance than in other firms. This suggests that the perception of the audience about future performance is managed by managers' tone. Clearly, the result confirms that the audience of the earnings conference call is affected by managers' tone, since the paper finds that managers' tone for JMBE is used as impression management practice.

Although the results are insignificant when I apply [£0, £0.02] and [£0, £0.03] as earnings benchmarks, the sign of the interaction (Audience_Tone \times JMBE) coefficients in these cases are negative, which is consistent with the prediction. I also apply different robustness tests to check the original results. I apply different earnings benchmark. I find some results support the prediction. Robustness checks for H2 are shown in Section 4.5.2.2.

Table 4.7 Future financial performance and the interaction between audience tone and JMBE

Variable	Dependent variable: Future performance (ERN _{t+1})					
	JMBE = 1 when $\Delta\text{EPS} \in$					
	[£0, £0.01]		[£0, £0.02]		[£0, £0.03]	
	Coefficien t	p- Value	Coefficien t	p- Value	Coefficien t	p- Value
Audience_Tone \times JMBE	-0.007	(0.751)	-0.022	(0.264)	-0.017	(0.420)
Audience_Tone	0.016	(0.180)	0.018	(0.155)	0.017	(0.158)
JMBE	-0.002	(0.839)	0.010	(0.197)	0.007	(0.243)
DA_MJ	0.009*	(0.060)	0.009*	(0.057)	0.009*	(0.059)
ERN	0.136	(0.115)	0.134	(0.119)	0.133	(0.123)
RET	0.015**	(0.011)	0.016***	(0.010)	0.015***	(0.010)
Size	0.012	(0.573)	0.013	(0.552)	0.013	(0.537)
BTM	-0.023***	(0.004)	-0.023***	(0.003)	-0.023***	(0.003)
STD_return	-0.126	(0.255)	-0.124	(0.256)	-0.122	(0.266)
ERN_volatility	0.036	(0.835)	0.046	(0.788)	0.046	(0.790)
Loss	0.008	(0.541)	0.009	(0.508)	0.008	(0.521)
FTSE_350	-0.004	(0.727)	-0.006	(0.618)	-0.005	(0.631)
_cons	0.014	(0.864)	0.012	(0.882)	0.010	(0.904)
Year	Included		Included		Included	
Observations with JMBE = 1	31		69		92	

Number of observations	833	833	833
Number of groups	202	202	202
Fstat (Value)	7.52***	7.79***	7.81***
Mean VIF	4.14	4.19	4.21
Hausman test- Prob>chi2 (%)	0.000	0.000	0.000
Breusch-Pagan LM test- Prob>chi2 (%)	16.39	15.73	15.41
R-squared (%)	18.00	18.40	18.29

The table presents the panel fixed effect regression results for the association between future performance and the interaction between audience tone and JMBE (equation 5). Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

Table 4.8 Future financial performance and the interaction between audience tone and JMBE by applying pool regression

Variable	Dependent variable: Future performance (ERN_{t+1})					
	JMBE = 1 when $\Delta EPS \in$					
	[£0, £0.01]		[£0, £0.02]		[£0, £0.03]	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
Audience_Tone \times JMBE	-0.052**	(0.042)	-0.028	(0.214)	-0.021	(0.346)
Audience_Tone	0.024**	(0.012)	0.024**	(0.015)	0.024**	(0.016)
JMBE	-0.011	(0.192)	0.003	(0.707)	-0.000	(0.975)
DA_MJ	0.005	(0.203)	0.004	(0.241)	0.004	(0.216)
ERN	0.482***	(0.000)	0.481***	(0.000)	0.482***	(0.000)
RET	0.021***	(0.000)	0.021***	(0.000)	0.021***	(0.000)
Size	0.001	(0.750)	0.002	(0.660)	0.002	(0.695)
BTM	-0.015***	(0.001)	-0.014***	(0.001)	-0.014***	(0.001)
STD_return	-0.135	(0.112)	-0.129	(0.129)	-0.130	(0.125)
ERN_volatility	-0.028	(0.585)	-0.026	(0.613)	-0.026	(0.614)
Loss	0.006	(0.556)	0.006	(0.556)	0.006	(0.562)
FTSE_350	0.001	(0.912)	0.002	(0.880)	0.002	(0.894)
_cons	0.052**	(0.013)	0.049**	(0.019)	0.050**	(0.017)
Year	Included		Included		Included	
Industry	Included		Included		Included	
Number of observations	833		833		833	
F stat (value)	15.220***		15.182**		15.352**	
Mean VIF	1.47		1.50		1.50	
R-squared (%)	43.23		43.29		43.19	

The table presents the pool regression results for the association between future performance and the interaction between audience tone and JMBE (equation 5). All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

4.5 Additional analyses and robustness checks

I first offer additional analyses of the tone in the earnings conference call. Then, I apply several robustness checks on the original results.

4.5.1 Additional analyses

I show some analyses, which can be added to the literature related to the tone in the UK's earnings conference call. Firstly, I test the abnormal management tone differences

between JMBE and other firms. Then, I analyse the difference between the managers' and audience's tone in UK earnings conference call.

4.5.1.1 Abnormal management tone differences between JMBE and other firms

I test to see whether there are significant differences in the mean of abnormal management positive tone in earnings conference calls between JMBE and in other firms. Table 4.9 below presents the results. It shows that the mean of abnormal management positive tone for JMBE differs significantly than other firms with high value of mean for JMBE. In line with Davis and Tama-Sweet (2012), Huang et al. (2014) and Iatridis (2016), the result indicates that firms that just hit last year earnings by a small positive number provide more abnormal optimistic tone than do other firms. This result is consistent with the whole set of small positive numbers ([£0, £0.01], [£0, £0.02], and [£0, £0.03]). It also can be noticed from the table that firms that just beat the earnings target manipulate positively in their words, while in other firms, managers use their discretion in disclosing negative words slightly more than positive words during earnings conference call. Table 4.9 also shows that the average of abnormal management tone is reduced while the range of beating the benchmark is increased. For example, the average of Ab_Tone is (0.041) for JMBE with [£0, £0.02], which is less than, (0.054), the average for firms that hit the benchmark with [£0, £0.01], and the average of Ab_Tone for firms that beat the earnings benchmark with [£0, £0.03] is (0.033), which is less than the average for firms that hit the benchmark with [£0, £0.02]. In sum, the results indicate that for JMBE, managers manipulate their tone more positively when the change in earnings per share is closer to zero in the purpose of distorting users' perception about this behaviour "meeting or just beating the earnings benchmark".

Table 4.9 Abnormal tone differences between JMBE and other firms

Δ EPS €:	No. of Observations that just beat the benchmark	No. of Observations that miss the benchmark or beat more than the benchmark	Ab_Tone for JMBE	Ab_Tone for other firms	Ab_Tone differences	p-Value
[£0, £0.01]	31	783	0.054	-0.002	-0.057**	(0.04)
[£0, £0.02]	67	747	0.041	-0.004	-0.044**	(0.021)
[£0, £0.03]	88	726	0.033	-0.004	-0.037**	(0.030)

p-values are in parentheses. ** denotes statistical significance at the 5% level. The benchmark used is last year EPS. All variables are defined in Appendix F.

4.5.1.2 The difference between managers' tone and audience's tone in earnings conference call

I analyse the differences between management tone and audience tone in earnings conference call. The results show that managers are much more optimistic in their word than the audience, who attend the earnings conference call where the average of optimistic management tone is (0.340) while the average of optimistic audience tone is (-0.259).⁹¹ Figures 4.2 and 4.3 show the difference between managers and the audience tone, where most of the managers' tone is more than zero. In contrast, most of the audience's tone is less than zero, which indicates that the audience speak pessimistically during the call.

⁹¹ Table 4.1 shows the descriptive statistics of these two variables.

Figure 4.2 Management Tone

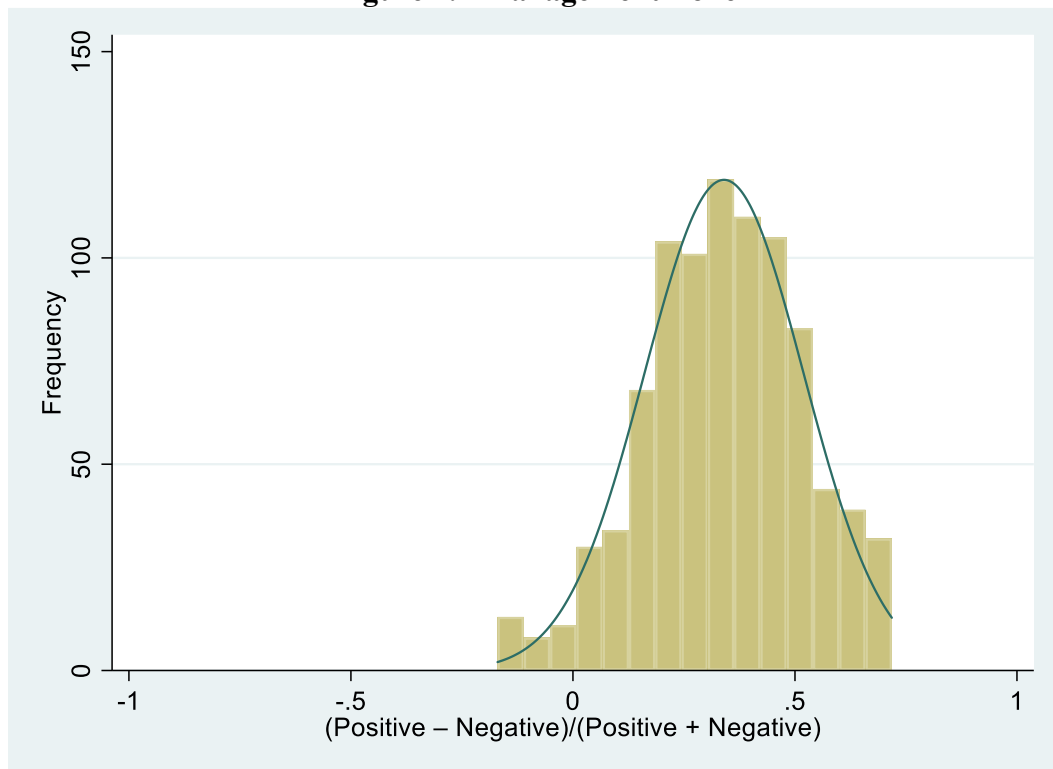
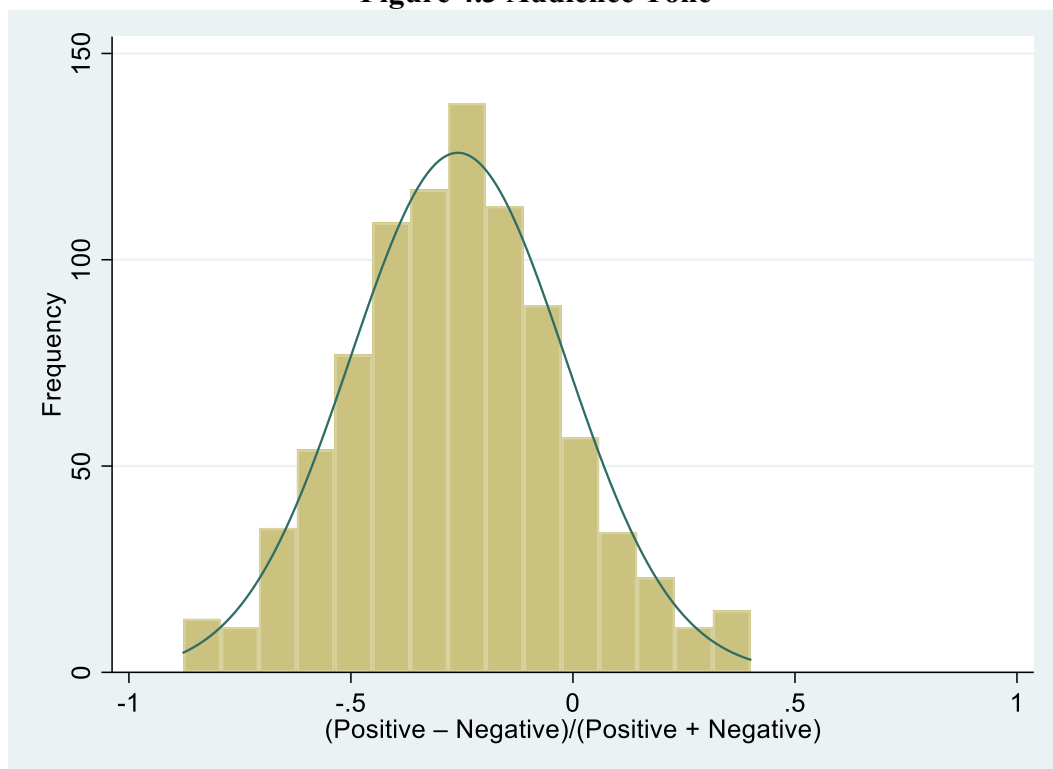


Figure 4.3 Audience Tone



Furthermore, I test to see whether there are significant differences in the mean of management and audience tone. Panel A of Table 4.10 shows that there is a significant difference between the mean of management tone and the mean of audience tone.

It can be observed from Table 4.10 that the number of observations of management tone in the sample is 901, whereas the number of observations of audience tone is 896. The difference in the number of observations is attributed to those four transcripts of earnings conference calls' transcripts in the samples which do not have any question or comment from the audience, and one transcript which does not have any positive or negative word from Loughran and McDonald (2011) list of words in the audience text.

In Panel B of Table 4.10, I divide management tone and audience tone into three sub-groups (low, medium and high) by sorting them based on terciles according to the separated dimensions (Management Tone and Audience Tone), and then I perform difference-in-means tests within each group. The purpose of these tests is to determine whether the significantly large result in Panel A is distributed over the whole sample or whether it is evenly derived by a subset of the sample. The first sort is based on management tone, while the second sort is based on audience tone. In each tercile, the results show significant differences between management tone and audience tone, with greater value for management tone (all p-values = 0.00). This suggests that managers significantly employ more optimistic tones in their speaking than the audience of UK earnings conference call. This is consistent with Brockman et al. (2015) who find that managers' tone is greatly more positive than analysts' tone in US earnings conference call.

Table 4.10 Management and Audience Tone Differences

	No. of Observations	Management Tone	Audience Tone	Tone Difference	p-Value
A. Tone differences	901 management, 896 audience	0.340	-0.259	0.599***	(0.00)
B. Tone differences by tercile					
Management Tone sort	No. of Observations	Management Tone	Audience Tone	Tone Difference	p-Value
Low	301 management, 299 audience	0.144	-0.333	0.477***	(0.00)
Medium	300 management, 299 audience	0.346	-0.254	0.600***	(0.00)
High	300 management, 298 audience	0.532	-0.189	0.721***	(0.00)
Audience Tone sort					
Low	301 management, 298 audience	0.388	-0.378	0.766***	(0.00)
Medium	300 management, 300 audience	0.366	-0.271	0.638***	(0.00)
High	300 management, 298 audience	0.266	-0.128	0.394***	(0.00)

p-values are in parentheses. *** denotes statistical significance at the 1% level.

4.5.2 Robustness checks

In term of the earnings benchmark, I follow Lo et al. (2017) in using last year's earnings before extra-ordinary item divided by total asset as an alternative earnings benchmark. I also use several ranges of values to consider whether firms meet or just beat this benchmark so as to ensure the robustness of results. The range values are shown in each table below. In this case, I define the variable $JMBE=1$, when $(\Delta \text{ Earnings}/TA)$ belongs to each of the range value shown in the table separately, otherwise $JMBE=0$.⁹²

I also use last year's return on equity (ROE) calculated by last year's net profit divided by last year's total common equity as another earnings benchmark. Similar to other benchmarks, I also use several ranges of values to consider whether firms meet or just beat this benchmark. In this case, I define the variable $JMBE=1$, when $(\Delta \text{ ROE})$ belongs to each of the range value shown in each table; otherwise $JMBE=0$.⁹³ The results vary depending on the earnings benchmark used, whether is $(\Delta \text{ Earnings}/TA)$ or $(\Delta \text{ ROE})$. This could be because the basis of each derived benchmark is different. For example, $(\Delta \text{ Earnings}/TA)$ is derived based on operating profit, while $(\Delta \text{ ROE})$ is derived based on net profit. However, most of the results support the original results. The group of tables below show the supportive results to my prediction and original results under different ranges of benchmarks.

⁹² $\Delta \text{ Earnings}$, is the change in earnings before extraordinary item from year t-1 to year t. TA, is total assets in year t.

⁹³ $\Delta \text{ ROE}$, is the change in return on equity from year t-1 to year t.

4.5.2.1 Robustness checks for H1

Tables 4.11 and 4.12 present the results of testing H1a using ($\Delta\text{Earnings}/\text{TA}$) as an alternative earnings benchmark. The results are robust using different of ranges values. However, when using this earning benchmark with real earnings management (i.e., H1b), the results are only robust with the range [$\pounds 0$, $\pounds 0.003$] as shown in Table 4.13.⁹⁴

⁹⁴ Fixed effect regression is applied in Tables 4.11, 4.12, 4.13 under each benchmark based on the significant results of Breusch-Pagan test and Hausman test, which suggest using fixed effect regression.

Table 4.11 Abnormal tone, and the interaction between discretionary accruals (Jones model) and JMBE using an alternative earnings benchmark measure

Variable	Dependent variable: Ab_Tone, JMBE = 1 when (Δ Earnings/TA) \in							
	[0,0.3%]		[0,0.4%]		[0,0.5%]		[0,0.6%]	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
DA_J \times JMBE	0.085**	(0.039)	0.053**	(0.030)	0.038**	(0.029)	0.041**	(0.021)
DA_J	-0.023***	(0.002)	-0.024***	(0.002)	-0.025***	(0.001)	-0.025***	(0.001)
JMBE	-0.031	(0.198)	-0.026	(0.228)	0.007	(0.715)	0.009	(0.628)
ERN	-0.181	(0.272)	-0.187	(0.255)	-0.191	(0.246)	-0.193	(0.239)
RET	-0.023	(0.136)	-0.022	(0.155)	-0.024	(0.119)	-0.025	(0.114)
Size	0.132**	(0.014)	0.132**	(0.014)	0.134**	(0.013)	0.133**	(0.013)
BTM	-0.049*	(0.069)	-0.049*	(0.069)	-0.05*	(0.063)	-0.051*	(0.059)
STD_return	0.141	(0.430)	0.13	(0.468)	0.141	(0.430)	0.144	(0.421)
ERN_volatility	-0.422***	(0.007)	-0.415***	(0.009)	-0.425***	(0.007)	-0.425***	(0.007)
Age	0.351***	(0.001)	0.342***	(0.001)	0.342***	(0.001)	0.342***	(0.001)
Loss	0.007	(0.732)	0.005	(0.791)	0.008	(0.704)	0.008	(0.703)
Δ ERN	0.187**	(0.040)	0.193**	(0.034)	0.199**	(0.029)	0.201**	(0.028)
AFE	-0.114*	(0.054)	-0.116**	(0.049)	-0.116**	(0.049)	-0.118**	(0.045)
AF	0.46***	(0.000)	0.458***	(0.000)	0.464***	(0.000)	0.462***	(0.000)
PPE	-0.024	(0.661)	-0.023	(0.667)	-0.02	(0.718)	-0.019	(0.730)
REV_Growth	0.02	(0.632)	0.019	(0.657)	0.019	(0.664)	0.018	(0.673)
DEBT_TO_EQY	-0.007	(0.288)	-0.007	(0.270)	-0.007	(0.287)	-0.007	(0.287)
Issue	-0.005	(0.709)	-0.005	(0.728)	-0.006	(0.641)	-0.007	(0.631)
FTSE_350	-0.07**	(0.034)	-0.071**	(0.032)	-0.071**	(0.032)	-0.071**	(0.031)
_cons	-0.858***	(0.000)	-0.843***	(0.000)	-0.854***	(0.000)	-0.854***	(0.000)
Year	Included		Included		Included		Included	
Number of observations	814		814		814		814	
R-squared (%)	10.05		10.03		9.94		10.02	

The table shows the panel fixed effect regression results when using an alternative earnings benchmark measure for the association between abnormal tone, and the interaction between discretionary accruals (Jones model) and JMBE (equation 4). Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

Table 4.12 Abnormal tone, and the interaction between discretionary accruals (Modified Jones model) and JMBE using an alternative earnings benchmark measure

Variable	Dependent variable: Ab_Tone, JMBE = 1 when (Δ Earnings/TA) \in							
	[0,0.3%]		[0,0.4%]		[0,0.5%]		[0,0.6%]	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
DA_MJ \times JMBE	0.091**	(0.029)	0.057**	(0.025)	0.040**	(0.027)	0.042**	(0.018)
DA_MJ	-0.022***	(0.008)	-0.022***	(0.007)	-0.023***	(0.004)	-0.023***	(0.004)
JMBE	-0.038	(0.112)	-0.03	(0.161)	0.004	(0.837)	0.006	(0.728)
ERN	-0.175	(0.285)	-0.183	(0.265)	-0.189	(0.250)	-0.189	(0.248)
RET	-0.023	(0.135)	-0.022	(0.150)	-0.024	(0.113)	-0.025	(0.110)
Size	0.126**	(0.018)	0.127**	(0.017)	0.129**	(0.016)	0.130**	(0.015)
BTM	-0.048*	(0.075)	-0.048*	(0.075)	-0.049*	(0.071)	-0.050*	(0.067)
STD_return	0.133	(0.458)	0.123	(0.497)	0.134	(0.455)	0.135	(0.453)
ERN_volatility	-0.407***	(0.010)	-0.400**	(0.012)	-0.413***	(0.009)	-0.414***	(0.008)
Age	0.354***	(0.001)	0.344***	(0.001)	0.344***	(0.001)	0.345***	(0.001)
Loss	0.006	(0.751)	0.005	(0.815)	0.007	(0.723)	0.007	(0.715)
Δ ERN	0.174*	(0.054)	0.181**	(0.045)	0.188**	(0.039)	0.188**	(0.038)
AFE	-0.111*	(0.061)	-0.113*	(0.055)	-0.113*	(0.056)	-0.114*	(0.052)
AF	0.455***	(0.000)	0.454***	(0.000)	0.46***	(0.000)	0.459***	(0.000)
PPE	-0.025	(0.641)	-0.025	(0.649)	-0.021	(0.697)	-0.020	(0.707)
REV_Growth	0.027	(0.535)	0.025	(0.565)	0.024	(0.571)	0.024	(0.576)
DEBT_TO_EQY	-0.008	(0.266)	-0.008	(0.249)	-0.008	(0.266)	-0.007	(0.270)
Issue	-0.004	(0.768)	-0.004	(0.784)	-0.005	(0.691)	-0.006	(0.680)
FTSE_350	-0.069**	(0.037)	-0.069**	(0.036)	-0.069**	(0.037)	-0.069**	(0.037)
_cons	-0.845***	(0.000)	-0.831***	(0.000)	-0.844***	(0.000)	-0.846***	(0.000)
Year	Included		Included		Included		Included	
Number of observations	807		807		807		807	
R-squared (%)	9.94		9.91		9.70		9.77	

The table shows the panel fixed effect regression results when using an alternative earnings benchmark measure for the association between abnormal tone, and the interaction between discretionary accruals (Modified Jones model) and JMBE (equation 4). Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

Table 4.13 Abnormal tone and the interaction between real earnings management and JMBE using an alternative earnings benchmark measure

Dependent variable: Ab_Tone, JMBE = 1 when $(\Delta \text{Earnings/TA}) \in [0, 0.3\%]$

Variable	Coefficient	p-Value
REM \times JMBE	0.102**	(0.023)
REM	-0.004	(0.419)
JMBE	-0.033	(0.176)
ERN	-0.155	(0.353)
RET	-0.025*	(0.093)
Size	0.112**	(0.041)
BTM	-0.046*	(0.090)
STD_return	0.106	(0.554)
ERN_volatility	-0.380**	(0.016)
Age	0.340***	(0.001)
Loss	0.012	(0.552)
Δ ERN	0.154*	(0.091)
AFE	-0.106*	(0.072)
AF	0.435***	(0.000)
PPE	-0.03	(0.585)
REV_Growth	0.024	(0.573)
DEBT_TO_EQY	-0.007	(0.315)
Issue	-0.002	(0.885)
FTSE_350	-0.061*	(0.068)
_cons	-0.790***	(0.001)
Year	Included	
Number of observations	814	
R-squared (%)	9.13	

The table shows the panel fixed effect regression results when using an alternative earnings benchmark measure for the association between abnormal tone and the interaction between real earnings management and JMBE (equation 4). Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

I also test H1a using (ΔROE) as an earnings benchmark, but the results under this benchmark are insignificant. The results are not reported, but they are available on request.⁹⁵ I also test H1b using (ΔROE) as an earnings benchmark, and the results

⁹⁵ In unreported results, I apply fixed effect regression under each range value of the (ΔROE) benchmark based on the significant results of Breusch-Pagan test and Hausman test, which suggests using fixed effect regression. The range values used under this benchmark is similar to those used under the $(\Delta \text{Earnings/TA})$ benchmark.

support the prediction and the original results. Table 4.14 below presents the results of testing H1b using (Δ ROE) as an earnings benchmark.⁹⁶

I also test the regression of equation 4 (i.e., H1a, and H1b), but using management tone as a whole, rather than the abnormal management tone, as a dependent variable. Tables 4.15, 4.16 and 4.17 show that all of the results are consistent with my original results.⁹⁷

⁹⁶ In this table, fixed effect regression under each range value of the benchmark is applied based on the significant results of Breusch-Pagan test and Hausman test, which suggests using fixed effect regression.

⁹⁷ Fixed effect regressions are applied in Tables 4.15, 4.16 and 4.17 under each benchmark based on the significant results of Breusch-Pagan test and Hausman test, which suggest using fixed effect regression.

Table 4.14 Abnormal tone, and the interaction between real earnings management and JMBE using an alternative earnings benchmark measure (Δ ROE)

Variable	Dependent variable: Ab_Tone JMBE = 1 when (Δ ROE) \in											
	[0,0.1%]		[0,0.2%]		[0,0.3%]		[0,0.4%]		[0,0.5%]		[0,0.6%]	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
REM \times JMBE	0.466* **	(0.000)	0.184* **	(0.000)	0.180* **	(0.000)	0.145* **	(0.001)	0.102* *	(0.025)	0.073* *	(0.058)
REM	-0.003	(0.447)	-0.003	(0.457)	-0.003	(0.458)	-0.004	(0.416)	-0.003	(0.444)	-0.003	(0.438)
JMBE	-0.052	(0.225)	0.003	(0.918)	-0.002	(0.942)	0.011	(0.698)	0.008	(0.760)	0.013	(0.566)
ERN	-0.158	(0.342)	-0.164	(0.326)	-0.164	(0.325)	-0.164	(0.324)	-0.167	(0.318)	-0.171	(0.308)
RET	-0.025*	(0.094)	-0.024	(0.108)	-0.025	(0.104)	-0.025	(0.103)	-0.026*	(0.092)	-0.025*	(0.099)
Size	0.106*	(0.051)	0.106*	(0.052)	0.107* *	(0.050)	0.107*	(0.050)	0.108* *	(0.048)	0.112* *	(0.041)
BTM	-0.046*	(0.095)	-0.047*	(0.086)	-0.046*	(0.088)	-0.047*	(0.086)	-0.050*	(0.074)	-0.050*	(0.072)
STD_return	0.092	(0.606)	0.097	(0.588)	0.099	(0.579)	0.093	(0.604)	0.097	(0.591)	0.106	(0.556)
ERN_volatility	- 0.382* *	(0.016)	- 0.386* *	(0.014)	- 0.387* *	(0.013)	- 0.386* *	(0.014)	- 0.392* *	(0.013)	- 0.387* *	(0.015)
Age	0.336* **	(0.001)	0.336* **	(0.001)	0.336* **	(0.001)	0.334* **	(0.001)	0.336* **	(0.001)	0.330* **	(0.002)
Loss	0.012	(0.561)	0.012	(0.558)	0.012	(0.559)	0.012	(0.562)	0.012	(0.564)	0.011	(0.574)
Δ ERN	0.161*	(0.079)	0.165*	(0.070)	0.166*	(0.069)	0.164*	(0.072)	0.168*	(0.066)	0.164*	(0.071)
AFE	-0.103*	(0.081)	-0.105*	(0.074)	-0.105*	(0.075)	-0.106*	(0.072)	-0.110*	(0.064)	-0.108*	(0.069)
AF	0.431* **	(0.000)	0.425* **	(0.000)	0.425* **	(0.000)	0.428* **	(0.000)	0.427* **	(0.000)	0.434* **	(0.000)
PPE	-0.031	(0.569)	-0.029	(0.592)	-0.029	(0.599)	-0.029	(0.598)	-0.027	(0.614)	-0.024	(0.654)
REV_Growth	0.027	(0.519)	0.027	(0.516)	0.027	(0.521)	0.026	(0.537)	0.022	(0.598)	0.020	(0.627)
DEBT_TO_EQ Y	-0.007	(0.288)	-0.008	(0.274)	-0.008	(0.274)	-0.007	(0.277)	-0.008	(0.268)	-0.008	(0.263)

Issue	-0.005	(0.711)	-0.004	(0.747)	-0.004	(0.751)	-0.004	(0.754)	-0.003	(0.826)	-0.003	(0.801)
FTSE_350	-0.063*	(0.057)	-0.064*	(0.054)	-0.064*	(0.054)	-0.064*	(0.055)	-0.065*	(0.051)	0.069*	(0.042)
_cons	-		-		-		-		-		-	
	0.754*	(0.001)	0.752*	(0.001)	0.756*	(0.001)	0.754*	(0.001)	0.761*	(0.001)	0.764*	(0.001)
	**		**		**		**		**		**	
Year	Include		Include		Include		Include		Include		Include	
Number of observations	d		d		d		d		d		d	
	814		814		814		814		814		814	
R-squared (%)	9.48		9.53		9.49		9.33		9.02		8.9	

The table shows the panel fixed effect regression results when using an alternative earnings benchmark measure for the association between abnormal tone and the interaction between real earnings management and JMBE (equation 4). Standard errors are clustered at the firm level. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ROE: namely is return on Equity, which is net profit divided by total common equity. All other variables are described in Appendix F.

Table 4.15 Management tone, and the interaction between discretionary accruals (Jones model) and JMBE

Variable	Dependent variable: TONE					
	JMBE = 1 when $\Delta EPS \in$					
	[£0, £0.01]		[£0, £0.02]		[£0, £0.03]	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
DA_J \times JMBE	0.000	(1.000)	0.021***	(0.008)	0.022***	(0.005)
DA_J	-0.023***	(0.004)	-0.029***	(0.000)	-0.030***	(0.000)
JMBE	0.021	(0.384)	0.014	(0.462)	0.008	(0.623)
ERN	0.356**	(0.018)	0.364**	(0.013)	0.362**	(0.014)
RET	0.001	(0.949)	0.001	(0.948)	0.001	(0.939)
Size	0.141***	(0.005)	0.142***	(0.005)	0.142***	(0.005)
BTM	-0.040	(0.144)	-0.041	(0.137)	-0.041	(0.137)
STD_return	-0.108	(0.570)	-0.095	(0.617)	-0.094	(0.621)
ERN_volatility	-0.510***	(0.001)	-0.487***	(0.002)	-0.490***	(0.002)
Age	0.318***	(0.003)	0.322***	(0.002)	0.322***	(0.002)
Loss	-0.007	(0.730)	-0.008	(0.679)	-0.008	(0.674)
Δ ERN	0.154*	(0.088)	0.158*	(0.076)	0.159*	(0.077)
AFE	-0.091	(0.136)	-0.095	(0.111)	-0.095	(0.112)
AF	0.387***	(0.000)	0.377***	(0.000)	0.380***	(0.000)
PPE	-0.023	(0.682)	-0.022	(0.697)	-0.023	(0.682)
REV_Growth	-0.011	(0.775)	-0.017	(0.667)	-0.017	(0.678)
DEBT_TO_EQY	-0.007	(0.299)	-0.007	(0.302)	-0.007	(0.305)
Issue	-0.007	(0.584)	-0.006	(0.645)	-0.006	(0.634)
FTSE_350	-0.077**	(0.032)	-0.078**	(0.030)	-0.077**	(0.030)
_cons	-0.505**	(0.017)	-0.514**	(0.013)	-0.514**	(0.013)
Year	Included		Included		Included	
Number of observations	814		814		814	
R-squared (%)	17.76		18.14		18.12	

The table shows the panel fixed effect regression results for the association between management tone, and the interaction between discretionary accruals (Jones model) and JMBE. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

Table 4.16 Management tone, and the interaction between discretionary accruals (Modified Jones model) and JMBE

Variable	Dependent variable: TONE					
	JMBE = 1 when $\Delta EPS \in$					
	[£0, £0.01]		[£0, £0.02]		[£0, £0.03]	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
DA_MJ \times JMBE	-0.006	(0.709)	0.020**	(0.022)	0.021**	(0.015)
DA_MJ	-0.021**	(0.013)	-0.027***	(0.002)	-0.028***	(0.002)
JMBE	0.022	(0.351)	0.015	(0.455)	0.009	(0.618)
ERN	0.358**	(0.017)	0.365**	(0.013)	0.364**	(0.013)
RET	0.0004	(0.981)	0.000	(0.975)	0.001	(0.967)
Size	0.137***	(0.007)	0.138***	(0.006)	0.138***	(0.006)
BTM	-0.039	(0.155)	-0.040	(0.150)	-0.040	(0.150)
STD_return	-0.112	(0.557)	-0.099	(0.604)	-0.098	(0.608)
ERN_volatility	-0.498***	(0.001)	-0.475***	(0.003)	-0.478***	(0.002)
Age	0.321***	(0.003)	0.325***	(0.002)	0.325***	(0.002)
Loss	-0.007	(0.713)	-0.008	(0.668)	-0.008	(0.664)
Δ ERN	0.143	(0.111)	0.147*	(0.097)	0.148*	(0.098)
AFE	-0.087	(0.153)	-0.091	(0.129)	-0.091	(0.130)
AF	0.382***	(0.000)	0.373***	(0.001)	0.376***	(0.001)
PPE	-0.024	(0.673)	-0.023	(0.684)	-0.024	(0.669)
REV_Growth	-0.006	(0.881)	-0.011	(0.775)	-0.011	(0.787)
DEBT_TO_EQY	-0.008	(0.278)	-0.008	(0.283)	-0.008	(0.286)
Issue	-0.007	(0.622)	-0.006	(0.677)	-0.006	(0.664)
FTSE_350	-0.076**	(0.035)	-0.076**	(0.032)	-0.076**	(0.033)
_cons	-0.496**	(0.020)	-0.505**	(0.015)	-0.504**	(0.015)
Year	Included		Included		Included	
Number of observations	807		807		807	
R-squared (%)	17.59		17.93		17.90	

The table shows the panel fixed effect regression results for the association between management tone, and the interaction between discretionary accruals (Modified Jones model) and JMBE. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

Table 4.17 Management tone, and the interaction between real earnings management and JMBE

Variable	Dependent variable: TONE					
	JMBE = 1 when $\Delta EPS \in$					
	[£0, £0.01]		[£0, £0.02]		[£0, £0.03]	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
REM \times JMBE	0.019*	(0.084)	0.018***	(0.003)	0.020***	(0.002)
REM	-0.004	(0.359)	-0.008*	(0.083)	-0.009*	(0.059)
JMBE	0.027	(0.311)	0.021	(0.269)	0.014	(0.384)
ERN	0.388**	(0.011)	0.392***	(0.009)	0.392***	(0.009)
RET	0.000	(0.978)	-0.001	(0.932)	-0.002	(0.921)
Size	0.121**	(0.020)	0.119**	(0.020)	0.120**	(0.019)
BTM	-0.038	(0.166)	-0.040	(0.153)	-0.039	(0.158)
STD_return	-0.127	(0.510)	-0.126	(0.515)	-0.128	(0.508)
ERN_volatility	-0.456***	(0.003)	-0.443***	(0.005)	-0.442***	(0.005)
Age	0.298***	(0.006)	0.296***	(0.006)	0.293***	(0.006)
Loss	0.000	(0.980)	-0.001	(0.964)	-0.001	(0.965)
Δ ERN	0.115	(0.205)	0.115	(0.200)	0.115	(0.203)
AFE	-0.081	(0.191)	-0.084	(0.174)	-0.083	(0.178)
AF	0.361***	(0.001)	0.365***	(0.001)	0.370***	(0.001)
PPE	-0.030	(0.604)	-0.029	(0.614)	-0.031	(0.589)
REV_Growth	-0.009	(0.813)	-0.014	(0.724)	-0.013	(0.737)
DEBT_TO_EQY	-0.007	(0.302)	-0.008	(0.299)	-0.007	(0.306)
Issue	-0.003	(0.810)	-0.003	(0.852)	-0.002	(0.859)
FTSE_350	-0.071**	(0.047)	-0.071**	(0.048)	-0.071**	(0.049)
_cons	-0.419*	(0.057)	-0.411*	(0.059)	-0.411*	(0.058)
Year	Included		Included		Included	
Number of observations	814		814		814	
R-squared (%)	16.89		17.40		17.46	

The table shows the panel fixed effect regression results for the association between management tone, and the interaction between real earnings management and JMBE. Standard errors are clustered at the firm level. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All variables are defined in Appendix F.

The original analyses on equation 4 are based on the association between the interaction between earnings management and JMBE, and abnormal tone, being linear. However, the results will be incorrect if the association is non-linear. To check if the association is linear or not, I test the following non-linear regression model:⁹⁸

⁹⁸ All variables are defined in Appendix F.

$$\begin{aligned} \text{Ab_Tone}_{it} = & a_0 + a_1 (\text{EM}_{it} \times \text{JMBE}_{it})^2 + a_2 (\text{EM}_{it} \times \text{JMBE}_{it}) + a_3 \text{EM}_{it} + a_4 \text{JMBE}_{it} + \\ & a_5 \text{ERN}_{it} + a_6 \text{RET}_{it} + a_7 \text{Size}_{it} + a_8 \text{BTM}_{it} + a_9 \text{STD_RET}_{it} + a_{10} \text{ERN_volatility}_{it} + a_{11} \text{Age}_{it} \\ & + a_{12} \text{Loss}_{it} + a_{13} \Delta \text{ERN}_{it} + a_{14} \text{AFE}_{it} + a_{15} \text{AF}_{it} + a_{16} \text{PPE}_{it} + a_{17} \text{REV_Growth}_{it} + a_{18} \text{DEB} \\ & \text{T_TO_EQY}_{it} + a_{19} \text{issue}_{it} + a_{20} \text{FTSE_350}_{it} + \text{Year}_t + e_{it} \end{aligned}$$

The results are insignificant under any earnings benchmark used. This indicates that the association is linear and my main results are correct.⁹⁹

Regarding tone measure, as information users, they might be more concerned with either ‘positive’ or ‘negative’ tone rather than the difference between the frequencies between them. In other words, a change of tone from 1 to 3 (2 scale difference) would be less interesting to users when a company changes its tone from -1 to 1 (2 scale). Therefore, it might be interesting to measure tone by dummy variable. In further analysis, I tried to retest my main test (equation 4) by applying a dummy variable as a measure of tone. In this case, the logit regression needs to be run, as the dependent variable is dummy variable. Because I have panel data, I have to use conditional fixed effect logit regression. Under this approach, each firm must have two values for dependent variable (i.e., 1 and 0) (Williams, 2018). The dependent variable in this case is a dummy variable, which equal 1 for firms that provide positive words more than negative words, and 0 for firms that provide negative words more than positive words. In other words, if the dependent variable for a firm has only 1 for all years in the sample, the firm must be excluded from the sample (Williams, 2018). In my case, most firms provide positive words more than negative words. Only few firms provide negative words more than positive words. After excluding firms that do not have two values for the dependent variable, I obtained only 78 observations; under logit regression, I must have at least 500 observations. Therefore, logit regression is not

⁹⁹ The results are not reported.

applicable in my case. To resolve this issue, I eliminated the observations which have negative words more than positive words, which are only 31 observations. Then, I run panel fixed effect regression on the subsample that includes firms which have positive words more than negative words. The results are similar to my original results.¹⁰⁰

4.5.2.2 Robustness checks for H2

I test H2 using (Δ Earnings/TA) as an earnings benchmark, but the results under this benchmark are insignificant. The results are not reported, but they are available on request.¹⁰¹ I also test H2 using (Δ ROE) as an earnings benchmark, and the results support my prediction and the original results. Table 4.18 below presents the panel fixed effect regression results of testing H2 (equation 5) using (Δ ROE) as an alternative earnings benchmark. The results are robust using this benchmark with different ranges values shown in the table. However, the p-value of Breusch-Pagan test is insignificant under each range value of this benchmark.¹⁰² This suggests applying pool regression rather than fixed effect regression. Therefore, I apply pool regression to test H2 (equation 5) using (Δ ROE) as an alternative earnings benchmark. The results in this case are robust using this benchmark, with different ranges values that are presented in Table 4.19.

I also retest H2 (equation 5), but with using ROS_{t+1} as a dependent variable instead of ERN_{t+1} .¹⁰³ The results are insignificant in this case, but the sign of the interaction

¹⁰⁰ The results are not reported.

¹⁰¹ In the unreported results, I apply fixed effect regression under each range value of (Δ Earnings/TA) benchmark to test H2, but results are insignificant. I also applied pool regression as the result of Breusch-Pagan test is insignificant, which suggests using pool regression. However, the results are also insignificant in this case. The range values used under this benchmark are similar to those used to test H1a and H1b. Results under this benchmark are not reported.

¹⁰² The Breusch-Pagan test's results are not reported.

¹⁰³ ROS_{t+1} : is the future return on sales, which is next year's earnings before extra-ordinary item divided by next year sales revenues.

(Audience_Tone \times JMBE) coefficients are negative, which is in line with the prediction.¹⁰⁴

¹⁰⁴ I apply fixed effect regression in this case, based on the significant results of Breusch-Pagan test and Hausman test, which suggest using fixed effect regression. The results of this test are not reported.

Table 4.18 Future financial performance, and the interaction between audience tone and JMBE using an alternative earnings benchmark measure (Δ ROE)

Variable	Dependent variable: Future performance (ERN_{t+1})									
	JMBE = 1 when (Δ ROE) \in									
	[0,0.1%]		[0,0.2%]		[0,0.3%]		[0,0.4%]		[0,0.6%]	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
Audience_Tone \times JMBE	-0.055***	(0.003)	-0.083**	(0.014)	-0.070**	(0.017)	-0.059**	(0.015)	-0.060*	(0.075)
Audience_Tone	0.017	(0.168)	0.017	(0.151)	0.017	(0.152)	0.017	(0.153)	0.018	(0.136)
JMBE	-0.023***	(0.000)	-0.032**	(0.016)	-0.024**	(0.028)	-0.019**	(0.026)	-0.022	(0.102)
DA_MJ	0.009*	(0.058)	0.009*	(0.056)	0.009*	(0.057)	0.009*	(0.057)	0.010**	(0.043)
ERN	0.135	(0.116)	0.136	(0.115)	0.136	(0.116)	0.136	(0.115)	0.135	(0.117)
RET	0.015**	(0.010)	0.015**	(0.010)	0.015**	(0.010)	0.015**	(0.010)	0.015**	(0.011)
Size	0.013	(0.558)	0.013	(0.556)	0.013	(0.549)	0.013	(0.556)	0.013	(0.560)
BTM	-0.023***	(0.004)	-0.023***	(0.004)	-0.023***	(0.004)	-0.023***	(0.004)	-0.023***	(0.004)
STD_return	-0.126	(0.259)	-0.127	(0.252)	-0.128	(0.249)	-0.129	(0.248)	-0.126	(0.255)
ERN_volatility	0.036	(0.834)	0.038	(0.828)	0.038	(0.827)	0.038	(0.827)	0.037	(0.829)
Loss	0.008	(0.546)	0.008	(0.546)	0.008	(0.544)	0.008	(0.544)	0.008	(0.547)
FTSE_350	-0.004	(0.719)	-0.004	(0.711)	-0.004	(0.705)	-0.004	(0.710)	-0.004	(0.717)
_cons	0.012	(0.880)	0.012	(0.880)	0.012	(0.887)	0.012	(0.878)	0.013	(0.875)
Year	Included		Included		Included		Included		Included	
Number of observations	834		834		834		834		834	
R-squared (%)	18.04		18.15		18.12		18.1		18.19	

The table shows the panel fixed effect regression results when using an alternative earnings benchmark measure for the association between future performance, and the interaction between audience tone and JMBE (equation 5). Standard errors are clustered at the firm level. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All continuous variables are winsorized at 1% level. p-values are reported between brackets. ROE: is return on Equity, which is net profit divided by total common equity. All other variables are described in Appendix F.

Table 4.19 Future financial performance, and the interaction between audience tone and JMBE using an alternative earnings benchmark measure (Δ ROE) by applying pool regression

Dependent variable: Future performance (ERN_{t+1})						
Variable	JMBE = 1 when (Δ ROE) \in					
	[0,0.1%]		[0,0.2%]		[0,0.6%]	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
Audience_Tone \times JMBE	-0.052**	(0.014)	-0.060**	(0.027)	-0.052**	(0.034)
Audience_Tone	0.022**	(0.018)	0.022**	(0.017)	0.023**	(0.014)
JMBE	-0.020**	(0.014)	-0.025**	(0.031)	-0.018	(0.167)
DA_MJ	0.005	(0.195)	0.005	(0.195)	0.005	(0.199)
ERN	0.483***	(0.000)	0.483***	(0.000)	0.482***	(0.000)
RET	0.021***	(0.000)	0.021***	(0.000)	0.021***	(0.000)
Size	0.001	(0.788)	0.001	(0.741)	0.001	(0.729)
BTM	-0.014***	(0.001)	-0.014***	(0.001)	-0.014***	(0.001)
STD_return	-0.134	(0.114)	-0.135	(0.112)	-0.135	(0.113)
ERN_volatility	-0.026	(0.616)	-0.026	(0.617)	-0.025	(0.626)
Loss	0.006	(0.572)	0.006	(0.573)	0.006	(0.580)
FTSE_350	0.001	(0.898)	0.001	(0.908)	0.001	(0.907)
_cons	0.031	(0.151)	0.030	(0.160)	0.031	(0.156)
Year	Included		Included		Included	
Industry	Included		Included		Included	
Number of observations	834		834		834	
R-squared (%)	43.15		43.18		43.22	

The table shows the pool regression results when using an alternative earnings benchmark measure for the association between future performance, and the interaction between audience tone and JMBE (equation 5). ***,** and * denote statistical significance at the 1%, 5% and 10% levels, respectively. All continuous variables are winsorized at 1% level. ROE: namely is return on Equity, which is net profit divided by total common equity. All other variables are described in Appendix F.

4.6 Discussion and Conclusion

This study focuses on the purpose of tone used in UK earnings conference calls for JMBE. It examines whether such firms employ tone management to complement earnings management. In particular, it examines the association between abnormal positive tone and the interaction between earnings management and firms beating the earnings benchmark. It also examines whether the tone of the audience in just meeting or beating an earnings benchmark companies is less likely to predict future performance than in other firms. The sample used in this study is the non-financial firms listed in LSE and considered under FTSE 350 in any year during the sample period from 2010 to 2015.

This paper provides evidence that firms that just beat last year earnings and have more accruals earnings management or real earnings management provide more abnormal positive tone in earnings conference call. This evidence suggests that managers are able to use both earnings management and tone management to just beat or meet the earnings target. More specifically, managers who manage the reported earnings to just beat the earnings target will employ their discretion to speak more optimistically during the earnings conference call so as to mislead users about earnings management used to achieve the target. This indicates that firms meeting or just beating the benchmark use both earnings management and tone management as an impression management technique for self-serving purposes. Therefore, earnings management and tone management are complementary strategies for managers, and users should take them into serious consideration, particularly when firms are classified as JMBE. Additionally, this paper shows that abnormal management tone in the earnings conference call is more positive when the firm is large, old, growing, has high earnings number relative to analyst earnings' forecast, and is excluded from the FTSE 350 list. In contrast, it is

more negative when the firm has higher book to market ratio, more volatile earnings and a higher value of analysts forecast error.

This paper also finds that the audience tone for meeting or just beating an earnings benchmark companies is negatively associated with future performance. This supports my prediction that the audience tone in just meeting or beating an earnings benchmark companies is less likely to predict future performance than in other firms. This confirms that the perception about future performance for earnings conference call's audience of meeting or just beating firms is affected by managers' tone. In sum, this study concludes that JMBE achieve their purposes by using tone management to manage the audience's perception.

In further analyses, it is documented that there are significant differences in the mean of abnormal tone between JMBE and other firms. The higher value of abnormal tone mean is for JMBE and it increases when the change in earnings per share become closer to zero . More specifically, the paper shows that JMBE have a positive mean of abnormal tone, while the other firms have a negative mean which is close to zero. This suggests that managers of JMBE manipulate optimistically their speaking during the earnings conference call. This confirms that managerial tone in earnings conference calls is used for obfuscation or impression management purposes in cases where firms are classified as firms that meet or just beat last year's earnings.

In a further test which compares managers' tone with the audience's tone, it shows that there are significant differences between the mean of managers' tone and the mean of the audience's tone. Clearly, the mean of managers' tone is higher than zero, whereas the mean of audience's tone is less than zero. This result suggests that managers speak positively in the earnings conference call, whereas the audience speaks negatively. This

could be attributed to the fact that analysts or the audience may be interested in restricting managers' tone so as to obtain the true information from their tone.

This paper adds empirical evidence to the literature on the association between earnings management and tone management. It adds to the knowledge about the managerial tone in earnings conference call, since very limited studies are currently available in the literature that pay attention to managerial tone in earnings conference call. This study contributes to the academic research theoretically in explaining tone. It shows that managerial tone in earnings conference calls is used for obfuscation or impression management purposes, rather than signalling information in cases where firms use earnings management to just beat or meet the earnings target. It also shows that the perception of the earnings conference call audience about future performance is managed by managers' tone. These findings draw attention to practice that increasing the level of accountability by firms on managerial tone in the earnings conference call is necessarily needed, particularly in firms that just beat last year's earnings. These results will benefit market's practitioners to understand how managers use their discretion in the tone during the earnings conference call to affect the audience.

One limitation of this research is the relatively small sample size compared with previous research on earnings conference call. Accordingly, more studies using a larger sample of UK earnings conference calls should be considered in near future, and there is need to look at how to increase the accountability level of managerial tone in the earnings conference call and how to determine the self-serving behaviour in the earnings conference call. For example, it would be beneficial to examine the association between CEO/CFO characteristics and tone management in earnings conference call. It might be argued that the accountability in managerial tone is associated CEO/CFO characteristics. Another important point should be studied in future research is that the

role of corporate governance for firms just beating or meeting the earnings target in tone management in the earnings conference call. In sum, future research is needed to study how earnings conference calls can be regulated to reflect the right information and avoid using the call as a manipulation tool. Overall, my findings are new to the literature and add to the understanding of using the tone in earnings conference call, particularly in the UK market.

5 Summary and conclusions

5.1 Introduction

This PhD thesis studies the association between management tone in the earnings conference calls and different settings of financial performance. It adds two new pieces of empirical evidence to the current literature on tone management in earnings conference calls using UK FTSE 350 companies for the period lasting from 2010 to 2015. First, it analyses how managers use tone in earnings conference call: whether informing by signalling further private information helps in predicting corporate financial performance that cannot be included into current quantitative information according to accounting IFRS requirements, or to obscure by concealing poor financial performance. Second, this PhD research offers greater insight into the association between management tone in the earnings conference call and the different setting of corporate financial performance by looking at whether managers use tone in earnings conference calls as self-serving and altruistic behaviour in JMBE. In this case, I use abnormal management tone in the whole earnings conference call rather than tone; the focus here is on management discretion “self-serving behaviour”. More specifically, I investigate when firms engage more in earnings management to meet or just beat the earnings benchmark; whether managers use their tone strategically to communicate with their stakeholders.

5.2 Objectives of the thesis

Earnings conference calls are an important venue in which to study financial information. Beyond revealing quantitative information, these conference calls also comprise qualitative texts, which could help stakeholders interpret the quantitative

financial information and predict financial performance. The managerial tone in these qualitative disclosures is important in influencing investors' assessments about financial performance. Due to the paramount importance of managers' tone during earnings conference calls in value creation and in enhancing corporate performance, evaluating such tones in the UK earnings conference calls about financial performance and understanding how these tones are managed in different settings of corporate financial performance are also vital issues that need to be investigated. To maintain an acceptable level of transparency of the UK earnings conference calls and to make sure that stakeholders use the relevant information obtained from earnings conference call, this thesis provides deep insights into tone management in earnings conference calls in the UK. The objectives of this PhD thesis are summarised in the following points:

- (1) to examine whether managerial tone during the UK earnings conference call can be used to signal financial performance (i.e., can management tone be considered as informative source about financial performance?).
- (2) to examine when firms engage more in earnings management to meet or just beat the earnings benchmark; whether managers use their tone strategically to communicate with their stakeholders.

5.3 Findings of the thesis

The thesis includes two empirical studies. In the first study, I show that managerial tone in earnings conference calls is positively associated with a firm's current and future performance. This means that tone in earnings conference calls of UK firms is informative about financial performance, and it can be used to predict future earnings. This thesis further finds that this evidence is more powerful for firms with a poor performance than those firms with a strong performance. It also shows in further analysis that the audience tone in the earnings conference call positively predicts future

financial performance. Clearly, the evidence in the first study is consistent with tone informing stakeholders.

In the second study, I find that managers use their financial information strategically to meet or just beat the earnings benchmark. I place stress on the “just beating or meeting the earnings benchmark” as an opportunistic management incentive. D’Augusta and DeAngelis (2020) argue that management tone is concavity around earnings benchmarks (i.e., managers’ tone expresses differently financial performance for firms that miss the earnings benchmark compared with JMBE). According to previous studies, JMBE are more likely to manage their reporting (e.g., Burgstahler and Dichev, 1997; Healy and Wahlen, 1999; Dechow and Skinner, 2000; Fields et al., 2001; Dechow et al., 2000; Das and Zhang, 2003) and their tone (e.g., Iatridis, 2016; Davis and Tama-Sweet, 2012; Frankel et al., 2010). The result in this respect shows that JMBE, and have more accruals or real earnings management, provide more abnormal tone in the earnings conference call. This result suggests that managers in this case use their tone strategically in the earnings conference call to conceal the earnings management techniques that have been used to just beat or meet the earnings benchmark. This indicates that earnings and tone management are complementary strategies used for self-serving purposes in meeting or just beating companies. Evidently, this result predicts that managers’ tone in earnings conference calls is used for self-serving or obfuscation purposes for JMBE. I also show that audience tone in meeting or just beating the earnings benchmark firms is less likely to predict future financial performance than other firms, which confirms that the perception about future performance for the audience of such firms are managed by managers’ tone. As this thesis is the first to look at the tone in earnings conference calls of UK firms, it also draws attention to the difference between managers’ and the audience tone’s in these

earning conference calls. This contributes to the understanding of the information characteristics engaged by managers and the audience of the conference call. The result shows that management's tone is, on average, significantly more positive than the audience's tone. This indicates that managers speak with significantly greater optimism than do their audience counterparts in the earnings conference calls.

The two empirical studies in this thesis are interrelated. It is concluded that disclosure tone in earnings conference calls of FTSE 350 companies is consistent with their performance, but few of these companies (i.e., those that meet or just beat the earnings benchmark) use earnings management and tone management for self-serving purposes.

5.4 Theoretical and practical implications of the thesis

Two theories dominated in the explanation of tone management phenomenon in this thesis. Namely, I use economic theory in the first study to explain the informativeness of management tone, and (social) psychology theory (i.e., impression management) in the second study to explain the self-serving behaviour of tone management. The two studies have different setting. The first one takes the all firms of the sample into consideration. However, the second study, focuses only on JMBE. Overall, I have learned, while undertaking this thesis, more about the philosophy of deductive research. Specifically, I will obtain different results in cases where I use different sample observations, and they can be explained by different theories.

The findings in this thesis make the market participants more interested in attending the earnings conference call to obtain the correct information in order to make the right decisions. Additionally, the results motivate stakeholders of firms that do not construct the earnings conference call to, insistently, ask from them to produce such medium of communication, which will result in great benefits for stakeholders. The results also

suggest that investors should take into serious consideration managerial incentives when evaluating the content and meaning of management disclosures.

Although the key focus of this thesis is on tone management, it also draws attention to accrual and real earnings management in FTSE 350 companies. This will be helpful for analysts, regulators, researchers and other parties in the UK context. Beneish (1999, p. 24) states that “[t]he extent to which earnings are manipulated has long been of interest to analysts, regulators, researchers, and other investment professionals”. In respect of analysts and investors, knowing the level of discretion used in reporting by managers is more helpful where this will assist in the evaluation process of the quality of reporting. Conversely, knowing more about firms that manage their earnings and the way of managing earnings process is beneficial for regulators and standard-setters to provide more attention in implementing accounting standards (Stubben, 2010).

I believe that this PhD research is important for both academics and practitioners to understand how management’s tone in the UK earnings conference is used, and to enhance the understanding of how managers’ discretion is used in their reporting and communication.

5.5 Limitations of the thesis

The results reported in this PhD thesis must be interpreted taking into considerations the following limitations. One of the main limitations in this thesis is the sample size. This thesis considers only the largest firms in the UK (i.e., FTSE 350 companies). Accordingly, this does not allow the author to study the tone in each industry sector separately. Furthermore, due to the limited data, the author is unable to measure the abnormal tone cross-sectionally for each industry and year following the previous researchers. This is because the number of observations in some industry-year groups in the sample is less than 10 observations. This does not allow the author to run the

regression analysis in this case. Another limitation is that the regression models in the two empirical chapters do not control for corporate governance which may affect tone, and the analyses in these chapters are based on only quantitative analyses. There is not any indication from a practical perspective (i.e., qualitative analyses), such as meeting some managers or analysts, who speak during the earnings conference call.

5.6 Areas of further research

Although this research provides insights into the management tone during earnings conference calls of UK firms, further studies are needed in this respect. The author suggests that the followings aspects be studied in future research:

First, the two studies in this thesis can be replicated considering the all listed firms in LSE, not only FTSE 350 firms, with controlling for corporate governance variable.

Second, due to the result that JMBE and engage more in earnings management provide more abnormal positive tone in the earnings conference call, further research is needed to study how the earnings conference call can be regulated in order to increase the accountability and transparency of UK earnings conference calls and to mitigate the serious consequences that may arise from managers' manipulation in their communication.

Third, the findings are based on univariate analyses, and these cannot control for all factors that may influence the tone management. In other words, there may be other variables that affect the management tone, and they are omitted from the studies' models and the relationships being observed may be due to these other factors. I have tried as much as possible to involve control variables that may influence the management tone, but this is restricted only from previous research on tone. However, further research is needed to study if there are other factors of tone in earnings conference calls practically (i.e., based on the market point of view). This could be

achieved by undertaking interviews of the users of earning conference calls, such as managers and analysts.

Fourth, the sample in this thesis ends in 2015 in order to avoid the bias in the tone that may happen because of the UK “Brexit” development that occurred in 2016 and which has affected the UK capital market. In fact, it is interesting to observe how Brexit affects the management tone in earnings conference call. One piece of future research in this respect could be to test the association between management tone during earnings conference calls and financial performance before and after Brexit in order to ascertain whether or not there is a difference in the result.

Fifth, the market reaction of tone management in the UK earnings conference calls is also needed to be covered to provide additional insights into the economic consequences of tone management in the UK earning conference calls.

Last but not least, this thesis considers only positive and negative tones in the UK earnings conference calls. Other tones, such as certainty, uncertainty, litigation and constraining, should be conducted in future research.

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Appendix A. Earnings management measures

1. Healy (1985)

The discretionary accruals measure that is identified by Healy (1985) is described as follows:

$$\text{Discretionary accruals} = \text{WC_ACC}_{i,t} \dots\dots\dots (1)$$

Where;

$\text{WC_ACC}_{i,t}$: is non-cash working capital accruals for firm i in year t , and is calculated as follows:

$$\text{WC_ACC}_{i,t} = (\Delta \text{CA}_{it} - \Delta \text{CL}_{it} - \Delta \text{Cash}_{it} + \Delta \text{STDEBT}_{it}) / A_{i,t-1} \dots\dots\dots (2)$$

Where;

ΔCA_{it} : is change in current assets during period t ,

ΔCL_{it} : is change in current liabilities during period t ,

ΔCash_{it} : is change in cash and cash equivalents during period t ,

$\Delta \text{STDEBT}_{it}$: is change in short-term debt during period t , and

$A_{i,t-1}$: is lagged total asset for firm i .

2. Jones (1991)

Jones (1991) was the first who develops a model which isolates discretionary accrual from total accrual. The Jones model it is shown as follows:

$$\text{TACC}_{it} = \alpha_0 + \alpha_1(1/A_{i,t-1}) + \alpha_2 \Delta \text{REV}_{it} + \alpha_3 \text{PPE}_{it} + \varepsilon_{it} \dots\dots\dots (3)$$

Where:

TACC_{it} : is total accruals for firm i in year t whether based on the non-cash working capital accruals approach or the cash flow approach,

$A_{i,t-1}$: is lagged total asset for firm i ,

ΔREV_{it} : is change in revenue for firm i in year t divided by total assets for firm i at the end of year $t-1$, and

PPE_{it} : is gross property, plant and equipment for firm i in year t divided by total assets for firm i at the end of year $t-1$.

Two approaches are used in the literature to estimate total accruals in any non-discretionary accruals models:

- The first approach has been mentioned earlier in Healy (1985) model, which is called non-cash working capital accruals (**WC_ACC**). In this approach, total accrual (**$TACC$**) is **WC_ACC** as shown in the following formula¹⁰⁵:

$$TACC_{it} = WC_ACC_{i,t} \dots\dots\dots (4)$$

- The second approach is called the cash flow approach. This approach has been identified by Collins and Hribar (2000). Here, total accrual (**$TACC$**) can be obtained through subtracting operating cash flow (**OCF**) from earnings before extraordinary items (**$EBXT$**), as the following formula:

$$TACC_{it} = EBXT_{it} - OCF_{it} \dots\dots\dots (5)$$

After calculated **$TACC$** under the cash flow approach, it will be divided by lagged total asset before using it in any of non-discretionary accruals model.

3. The Modified Jones model

The Modified Jones model (Dechow et al., 1995) is formulated as follows:

$$TACC_{it} = \alpha_0 + \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta REV_{it} - \Delta REC_{it}) + \alpha_3 PPE_{it} + \varepsilon_{it} \dots\dots\dots (6)$$

Where:

$TACC_{it}$: is total accruals for firm i in year t whether based on the non-cash working capital accruals approach or the cash flow approach,

¹⁰⁵ To know how **WC_ACC** can be calculated, see equation (2) in this appendix (Appendix A).

A_{i,t-1}: is lagged total asset for firm i,

ΔREV_{it}: is change in revenue for firm i in year t divided by total assets for firm i at the end of year t-1,

ΔREC_{it}: is change in net receivable for firm i in year t divided by total assets for firm i at the end of year t-1, and

PPE_{it}: is gross property, plant and equipment for firm i in year t divided by total assets for firm i at the end of year t-1.

4. Dechow and Dichev (2002)

Dechow and Dichev (2002) model is described as follows:

$$\text{TACC}_{it} = \alpha_0 + \alpha_1 \text{CF}_{i,t-1} + \alpha_2 \text{CF}_{i,t} + \alpha_3 \text{CF}_{i,t+1} + \varepsilon_{it} \dots\dots\dots(7)$$

Where:

TACC_{it}: is total accruals for firm i in year t whether based on the non-cash working capital accruals approach or the cash flow approach,

CF_{i,t-1} : is firm's cash flow from operations for firm in year t-1 divided by total assets at the beginning of year t-1.

CF_{i,t} : is firm's cash flow from operations for firm i in year t divided by total assets at the beginning of year t.

CF_{i,t+1} : is firm's cash flow from operations for firm in year t+1 divided by total assets at the beginning of year t+1.

5. The McNichols (2002)

The McNichols (2002) model is shown as follows:

$$\begin{aligned} \text{TACC}_{it} = & \alpha_0 + \alpha_1(1/A_{i,t-1}) + \alpha_2 \Delta \text{REV}_{it} + \alpha_3 \text{PPE}_{it} + \alpha_4 \text{CF}_{i,t-1} + \alpha_5 \text{CF}_{i,t} + \alpha_6 \text{CF}_{i,t+1} \\ & + \varepsilon_{it} \\ & \dots\dots\dots(8) \end{aligned}$$

Where:

TACC_{it}: is total accruals for firm *i* in year *t* whether based on the non-cash working capital accruals approach or the cash flow approach,

A_{i,t-1}: is lagged total asset for firm *i*,

ΔREV_{it}: is change in revenue for firm *i* in year *t* divided by total assets for firm *i* at the end of year *t-1*, and

PPE_{it}: is gross property, plant and equipment for firm *i* in year *t* divided by total assets for firm *i* at the end of year *t-1*.

CF_{i,t-1} : is firm's cash flow from operations for firm in year *t-1* divided by total assets at the beginning of year *t-1*.

CF_{i,t} : is firm's cash flow from operations for firm *i* in year *t* divided by total assets at the beginning of year *t*.

CF_{i,t+1} : is firm's cash flow from operations for firm in year *t+1* divided by total assets at the beginning of year *t+1*.

Commencing with Defond and Jiambalvo (1994), previous researchers apply these non-discretionary accruals models differently whether using cross-sectional or panel estimation (Dechow et al., 2012). The residual from each non-discretionary accruals model described above represents the discretionary accruals (i.e. earnings management).

6. Kothari et al. (2005)

Kothari et al. (2005) model is described as follows:

$$\text{TACC}_{it} = \alpha_0 + \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta\text{REV}_{it} - \Delta\text{REC}_{it}) + \alpha_3\text{PPE}_{it} + \text{ROA}_{i,t-1} + \varepsilon_{it}$$

..... (9)

Where:

TACC_{it}: is total accruals for firm *i* in year *t* whether based on the non-cash working capital accruals approach or the cash flow approach,

A_{i,t-1}: is lagged total asset for firm *i*,

ΔREV_{it}: is change in revenue for firm *i* in year *t* divided by total assets for firm *i* at the end of year *t-1*,

ΔREC_{it}: is change in net receivable for firm *i* in year *t* divided by total assets for firm *i* at the end of year *t-1*, and

PPE_{it}: is gross property, plant and equipment for firm *i* in year *t* divided by total assets for firm *i* at the end of year *t-1*.

ROA_{i,t}: is return on assets for firm *i* in year *t-1*.

The model will be estimated in cross-section for each industry-year. The residual from equation (9) is the discretionary accruals.

7. The abnormal working capital accruals

The abnormal working capital accruals (DeFond and Park, 2001) can be calculated as follows:

$$AWCA_{t,i} = WC_{t,i} - [(WC_{t-1,i} / S_{t-1,i}) \times S_{t,i}] \quad \dots\dots\dots (10)$$

Where:

AWCA_{t,i} : is the calculated abnormal working capital accruals for firm *i* in year *t*,

WC_{t,i} : the noncash working capital and it can be estimated as follows:

WC = (current assets - cash and short-term investments) - (current liabilities - short-term debt), and

S: is total sales or total revenues.

After calculation of **AWCA**, it will be divided by total assets for firm *i* in year *t-1*.

8. Real earnings management calculation based on Roychowdhury (2006)

There are three real earnings management activities; sales manipulation, discretionary expenses manipulation, and production cost manipulation suggested by Roychowdhury (2006). In term of sales manipulation, it can be calculated by, firstly, applying the

following cross-sectional regression (equation 11) to capture the normal level of cash flows from operations.

$$\text{CFO}_{i,t} = \alpha_1(1/\text{Ai},t-1) + \alpha_2\text{REV}_{it} + \alpha_3 \Delta\text{REV}_{it} + \varepsilon_{it} \quad \text{..... (11)}$$

CFO_{i,t} : is firm's cash flow from operations for firm *i* in year *t* divided by total assets at the beginning of year *t*.

Ai,t-1 : is lagged total asset for firm *i*,

REV_{it} : is revenue for firm *i* in year *t* divided by total assets for firm *i* at the end of year *t-1*.

ΔREV_{it} : is change in revenue for firm *i* in year *t* divided by total assets for firm *i* at the end of year *t-1*.

Then, similar to the way of extracting DA stated above, the discretionary or abnormal CFO is the residual from the above regression (equation 11).

Regarding discretionary expenses manipulation, similarly, the following cross-sectional regression (equation 12) needs to be applied to capture the normal level of discretionary expenses.

$$\text{DISX}_{it} = \alpha_1 (1/ \text{A}_{i,t-1}) + \alpha_2 \text{REV}_{i,t-1} + \varepsilon_{it} \quad \text{..... (12)}$$

DISX_{it} : is the sum of, SG&A (selling, general, and administrative expense), R&D (research and development), and advertising expenses for firm *i* at period *t* divided by total assets for firm *i* at the end of year *t-1*. If data for SG&A expense is available, and data for R&D and advertising expenses are missing, most prior studies set zero to these two expenses in this case.¹⁰⁶

Ai,t-1 : is lagged total asset for firm *i*,

REV_{it-1} : is revenue for firm *i* in year *t-1* divided by total assets for firm *i* at the end of year *t-1*.

Then, the abnormal of discretionary expenses is the residual from the above regression (equation 12).

The third activity of real earnings management is production cost manipulation. This activity is used in manufacturing firms (Roychowdhury, 2006). According to Roychowdhury (2006), three steps are needed to measure this activity of real earnings management. Firstly, the following cross-sectional regression need to be applied:

¹⁰⁶ In Chapter 4, I follow the prior studies in this respect.

$$\text{COGS}_{it} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \beta \text{REV}_{it} + \varepsilon_{it} \quad \text{..... (13)}$$

Where;

COGS_{it}: is revenue for firm i in year t-1 divided by total assets for firm i at the end of year t -1,

A_{i,t-1} : is lagged total asset for firm i,

REV_{it} : is revenue for firm i in year t divided by total assets for firm i at the end of year t-1.

Secondly, as production cost related to the cost of inventory, the following cross-sectional regression need to be applied:

$$\Delta \text{INV}_{it} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \beta_1 \Delta \text{REV}_{it} + \beta_2 \Delta \text{REV}_{i,t-1} + \varepsilon_{it} \quad \text{..... (14)}$$

ΔINV_{it}: is the change in inventory for firm i in year t divided by total assets for firm i at the end of year t -1,

A_{i,t-1} : is lagged total asset for firm i,

ΔREV_{it} : is change in revenue for firm i in year t divided by total assets for firm i at the end of year t-1.

ΔREV_{i,t-1}: is change in revenue for firm i at the end of year t -1 divided by total assets for firm i at the end of year t-1.

Then, the following formula needs to be calculated to obtain the actual production cost:

$$\text{PROD}_{it} = \text{COGS}_{it} + \Delta \text{INV}_{it} \quad \text{.....(15)}$$

Where,

PROD_{it}: is the production cost for firm i in year t

COGS_{it}: is the cost of good sold for firm i in year t

ΔINV_{it}: is the change in inventory for firm i in year t

Thirdly, the coefficients that are derived from the above cross-sectional regressions (13, and 14) need to be applied in the following formula:

$$\text{PROD}_{it}/A_{i,t-1} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \beta \text{REV}_{it} + \beta_1 \Delta \text{REV}_{it} + \beta_2 \Delta \text{REV}_{i,t-1} + \varepsilon_{it} \quad \text{.....(16)}$$

The residual (i.e. ϵ_{it}) in the above equation represents the real earning management under production cost manipulation.

Appendix B. Tone management measures

1. Positive/negative tone measure

Various measures are used in the current literature to estimate positive or negative tone¹⁰⁷. Some researchers focus only on positive (optimistic) tone and it can be measured as follows:

$$\text{Positive (optimistic) tone} = \text{Managers' positive words} / \text{total managers' words} \dots\dots\dots(1)$$

Other researchers use different formula to measure positive tone as shown as follows:

$$\text{Positive (optimistic) tone} = \text{Managers' positive words} / (\text{Managers' positive words} + \text{Managers' negative words}) \dots\dots\dots(2)$$

On the other hand, several studies focus on negative (pessimistic) tone and it can be measured as follows:

$$\text{Negative (pessimistic) tone} = \text{Managers' negative words} / \text{total managers' words} \dots\dots\dots(3)$$

Or it can be measured using the following formula:

$$\text{Negative (pessimistic) tone} = \text{Managers' negative words} / (\text{Managers' positive words} + \text{Managers' negative words}) \dots\dots\dots(4)$$

Another measure that is mostly used in the tone literature is called net management tone and it calculated as follows:

$$\text{Net management tone} = (\text{Managers' positive words} - \text{Managers' negative words}) / \text{total managers' words} \dots\dots\dots(5)$$

Or it can be derived by using the following formula:

¹⁰⁷ Examples of previous studies for each measure are presented in table 2.2.

$$\text{Net management tone} = (\text{Managers' positive words} - \text{Managers' negative words}) /$$

$$(\text{Managers' positive words} + \text{Managers' negative words})$$

$$\dots\dots\dots(6)$$

Other studies use the tone change rather than the tone level to measure the tone. The tone change measure can be calculated as follows:

$$\text{The tone change} = \text{Positive or negative tone}^{108} - (\text{The average of positive or negative tone in the previous three years} / \text{the standard deviation of positive or negative tone in the same period})$$

$$\dots\dots\dots(7)$$

2. Certainty/uncertainty tone measure

DICTION certainty tone score is shown in the following formula:

$$\text{“Certainty”} = [\text{“tenacity”} + \text{“levelling”} + \text{“collectives”} + \text{“insistence”}] - [\text{“numerical terms”} + \text{“ambivalence”} + \text{“self-reference”} + \text{“variety”}]^{109}$$

$$\dots\dots\dots(8)$$

The following formula can be used to measure the uncertainty tone based on Loughran and McDonald (2011) keywords list:

$$\text{Uncertainty tone} = \text{Managers' uncertainty words} / \text{total managers' words}$$

$$\dots\dots\dots(9)$$

3. Normal and abnormal tone measure

Huang et al. (2014) regression model is shown in equation (10) below:

$$\text{TONE}_{it} = \alpha_0 + \alpha_1 \text{EARN}_{it} + \alpha_2 \text{RET}_{it} + \alpha_3 \text{Size}_{it} + \alpha_4 \text{BTM}_{it} + \alpha_5 \text{STD RET}_{it} + \alpha_6$$

$$\text{ERN_volatility}_{it} + \alpha_7 \text{Age}_{it} + \alpha_8 \text{Bus_Segments}_{it} + \alpha_9 \text{Geographic_segments}_{it} + \alpha_{10} \text{Loss}_{it} +$$

$$\alpha_{11} \Delta \text{ERN}_{it} + \alpha_{12} \text{AFE}_{it} + \alpha_{13} \text{AF}_{it} + \varepsilon_{it}$$

$$\dots\dots\dots(10)$$

¹⁰⁸ Positive or negative tone can be calculated as shown in the above equations.

¹⁰⁹ This formula is cited from Cho et al. (2010).

Tone in the above regression model refers to the section 1 (Positive/negative tone measure) above. To obtain the abnormal tone, firm and business fundamentals variables need to be estimated, which represent the normal tone. Therefore, Huang et al. (2014) firstly controlled for firms' current and future performance benchmark. They include in the above model (equation 10) the following variables: **EARN**, which is earnings before extraordinary items scaled by lagged total assets, ΔEARN , which represents the change in earnings before extraordinary item scaled by lagged total assets, **Loss**, which is an indicator variable set to 1, when EARN is negative, and is 0 otherwise, **AFE**, which expresses the analyst forecast error calculated by taking the difference between actual EPS and the median of analysts' forecasts EPS, scaled by stock price at the end of the fiscal year, **AF**, which is the median of analysts' forecasts EPS related to the year $t+1$, scaled by stock price at the end of the fiscal year. They also include **RET**, annual stock return, to control for the current forward-looking property of market information, **BTM**, book-to-market ratio, to control for growth opportunity, **STD RET**, standard deviation of monthly stock returns over the fiscal year, and **ERN_volatility**, standard deviation of EARN calculated over the last five years, with at least three years of data required, to capture the operational volatility and business risk. They add **Size**, the logarithm of market value of equity, **Age**, $\log(1 + \text{age from the first year the firm entered the database})$ to control for size and life cycle stage of the firm respectively. They also add **Bus_Segment**, $\log(1 + \text{number of business segments})$, **Geographic_segment**, $\log(1 + \text{number of geographic segments})$, to control for business complexity.

The residual from the above regression (equation 10) represents the abnormal tone.

Normal tone is calculated as follow:

$$\text{Normal tone} = \text{Tone} - \text{Abnormal tone} \dots\dots\dots(11)$$

4. Tone dispersion measure

Tone dispersion can be calculated using average reduced frequency for tone (positive or negative words) according to Allee and DeAngelis (2015). The calculation steps is shown as follow:

The first step is to determine the keywords list (dictionary) of positive or negative words. As mentioned earlier, in financial reporting studies, two common words lists are mostly used. Namely, Henry (2008), and Loughran and McDonald (2011) word lists.

The second step is to divide the file into sections have the same size in terms of the number of words based on the total number of tone (positive or negative words) in the whole document. In other words, the total number of sections has to be equalled to the total number of tones in the whole file. This must be done starting from the first word in the document.

The third step is to count how many sections consist at least one tone word, and then divide the number by total number of sections. An example of calculating process of the reduced frequency for a document have 50 positive tone is firstly to divide the file into 50 section starting with the first word in the document taking into consideration that each section has the same length. The reduced frequency in this case is the proportion of those sections including one or more positive words. In other words, if the whole number of positive words are placed in one section, then the reduced frequency will be $1/50$. Instead, if each section includes one positive word, then the reduced frequency will be $50/50$. Consequently, a higher reduced frequency percentage (closer to 100%) means that words are more consistently allocated throughout the file. On the other hand,

a lower reduced frequency percentage (closer to 0%) means that tones are distributed stronger in some places than other, which indicates that tones are more dispersed.¹¹⁰

Allee and DeAngelis (2015) critique the reduced frequency technique to calculate the tone dispersion. They claim that the reduced frequency has a drawback that determining the section boundaries relies only on word position. For example, words in one sentence may be distributed to different sections, which leads to make the sentence grammatically wrong. Furthermore, tone words that are clustered together may be assigned to different sections if they are situated close to the section boundary.

To address this problem, Allee and DeAngelis (2015) suggest to use the average reduced frequency by repeating the reduced frequency calculation throughout considering the whole number of possible section boundaries that can make. For instance, the file will be divided again into equal sections but now from the second word of the file instead of the first one, and then the reduced frequency needs to be calculated. After that the reduced frequency measure need to be continuously calculated starting at the third word, then the fourth, and so on till the end of the first original section. Finally, the average of these calculations is the average reduced frequency measure, which represents the tone dispersion.

¹¹⁰ This calculation mechanism is cited from Allee and DeAngelis (2015)

Appendix C. The words' list developed by Loughran and

McDonald (2011)

Positive Words

ABLE, ABUNDANCE, ABUNDANT, ACCLAIMED, ACCOMPLISH, ACCOMPLISHED, ACCOMPLISHES, ACCOMPLISHING, ACCOMPLISHMENT, ACCOMPLISHMENTS, ACHIEVE, ACHIEVED, ACHIEVEMENT, ACHIEVEMENTS, ACHIEVES, ACHIEVING, ADEQUATELY, ADVANCEMENT, ADVANCEMENTS, ADVANCES, ADVANCING, ADVANTAGE, ADVANTAGED, ADVANTAGEOUS, ADVANTAGEOUSLY, ADVANTAGES, ALLIANCE, ALLIANCES, ASSURE, ASSURED, ASSURES, ASSURING, ATTAIN, ATTAINED, ATTAINING, ATTAINMENT, ATTAINMENTS, ATTAINS, ATTRACTIVE, ATTRACTIVENESS, BEAUTIFUL, BEAUTIFULLY, BENEFICIAL, BENEFICIALLY, BENEFIT, BENEFITED, BENEFITING, BENEFITTED, BENEFITTING, BEST, BETTER, BOLSTERED, BOLSTERING, BOLSTERS, BOOM, BOOMING, BOOST, BOOSTED, BREAKTHROUGH, BREAKTHROUGHS, BRILLIANT, CHARITABLE, COLLABORATE, COLLABORATED, COLLABORATES, COLLABORATING, COLLABORATION, COLLABORATIONS, COLLABORATIVE, COLLABORATOR, COLLABORATORS, COMPLIMENT, COMPLIMENTARY, COMPLIMENTED, COMPLIMENTING, COMPLIMENTS, CONCLUSIVE, CONCLUSIVELY, CONDUCTIVE, CONFIDENT, CONSTRUCTIVE, CONSTRUCTIVELY, COURTEOUS, CREATIVE, CREATIVELY, CREATIVENESS, CREATIVITY, DELIGHT, DELIGHTED, DELIGHTFUL, DELIGHTFULLY, DELIGHTING, DELIGHTS, DEPENDABILITY, DEPENDABLE, DESIRABLE, DESIRED, DESPITE, DESTINED, DILIGENT, DILIGENTLY, DISTINCTION, DISTINCTIONS, DISTINCTIVE, DISTINCTIVELY, DISTINCTIVENESS, DREAM, EASIER, EASILY, EASY, EFFECTIVE, EFFICIENCIES, EFFICIENCY, EFFICIENT, EFFICIENTLY, EMPOWER, EMPOWERED, EMPOWERING, EMPOWERS, ENABLE, ENABLED, ENABLES, ENABLING, ENCOURAGED, ENCOURAGEMENT, ENCOURAGES, ENCOURAGING, ENHANCE, ENHANCED, ENHANCEMENT, ENHANCEMENTS, ENHANCES, ENHANCING, ENJOY, ENJOYABLE, ENJOYABLY, ENJOYED, ENJOYING, ENJOYMENT, ENJOYS, ENTHUSIASM, ENTHUSIASTIC, ENTHUSIASTICALLY, EXCELLENCE, EXCELLENT, EXCELLING, EXCELS, EXCEPTIONAL, EXCEPTIONALLY, EXCITED, EXCITEMENT, EXCITING, EXCLUSIVE, EXCLUSIVELY, EXCLUSIVENESS, EXCLUSIVES, EXCLUSIVITY, EXEMPLARY, FANTASTIC, FAVORABLE, FAVORABLY, FAVORED, FAVORING, FAVORITE, FAVORITES, FRIENDLY, GAIN, GAINED, GAINING, GAINS, GOOD, GREAT, GREATER, GREATEST, GREATLY, GREATNESS, HAPPIEST, HAPPILY, HAPPINESS, HAPPY, HIGHEST, HONOR, HONORABLE, HONORED, HONORING, HONORS, IDEAL, IMPRESS, IMPRESSED, IMPRESSES, IMPRESSING, IMPRESSIVE, IMPRESSIVELY, IMPROVE, IMPROVED, IMPROVEMENT, IMPROVEMENTS, IMPROVES, IMPROVING, INCREDIBLE, INCREDIBLY, INFLUENTIAL, INFORMATIVE, INGENUITY, INNOVATE, INNOVATED, INNOVATES, INNOVATING, INNOVATION, INNOVATIONS, INNOVATIVE, INNOVATIVENESS, INNOVATOR, INNOVATORS, INSIGHTFUL, INSPIRATION, INSPIRATIONAL, INTEGRITY, INVENT, INVENTED, INVENTING, INVENTION, INVENTIONS, INVENTIVE, INVENTIVENESS, INVENTOR, INVENTORS, LEADERSHIP, LEADING, LOYAL, LUCRATIVE, MERITORIOUS, OPPORTUNITIES, OPPORTUNITY, OPTIMISTIC, OUTPERFORM, OUTPERFORMED, OUTPERFORMING, OUTPERFORMS, PERFECT, PERFECTED, PERFECTLY, PERFECTS, PLEASANT, PLEASANTLY, PLEASED, PLEASURE, PLENTIFUL, POPULAR, POPULARITY, POSITIVE, POSITIVELY, PREEMINENCE, PREEMINENT, PREMIER, PREMIERE, PRESTIGE, PRESTIGIOUS, PROACTIVE, PROACTIVELY, PROFICIENCY, PROFICIENT, PROFICIENTLY, PROFITABILITY, PROFITABLE, PROFITABLY, PROGRESS, PROGRESSED, PROGRESSES, PROGRESSING, PROSPERED, PROSPERING, PROSPERITY, PROSPEROUS, PROSPERS, REBOUND, REBOUNDED, REBOUNDING, RECEPTIVE, REGAIN, REGAINED, REGAINING, RESOLVE, REVOLUTIONIZE, REVOLUTIONIZED, REVOLUTIONIZES, REVOLUTIONIZING, REWARD, REWARDED, REWARDING, REWARDS, SATISFACTION, SATISFACTORILY, SATISFACTORY, SATISFIED, SATISFIES, SATISFY, SATISFYING, SMOOTH, SMOOTHING, SMOOTHLY, SMOOTHS, SOLVES, SOLVING, SPECTACULAR, SPECTACULARLY, STABILITY, STABILIZATION, STABILIZATIONS, STABILIZE, STABILIZED, STABILIZES, STABILIZING, STABLE, STRENGTH, STRENGTHEN, STRENGTHENED, STRENGTHENING, STRENGTHENS, STRENGTHS, STRONG, STRONGER, STRONGEST, SUCCEED, SUCCEEDED, SUCCEEDING, SUCCEEDS, SUCCESS, SUCCESSES, SUCCESSFUL, SUCCESSFULLY, SUPERIOR, SURPASS, SURPASSED, SURPASSES, SURPASSING, TRANSPARENCY, TREMENDOUS, TREMENDOUSLY, UNMATCHED, UNPARALLELED, UNSURPASSED, UPTURN, UPTURNS, VALUABLE, VERSATILE, VERSATILITY, VIBRANCY, VIBRANT, WIN, WINNER, WINNERS, WINNING, WORTHY.

Negative Words

ABANDON, ABANDONED, ABANDONING, ABANDONMENT, ABANDONMENTS, ABANDONS, ABDICATED, ABDICATES, ABDICATING, ABDICATION, ABDICATIONS, ABERRANT, ABERRATION, ABERRATIONAL, ABERRATIONS, ABETTING, ABNORMAL, ABNORMALITIES, ABNORMALITY, ABNORMALLY, ABOLISH, ABOLISHED, ABOLISHES, ABOLISHING, ABROGATE, ABROGATED, ABROGATES, ABROGATING, ABROGATION, ABROGATIONS, ABRUPT, ABRUPTLY, ABRUPTNESS, ABSENCE, ABSENCES, ABSENTEEISM, ABUSE, ABUSED, ABUSES, ABUSING, ABUSIVE, ABUSIVELY, ABUSIVENESS, ACCIDENT, ACCIDENTAL, ACCIDENTALLY, ACCIDENTS, ACCUSATION, ACCUSATIONS, ACCUSE, ACCUSED, ACCUSES, ACCUSING, ACQUIESCE, ACQUIESCED, ACQUIESCES, ACQUIESCING, ACQUIT, ACQUITS, ACQUITTAL, ACQUITTALS, ACQUITTED, ACQUITTING, ADULTERATE, ADULTERATED, ADULTERATING, ADULTERATION, ADULTERATIONS, ADVERSARIAL, ADVERSARIES, ADVERSARY, ADVERSE, ADVERSELY, ADVERSITIES, ADVERSITY, AFTERMATH, AFTERMATHS, AGAINST, AGGRAVATE, AGGRAVATED, AGGRAVATES, AGGRAVATING, AGGRAVATION, AGGRAVATIONS, ALERTED, ALERTING, ALIENATE, ALIENATED, ALIENATES, ALIENATING, ALIENATION, ALIENATIONS, ALLEGATION, ALLEGATIONS, ALLEGE, ALLEGED, ALLEGEDLY, ALLEGES, ALLEGING, ANNOY, ANNOYANCE, ANNOYANCES, ANNOYED, ANNOYING, ANNOYS, ANNUL, ANNULLED, ANNULING, ANNULMENT, ANNULMENTS, ANNULS, ANOMALIES, ANOMALOUS, ANOMALOUSLY, ANOMALY, ANTICOMPETITIVE, ANTITRUST, ARGUE, ARGUED, ARGUING, ARGUMENT, ARGUMENTATIVE, ARGUMENTS, ARREARAGE, ARREARAGES, ARREARS, ARREST, ARRESTED, ARRESTS, ARTIFICIALLY, ASSAULT, ASSAULTED, ASSAULTING, ASSAULTS, ASSERTIONS, ATTRITION, AVERSELY, BACKDATING, BAD, BAIL, BAILOUT, BALK, BALKED, BANKRUPT, BANKRUPTCIES, BANKRUPTCY, BANKRUPTED, BANKRUPTING, BANKRUPTS, BANS, BARRED, BARRIER, BARRIERS, BOTTLENECK, BOTTLENECKS, BOYCOTT, BOYCOTTED, BOYCOTTING, BOYCOTTS, BREACH, BREACHED, BREACHES, BREACHING, BREAK, BREAKAGE, BREAKAGES, BREAKDOWN, BREAKDOWNS, BREAKING, BREAKS, BRIBE, BRIBED, BRIBERIES, BRIBERY, BRIBES, BRIBING, BRIDGE, BROKEN, BURDEN, BURDENED, BURDENING, BURDENS, BURDENSOME, BURNED, CALAMITIES, CALAMITOUS, CALAMITY, CANCEL, CANCELED, CANCELING, CANCELLATION, CANCELLATIONS, CANCELLED, CANCELLING, CANCELS, CARELESS, CARELESSLY, CARELESSNESS, CATASTROPHE, CATASTROPHES, CATASTROPHIC, CATASTROPHICALLY, CAUTION, CAUTIONARY, CAUTIONED, CAUTIONING, CAUTIONS, CEASE, CEASED, CEASES, CEASING, CENSURE, CENSURED, CENSURES, CENSURING, CHALLENGE, CHALLENGED, CHALLENGES, CHALLENGING, CHARGEOFFS, CIRCUMVENT, CIRCUMVENTED, CIRCUMVENTING, CIRCUMVENTION, CIRCUMVENTIONS, CIRCUMVENTS, CLAIMING, CLAIMS, CLAWBACK, CLOSED, CLOSEOUT, CLOSEOUTS, CLOSING, CLOSINGS, CLOSURE, CLOSURES, COERCE, COERCED, COERCES, COERCING, COERCION, COERCIVE, COLLAPSE, COLLAPSED, COLLAPSES, COLLAPSING, COLLISION, COLLISIONS, COLLUDE, COLLUDED, COLLUDES, COLLUDING, COLLUSION, COLLUSIONS, COLLUSIVE, COMPLAIN, COMPLAINED, COMPLAINING, COMPLAINS, COMPLAINT, COMPLAINTS, COMPLICATE, COMPLICATED, COMPLICATES, COMPLICATING, COMPLICATION, COMPLICATIONS, COMPULSION, CONCEALED, CONCEALING, CONCEDE, CONCEDED, CONCEDES, CONCEDED, CONCERN, CONCERNED, CONCERNS, CONCILIATING, CONCILIATION, CONCILIATIONS, CONDEMN, CONDEMNATION, CONDEMNATIONS, CONDEMNED, CONDEMNING, CONDEMNNS, CONDONE, CONDONED, CONFESS, CONFESSED, CONFESSES, CONFESSING, CONFESSION, CONFIN, CONFINED, CONFINEMENT, CONFINEMENTS, CONFINES, CONFINING, CONFISCATE, CONFISCATED, CONFISCATES, CONFISCATING, CONFISCATION, CONFISCATIONS, CONFLICT, CONFLICTED, CONFLICTING, CONFLICTS, CONFRONT, CONFRONTATION, CONFRONTATIONAL, CONFRONTATIONS, CONFRONTED, CONFRONTING, CONFRONTS, CONFUSE, CONFUSED, CONFUSES, CONFUSING, CONFUSINGLY, CONFUSION, CONSPIRACIES, CONSPIRACY, CONSPIRATOR, CONSPIRATORIAL, CONSPIRATORS, CONSPIRE, CONSPIRED, CONSPIRES, CONSPIRING, CONTEMPT, CONTEND, CONTENTED, CONTENDING, CONTENTS, CONTENTION, CONTENTIONS, CONTENTIOUS, CONTENTIOUSLY, CONTESTED, CONTESTING, CONTRACTION, CONTRACTIONS, CONTRADICT, CONTRADICTED, CONTRADICTING, CONTRADICTION, CONTRADICTIONS, CONTRADICTORY, CONTRADICTS, CONTRARY, CONTROVERSIAL, CONTROVERSIES, CONTROVERSY, CONVICT, CONVICTED, CONVICTING, CONVICTION, CONVICTIONS, CORRECTED, CORRECTING, CORRECTION, CORRECTIONS, CORRECTS, CORRUPT, CORRUPTED, CORRUPTING, CORRUPTION, CORRUPTIONS, CORRUPTLY, CORRUPTNESS, COSTLY, COUNTERCLAIM, COUNTERCLAIMED, COUNTERCLAIMING, COUNTERCLAIMS, COUNTERFEIT, COUNTERFEITED, COUNTERFEITER, COUNTERFEITERS, COUNTERFEITING, COUNTERFEITS, COUNTERMEASURE, COUNTERMEASURES, CRIME, CRIMES, CRIMINAL, CRIMINALLY, CRIMINALS, CRISES, CRISIS, CRITICAL, CRITICALLY, CRITICISM, CRITICISMS, CRITICIZE, CRITICIZED, CRITICIZES, CRITICIZING, CRUCIAL, CRUCIALLY, CULPABILITY, CULPABLE, CULPABLY, CUMBERSOME, CURTAIL, CURTAILED, CURTAILING, CURTAILMENT, CURTAILMENTS, CURTAILS, CUT, CUTBACK, CUTBACKS, CYBERATTACK, CYBERATTACKS, CYBERBULLYING, CYBERCRIME, CYBERCRIMES, CYBERCRIMINAL, CYBERCRIMINALS, DAMAGE, DAMAGED, DAMAGES, DAMAGING, DAMPEN, DAMPENED, DANGER, DANGEROUS, DANGEROUSLY, DANGERS,

DEADLOCK, DEADLOCKED, DEADLOCKING, DEADLOCKS, DEADWEIGHT, DEADWEIGHTS, DEBARMENT, DEBARMENTS, DEBARRED, DECEASED, DECEIT, DECEITFUL, DECEITFULNESS, DECEIVE, DECEIVED, DECEIVES, DECEIVING, DECEPTION, DECEPTIONS, DECEPTIVE, DECEPTIVELY, DECLINE, DECLINED, DECLINES, DECLINING, DEFACE, DEFACED, DEFACEMENT, DEFAMATION, DEFAMATIONS, DEFAMATORY, DEFAME, DEFAMED, DEFAMES, DEFAMING, DEFAULT, DEFAULTED, DEFAULTING, DEFAULTS, DEFEAT, DEFEATED, DEFEATING, DEFEATS, DEFECT, DEFECTIVE, DEFECTS, DEFEND, DEFENDANT, DEFENDANTS, DEFENDED, DEFENDING, DEFENDS, DEFENSIVE, DEFER, DEFICIENCIES, DEFICIENCY, DEFICIENT, DEFICIT, DEFICITS, DEFRAUD, DEFRAUDED, DEFRAUDING, DEFRAUDS, DEFUNCT, DEGRADATION, DEGRADATIONS, DEGRADE, DEGRADED, DEGRADES, DEGRADING, DELAY, DELAYED, DELAYING, DELAYS, DELETERIOUS, DELIBERATE, DELIBERATED, DELIBERATELY, DELINQUENCIES, DELINQUENCY, DELINQUENT, DELINQUENTLY, DELINQUENTS, DELIST, DELISTED, DELISTING, DELISTS, DEMISE, DEMISED, DEMISES, DEMISING, DEMOLISH, DEMOLISHED, DEMOLISHES, 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DISCONTINUATIONS, DISCONTINUE, DISCONTINUED, DISCONTINUES, DISCONTINUING, DISCOURAGE, DISCOURAGED, DISCOURAGES, DISCOURAGING, DISCREDIT, DISCREDITED, DISCREDITING, DISCREDITS, DISCREPANCIES, DISCREPANCY, DISFAVOR, DISFAVORED, DISFAVORING, DISFAVORS, DISGORGE, DISGORGED, DISGORGEMENT, DISGORGEMENTS, DISGORGES, DISGORGING, DISGRACE, DISGRACEFUL, DISGRACEFULLY, DISHONEST, DISHONESTLY, DISHONESTY, DISHONOR, DISHONORABLE, DISHONORABLY, DISHONORED, DISHONORING, DISHONORS, DISINCENTIVES, DISINTERESTED, DISINTERESTEDLY, DISINTERESTEDNESS, DISLOYAL, DISLOYALLY, DISLOYALTY, DISMAL, DISMALLY, DISMISS, DISMISSAL, DISMISSALS, DISMISSED, DISMISSES, DISMISSING, DISORDERLY, DISPARAGE, DISPARAGED, DISPARAGEMENT, DISPARAGEMENTS, DISPARAGES, DISPARAGING, DISPARAGINGLY, DISPARITIES, DISPARITY, DISPLACE, DISPLACED, DISPLACEMENT, DISPLACEMENTS, DISPLACES, DISPLACING, DISPOSE, DISPOSSESS, DISPOSSESSED, DISPOSSESSES, DISPOSSESSING, DISPROPORTION, DISPROPORTIONAL, DISPROPORTIONATE, DISPROPORTIONATELY, DISPUTE, 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DOWNTIME, DOWNTIMES, DOWNTURN, DOWNTURNS,

DOWNWARD, DOWNWARDS, DRAG, DRASTIC, DRASTICALLY, DRAWBACK, DRAWBACKS, DROPPED, DROUGHT, DROUGHTS, DURESS, DYSFUNCTION, DYSFUNCTIONAL, DYSFUNCTIONS, EASING, EGREGIOUS, EGREGIOUSLY, EMBARGO, EMBARGOED, EMBARGOES, EMBARGOING, EMBARRASS, EMBARRASSED, EMBARRASSES, EMBARRASSING, EMBARRASSMENT, EMBARRASSMENTS, EMBEZZLE, EMBEZZLED, EMBEZZLEMENT, EMBEZZLEMENTS, EMBEZZLER, EMBEZZLES, EMBEZZLING, ENCROACH, ENCROACHED, ENCROACHES, ENCROACHING, ENCROACHMENT, ENCROACHMENTS, ENCUMBER, ENCUMBERED, ENCUMBERING, ENCUMBERS, ENCUMBRANCE, ENCUMBRANCES, ENDANGER, ENDANGERED, ENDANGERING, ENDANGERMENT, ENDANGERS, ENJOIN, ENJOINED, ENJOINING, ENJOINS, ERODE, ERODED, ERODES, ERODING, EROSION, ERRATIC, ERRATICALLY, ERRED, ERRING, ERRONEOUS, ERRONEOUSLY, ERROR, ERRORS, ERRS, ESCALATE, ESCALATED, ESCALATES, ESCALATING, EVADE, EVADED, EVADES, EVADING, EVASION, EVASIONS, EVASIVE, EVICT, EVICTED, EVICTING, EVICTION, EVICTIONS, EVICTS, EXACERBATE, EXACERBATED, EXACERBATES, EXACERBATING, EXACERBATION, EXACERBATIONS, EXAGGERATE, EXAGGERATED, EXAGGERATES, EXAGGERATING, EXAGGERATION, EXCESSIVE, EXCESSIVELY, EXCULPATE, EXCULPATED, EXCULPATES, EXCULPATING, EXCULPATION, EXCULPATIONS, EXCULPATORY, EXONERATE, EXONERATED, EXONERATES, EXONERATING, EXONERATION, EXONERATIONS, EXPLOIT, EXPLOITATION, EXPLOITATIONS, EXPLOITATIVE, EXPLOITED, EXPLOITING, EXPLOITS, EXPOSE, EXPOSED, EXPOSES, EXPOSING, EXPROPRIATE, EXPROPRIATED, EXPROPRIATES, EXPROPRIATING, EXPROPRIATION, EXPROPRIATIONS, EXPULSION, EXPULSIONS, EXTENUATING, FAIL, FAILED, FAILING, FAILINGS, FAILS, FAILURE, FAILURES, FALLOUT, FALSE, FALSELY, FALSIFICATION, FALSIFICATIONS, FALSIFIED, FALSIFIES, FALSIFY, FALSIFYING, FALSITY, FATALITIES, FATALITY, FATALLY, FAULT, FAULTED, FAULTS, FAULTY, FEAR, FEARS, FELONIES, FELONIOUS, FELONY, FICTITIOUS, FINED, FINES, FIRED, FIRING, FLAW, FLAWED, FLAWS, FORBID, FORBIDDEN, FORBIDDING, FORBIDS, FORCE, FORCED, FORCING, FORECLOSE, FORECLOSED, FORECLOSES, FORECLOSING, FORECLOSURE, FORECLOSURES, FOREGO, FOREGOES, FOREGONE, FORESTALL, FORESTALLED, FORESTALLING, FORESTALLS, FORFEIT, FORFEITED, FORFEITING, FORFEITS, FORFEITURE, FORFEITURES, FORGERS, FORGERY, FRAUD, FRAUDS, FRAUDULENCE, FRAUDULENT, FRAUDULENTLY, FRIVOLOUS, FRIVOLOUSLY, FRUSTRATE, FRUSTRATED, FRUSTRATES, FRUSTRATING, FRUSTRATINGLY, FRUSTRATION, FRUSTRATIONS, FUGITIVE, FUGITIVES, GRATUITOUS, GRATUITOUSLY, GRIEVANCE, GRIEVANCES, GROSSLY, GROUNDLESS, GUILTY, HALT, HALTED, HAMPER, HAMPERED, HAMPERING, HAMPERS, HARASS, HARASSED, HARASSING, HARASSMENT, HARSHIP, HARSHIPS, HARM, HARMED, HARMFUL, HARMFULLY, HARMING, HARMS, HARSH, HARSHER, HARSHEST, HARSHLY, HARSHNESS, HAZARD, HAZARDOUS, HAZARDS, HINDER, HINDERED, HINDERING, HINDERS, HINDRANCE, HINDRANCES, HOSTILE, HOSTILITY, HURT, HURTING, IDLE, IDLED, IDLING, IGNORE, IGNORED, IGNORES, IGNORING, ILL, ILLEGAL, ILLEGALITIES, ILLEGALITY, ILLEGALLY, ILLEGIBLE, ILLICIT, ILLICITLY, ILLIQUID, ILLIQUIDITY, IMBALANCE, IMBALANCES, IMMATURE, IMMORAL, IMPAIR, IMPAIRED, IMPAIRING, IMPAIRMENT, IMPAIRMENTS, IMPAIRS, IMPASSE, IMPASSES, IMPEDE, IMPEDED, IMPEDES, IMPEDIMENT, IMPEDIMENTS, IMPEDING, IMPENDING, IMPERATIVE, IMPERFECTION, IMPERFECTIONS, IMPERIL, IMPERMISSIBLE, IMPLICATE, IMPLICATED, IMPLICATES, IMPLICATING, IMPOSSIBILITY, IMPOSSIBLE, IMPOUND, IMPOUNDED, IMPOUNDING, IMPOUNDS, IMPRACTICABLE, IMPRACTICAL, IMPRACTICALITIES, IMPRACTICALITY, IMPRISONMENT, IMPROPER, IMPROPERLY, IMPROPRIETIES, IMPROPRIETY, IMPRUDENT, IMPRUDENTLY, INABILITY, INACCESSIBLE, INACCURACIES, INACCURACY, INACCURATE, INACCURATELY, INACTION, INACTIONS, INACTIVATE, INACTIVATED, INACTIVATES, INACTIVATING, INACTIVATION, INACTIVATIONS, INACTIVITY, INADEQUACIES, INADEQUACY, INADEQUATE, INADEQUATELY, INADVERTENT, INADVERTENTLY, INADVISABILITY, INADVISABLE, INAPPROPRIATE, INAPPROPRIATELY, INATTENTION, INCAPABLE, INCAPACITATED, INCAPACITY, INCARCERATE, INCARCERATED, INCARCERATES, INCARCERATING, INCARCERATION, INCARCERATIONS, INCIDENT, INCIDENTS, INCOMPATIBILITIES, INCOMPATIBILITY, INCOMPATIBLE, INCOMPETENCE, INCOMPETENCY, INCOMPETENT, INCOMPETENTLY, INCOMPETENTS, INCOMPLETE, INCOMPLETELY, INCOMPLETENESS, INCONCLUSIVE, INCONSISTENCIES, INCONSISTENCY, INCONSISTENT, INCONSISTENTLY, INCONVENIENCE, INCONVENIENCES, INCONVENIENT, INCORRECT, INCORRECTLY, INCORRECTNESS, INDECENCY, INDECENT, INDEFEASIBLE, INDEFEASIBLY, INDICT, INDICTABLE, INDICTED, INDICTING, INDICTMENT, INDICTMENTS, INEFFECTIVE, INEFFECTIVELY, INEFFECTIVENESS, INEFFICIENCIES, INEFFICIENCY, INEFFICIENT, INEFFICIENTLY, INELIGIBILITY, INELIGIBLE, INEQUITABLE, INEQUITABLY, INEQUITIES, INEQUITY, INEVITABLE, INEXPERIENCE, INEXPERIENCED, INFERIOR, INFLICTED, INFRACTION, INFRACTIONS, INFRINGE, INFRINGED, INFRINGEMENT, INFRINGEMENTS, INFRINGES, INFRINGING, INHIBITED, INIMICAL, INJUNCTION, INJUNCTIONS, INJURE, INJURED, INJURES, INJURIES, INJURING, INJURIOUS, INJURY, INORDINATE, INORDINATELY, INQUIRY, INSECURE, INSENSITIVE, INSOLVENCIES, INSOLVENCY, INSOLVENT, INSTABILITY, INSUBORDINATION, INSUFFICIENCY, INSUFFICIENT,

INSUFFICIENTLY, INSURRECTION, INSURRECTIONS, INTENTIONAL, INTERFERE, INTERFERED, INTERFERENCE, INTERFERENCES, INTERFERES, INTERFERING, INTERMITTENT, INTERMITTENTLY, INTERRUPT, INTERRUPTED, INTERRUPTING, INTERRUPTION, INTERRUPTIONS, INTERRUPTS, INTIMIDATION, INTRUSION, INVALID, INVALIDATE, INVALIDATED, INVALIDATES, INVALIDATING, INVALIDATION, INVALIDITY, INVESTIGATE, INVESTIGATED, INVESTIGATES, INVESTIGATING, INVESTIGATION, INVESTIGATIONS, INVOLUNTARILY, INVOLUNTARY, IRRECONCILABLE, IRRECONCILABLY, IRRECOVERABLE, IRRECOVERABLY, IRREGULAR, IRREGULARITIES, IRREGULARITY, IRREGULARLY, IRREPARABLE, IRREPARABLY, IRREVERSIBLE, JEOPARDIZE, JEOPARDIZED, JUSTIFIABLE, KICKBACK, KICKBACKS, KNOWINGLY, LACK, LACKED, LACKING, LACKLUSTER, LACKS, LAG, LAGGED, LAGGING, LAGS, LAPSE, LAPSED, LAPSES, LAPSING, LATE, LAUNDERING, LAYOFF, LAYOFFS, LIE, LIMITATION, LIMITATIONS, LINGERING, LIQUIDATE, LIQUIDATED, LIQUIDATES, LIQUIDATING, LIQUIDATION, LIQUIDATIONS, LIQUIDATOR, LIQUIDATORS, LITIGANT, LITIGANTS, LITIGATE, LITIGATED, LITIGATES, LITIGATING, LITIGATION, LITIGATIONS, LOCKOUT, LOCKOUTS, LOSE, LOSES, LOSING, LOSS, LOSSES, LOST, LYING, MALFEASANCE, MALFUNCTION, MALFUNCTIONED, MALFUNCTIONING, MALFUNCTIONS, MALICE, MALICIOUS, MALICIOUSLY, MALPRACTICE, MANIPULATE, MANIPULATED, MANIPULATES, MANIPULATING, MANIPULATION, MANIPULATIONS, MANIPULATIVE, MARKDOWN, MARKDOWNS, MISAPPLICATION, MISAPPLICATIONS, MISAPPLIED, MISAPPLIES, MISAPPLY, MISAPPLYING, MISAPPROPRIATE, MISAPPROPRIATED, MISAPPROPRIATES, MISAPPROPRIATING, MISAPPROPRIATION, MISAPPROPRIATIONS, MISBRANDED, MISCALCULATE, MISCALCULATED, MISCALCULATES, MISCALCULATING, MISCALCULATION, MISCALCULATIONS, MISCHARACTERIZATION, MISCHIEF, MISCLASSIFICATION, MISCLASSIFICATIONS, MISCLASSIFIED, MISCLASSIFY, MISCOMMUNICATION, MISCONDUCT, MISDATED, MISDEMEANOR, MISDEMEANORS, MISDIRECTED, MISHANDLE, MISHANDLED, MISHANDLES, MISHANDLING, MISINFORM, MISINFORMATION, MISINFORMED, MISINFORMING, MISINFORMS, MISINTERPRET, MISINTERPRETATION, MISINTERPRETATIONS, MISINTERPRETED, MISINTERPRETING, MISINTERPRETS, MISJUDGE, MISJUDGED, MISJUDGES, MISJUDGING, MISJUDGMENT, MISJUDGMENTS, MISLABEL, MISLABELED, MISLABELING, MISLABELLED, MISLABELS, MISLEAD, MISLEADING, MISLEADINGLY, MISLEADS, MISLED, MISMANAGE, MISMANAGED, MISMANAGEMENT, MISMANAGES, MISMANAGING, MISMATCH, MISMATCHED, MISMATCHES, MISMATCHING, MISPLACED, MISPRICE, MISPRICING, MISPRICINGS, MISREPRESENT, MISREPRESENTATION, MISREPRESENTATIONS, MISREPRESENTED, MISREPRESENTING, MISREPRESENTS, MISS, MISSED, MISSES, MISSTATE, MISSTATED, MISSTATEMENT, MISSTATEMENTS, MISSTATES, MISSTATING, MISSTEP, MISSTEPS, MISTAKE, MISTAKEN, MISTAKENLY, MISTAKES, MISTAKING, MISTRIAL, MISTRIALS, MISUNDERSTAND, MISUNDERSTANDING, MISUNDERSTANDINGS, MISUNDERSTOOD, MISUSE, MISUSED, MISUSES, MISUSING, MONOPOLISTIC, MONOPOLISTS, MONOPOLIZATION, MONOPOLIZE, MONOPOLIZED, MONOPOLIZES, MONOPOLIZING, MONOPOLY, MORATORIA, MORATORIUM, MORATORIUMS, MOTHBALLED, MOTHBALLING, NEGATIVE, NEGATIVELY, NEGATIVES, NEGLECT, NEGLECTED, NEGLECTFUL, NEGLECTING, NEGLECTS, NEGLIGENCE, NEGLIGENCES, NEGLIGENT, NEGLIGENTLY, NONATTAINMENT, NONCOMPETITIVE, NONCOMPLIANCE, NONCOMPLIANCES, NONCOMPLIANT, NONCOMPLYING, NONCONFORMING, NONCONFORMITIES, NONCONFORMITY, NONDISCLOSURE, NONFUNCTIONAL, NONPAYMENT, NONPAYMENTS, NONPERFORMANCE, NONPERFORMANCES, NONPERFORMING, NONPRODUCING, NONPRODUCTIVE, NONRECOVERABLE, NONRENEWAL, NUISANCE, NUISANCES, NULLIFICATION, NULLIFICATIONS, NULLIFIED, NULLIFIES, NULLIFY, NULLIFYING, OBJECTED, OBJECTING, OBJECTION, OBJECTIONABLE, OBJECTIONABLY, OBJECTIONS, OBSCENE, OBSCENITY, OBSOLESCENCE, OBSOLETE, OBSTACLE, OBSTACLES, OBSTRUCT, OBSTRUCTED, OBSTRUCTING, OBSTRUCTION, OBSTRUCTIONS, OFFENCE, OFFENCES, OFFEND, OFFENDED, OFFENDER, OFFENDERS, OFFENDING, OFFENDS, OMISSION, OMISSIONS, OMIT, OMITTS, OMITTED, OMITTING, ONEROUS, OPPORTUNISTIC, OPPORTUNISTICALLY, OPPOSE, OPPOSED, OPPOSES, OPPOSING, OPPOSITION, OPPOSITIONS, OUTAGE, OUTAGES, OUTDATED, OUTMODED, OVERAGE, OVERAGES, OVERBUILD, OVERBUILDING, OVERBUILDS, OVERBUILT, OVERBURDEN, OVERBURDENED, OVERBURDENING, OVERCAPACITIES, OVERCAPACITY, OVERCHARGE, OVERCHARGED, OVERCHARGES, OVERCHARGING, OVERCOME, OVERCOMES, OVERCOMING, OVERDUE, OVERESTIMATE, OVERESTIMATED, OVERESTIMATES, OVERESTIMATING, OVERESTIMATION, OVERESTIMATIONS, OVERLOAD, OVERLOADED, OVERLOADING, OVERLOADS, OVERLOOK, OVERLOOKED, OVERLOOKING, OVERLOOKS, OVERPAID, OVERPAYMENT, OVERPAYMENTS, OVERPRODUCED, OVERPRODUCES, OVERPRODUCING, OVERPRODUCTION, OVERRUN, OVERRUNNING, OVERRUNS, OVERSHADOW, OVERSHADOWED, OVERSHADOWING, OVERSHADOWS, OVERSTATE, OVERSTATED, OVERSTATEMENT, OVERSTATEMENTS, OVERSTATES, OVERSTATING, OVERSUPPLIED, OVERSUPPLIES, OVERSUPPLY, OVERSUPPLYING, OVERTLY, OVERTURN, OVERTURNED, OVERTURNING, OVERTURNS, OVERVALUE, OVERVALUED, OVERVALUING,

PANIC, PANICS, PENALIZE, PENALIZED, PENALIZES, PENALIZING, PENALTIES, PENALTY, PERIL, PERILS, PERJURY, PERPETRATE, PERPETRATED, PERPETRATES, PERPETRATING, PERPETRATION, PERSIST, PERSISTED, PERSISTENCE, PERSISTENT, PERSISTENTLY, PERSISTING, PERSISTS, PERSIVASIVE, PERSIVASIVELY, PERSIVASIVENESS, PETTY, PICKET, PICKETED, PICKETING, PLAINTIFF, PLAINTIFFS, PLEA, PLEAD, PLEADED, PLEADING, PLEADINGS, PLEADS, PLEAS, PLED, POOR, POORLY, POSES, POSING, POSTPONE, POSTPONED, POSTPONEMENT, POSTPONEMENTS, POSTPONES, POSTPONING, PRECIPITATED, PRECIPITOUS, PRECIPITOUSLY, PRECLUDE, PRECLUDED PRECLUDES, PRECLUDING, PREDATORY, PREJUDICE, PREJUDICED, PREJUDICES, PREJUDICIAL, PREJUDICING, PREMATURE, PREMATURELY, PRESSING, PRETRIAL, PREVENTING, PREVENTION, PREVENTS, PROBLEM, PROBLEMATIC, PROBLEMATIC, PROBLEMS, PROLONG, PROLONGATION, PROLONGATIONS, PROLONGED, PROLONGING, PROLONGS, PRONE, PROSECUTE, PROSECUTED, PROSECUTES, PROSECUTING, PROSECUTION, PROSECUTIONS, PROTEST, PROTESTED, PROTESTER, PROTESTERS, PROTESTING, PROTESTOR, PROTESTORS, PROTESTS, PROTRACTED, PROTRACTION, PROVOKE, PROVOKED, PROVOKES, PROVOKING, PUNISHED, PUNISHES, PUNISHING, PUNISHMENT, PUNISHMENTS, PUNITIVE, PURPORT, PURPORTED, PURPORTEDLY, PURPORTING, PURPORTS, QUESTION, QUESTIONABLE, QUESTIONABLY, QUESTIONED, QUESTIONING, QUESTIONS, QUIT, QUITTING, RACKETEER, RACKETEERING, RATIONALIZATION, RATIONALIZATIONS, RATIONALIZE, RATIONALIZED, RATIONALIZES, RATIONALIZING, REASSESSMENT, REASSESSMENTS, REASSIGN, REASSIGNED, REASSIGNING, REASSIGNMENT, REASSIGNMENTS, REASSIGNS, RECALL, RECALLED, RECALLING, RECALLS, RECESSION, RECESSIONARY, RECESSIONS, RECKLESS, RECKLESSLY, RECKLESSNESS, REDACT, REDACTED, REDACTING, REDACTION, REDACTIONS, REDEFAULT, REDEFAULTED, REDEFAULTS, REDRESS, REDRESSED, REDRESSES, REDRESSING, REFUSAL, REFUSALS, REFUSE, REFUSED, REFUSES, REFUSING, REJECT, REJECTED, REJECTING, REJECTION, REJECTIONS, REJECTS, RELINQUISH, RELINQUISHED, RELINQUISHES, RELINQUISHING, RELINQUISHMENT, RELINQUISHMENTS, RELUCTANCE, RELUCTANT, RENEGOTIATE, RENEGOTIATED, RENEGOTIATES, RENEGOTIATING, RENEGOTIATION, RENEGOTIATIONS, RENOUNCE, RENOUNCED, RENOUNCEMENT, RENOUNCEMENTS, RENOUNCES, RENOUNCING, REPARATION, REPARATIONS, REPOSSESSED, REPOSSESSES, REPOSSESSING, REPOSSESSION, REPOSSESSIONS, REPUDIATE, REPUDIATED, REPUDIATES, REPUDIATING, REPUDIATION, REPUDIATIONS, RESIGN, RESIGNATION, RESIGNATIONS, RESIGNED, RESIGNING, RESIGNS, RESTATE, RESTATED, RESTATEMENT, RESTATEMENTS, RESTATES, RESTATING, RESTRUCTURE, RESTRUCTURED, RESTRUCTURES, RESTRUCTURING, RESTRUCTURINGS, RETALIATE, RETALIATED, RETALIATES, RETALIATING, RETALIATION, RETALIATIONS, RETALIATORY, RETRIBUTION, RETRIBUTIONS, REVOCATION, REVOCATIONS, REVOKE, REVOKED, REVOKES, REVOKING, RIDICULE, RIDICULED, RIDICULES, RIDICULING, RISKIER, RISKIEST, RISKY, SABOTAGE, SACRIFICE, SACRIFICED, SACRIFICES, SACRIFICIAL, SACRIFICING, SCANDALOUS, SCANDALS, SCRUTINIZE, SCRUTINIZED, SCRUTINIZES, SCRUTINIZING, SCRUTINY, SECRECY, SEIZE, SEIZED, SEIZES, SEIZING, SENTENCED, SENTENCING, SERIOUS, SERIOUSLY, SERIOUSNESS, SETBACK, SETBACKS, SEVER, SEVERE, SEVERED, SEVERELY, SEVERITIES, SEVERITY, SHARPLY, SHOCKED, SHORTAGE, SHORTAGES, SHORTFALL, SHORTFALLS, SHRINKAGE, SHRINKAGES, SHUT, SHUTDOWN, SHUTDOWNS, SHUTS, SHUTTING, SLANDER, SLANDERED, SLANDEROUS, SLANDERS, SLIPPAGE, SLIPPAGES, SLOW, SLOWDOWN, SLOWDOWNS, SLOWED, SLOWER, SLOWEST, SLOWING, SLOWLY, SLOWNESS, SLUGGISH, SLUGGISHLY, SLUGGISHNESS, SOLVENCIES, SOLVENCY, SPAM, SPAMMERS, SPAMMING, STAGGERING, STAGNANT, STAGNATE, STAGNATED, STAGNATES, STAGNATING, STAGNATION, STANDSTILL, STANDSTILLS, STOLEN, STOPPAGE, STOPPAGES, STOPPED, STOPPING, STOPS, STRAIN, STRAINED, STRAINING, STRAINS, STRESS, STRESSED, STRESSES, STRESSFUL, STRESSING, STRINGENT, SUBJECTED, SUBJECTING, SUBJECTION, SUBPOENA, SUBPOENAED, SUBPOENAS, SUBSTANDARD, SUE, SUED, SUES, SUFFER, SUFFERED, SUFFERING, SUFFERS, SUING, SUMMONED, SUMMONING, SUMMONS, SUMMONSES, SUSCEPTIBILITY, SUSCEPTIBLE, SUSPECT, SUSPECTED, SUSPECTS, SUSPEND, SUSPENDED, SUSPENDING, SUSPENDS, SUSPENSION, SUSPENSIONS, SUSPICION, SUSPICIONS, SUSPICIOUS, SUSPICIOUSLY, TAINT, TAINED, TAINING, TAINTS, TAMPERED, TENSE, TERMINATE, TERMINATED, TERMINATES, TERMINATING, TERMINATION, TERMINATIONS, TESTIFY, TESTIFYING, THREAT, THREATEN, THREATENED, THREATENING, THREATENS, THREATS, TIGHTENING, TOLERATE, TOLERATED, TOLERATES, TOLERATING, TOLERATION, TORTUOUS, TORTUOUSLY, TRAGEDIES, TRAGEDY, TRAGIC, TRAGICALLY, TRAUMATIC, TROUBLE, TROUBLED, TROUBLES, TURBULENCE, TURMOIL, UNABLE, UNACCEPTABLE, UNACCEPTABLY, UNACCOUNTED, UNANNOUNCED, UNANTICIPATED, UNAPPROVED, UNATTRACTIVE, UNAUTHORIZED, UNAVAILABILITY, UNAVAILABLE, UNAVOIDABLE, UNAVOIDABLY, UNAWARE, UNCOLLECTABLE, UNCOLLECTED, UNCOLLECTIBILITY, UNCOLLECTIBLE, UNCOLLECTIBLES, UNCOMPETITIVE, UNCOMPLETED, UNCONSCIONABLE, UNCONSCIONABLY, UNCONTROLLABLE, UNCONTROLLABLY, UNCONTROLLED, UNCORRECTED, UNCOVER, UNCOVERED, UNCOVERING, UNCOVERS, UNDELIVERABLE, UNDELIVERED, UNDERCAPITALIZED, UNDERCUT, UNDERCUTS, UNDERCUTTING,

UNDERESTIMATE, UNDERESTIMATED, UNDERESTIMATES, UNDERESTIMATING,
 UNDERESTIMATION, UNDERFUNDED, UNDERINSURED, UNDERMINE, UNDERMINED,
 UNDERMINES, UNDERMINING, UNDERPAID, UNDERPAYMENT, UNDERPAYMENTS, UNDERPAYS,
 UNDERPERFORM, UNDERPERFORMANCE, UNDERPERFORMED, UNDERPERFORMING,
 UNDERPERFORMS, UNDERPRODUCED, UNDERPRODUCTION, UNDERREPORTING,
 UNDERSTATE, UNDERSTATED, UNDERSTATEMENT, UNDERSTATEMENTS, UNDERSTATES,
 UNDERSTATING, UNDERUTILIZATION, UNDERUTILIZED, UNDESIRABLE, UNDESIRED,
 UNDETECTED, UNDETERMINED, UNDISCLOSED, UNDOCUMENTED, UNDUE, UNDULY,
 UNECONOMIC, UNECONOMICAL, UNECONOMICALLY, UNEMPLOYED, UNEMPLOYMENT,
 UNETHICAL, UNETHICALLY, UNEXCUSED, UNEXPECTED, UNEXPECTEDLY, UNFAIR,
 UNFAIRLY, UNFAVORABILITY, UNFAVORABLE, UNFAVORABLY, UNFAVOURABLE,
 UNFEASIBLE, UNFIT, UNFITNESS, UNFORESEEABLE, UNFORESEEN, UNFORSEEN,
 UNFORTUNATE, UNFORTUNATELY, UNFOUNDED, UNFRIENDLY, UNFULFILLED, UNFUNDED,
 UNINSURED, UNINTENDED, UNINTENTIONAL, UNINTENTIONALLY, UNJUST, UNJUSTIFIABLE,
 UNJUSTIFIABLY, UNJUSTIFIED, UNJUSTLY, UNKNOWING, UNKNOWINGLY, UNLAWFUL,
 UNLAWFULLY, UNLICENSED, UNLIQUIDATED, UNMARKETABLE, UNMERCHANTABLE,
 UNMERITORIOUS, UNNECESSARILY, UNNECESSARY, UNNEEDED, UNOBTAINABLE,
 UNOCCUPIED, UNPAID, UNPERFORMED, UNPLANNED, UNPOPULAR, UNPREDICTABILITY,
 UNPREDICTABLE, UNPREDICTABLY, UNPREDICTED, UNPRODUCTIVE, UNPROFITABILITY,
 UNPROFITABLE, UNQUALIFIED, UNREALISTIC, UNREASONABLE, UNREASONABLENESS,
 UNREASONABLY, UNRECEPTIVE, UNRECOVERABLE, UNRECOVERED, UNREIMBURSED,
 UNRELIABLE, UNREMEDIED, UNREPORTED, UNRESOLVED, UNREST, UNSAFE, UNSALABLE,
 UNSALEABLE, UNSATISFACTORY, UNSATISFIED, UNSAVORY, UNSCHEDULED, UNSELLABLE,
 UNSOLD, UNSOUND, UNSTABILIZED, UNSTABLE, UNSUBSTANTIATED, UNSUCCESSFUL,
 UNSUCCESSFULLY, UNSUITABILITY, UNSUITABLE, UNSUITABLY, UNSUITED, UNSURE,
 UNSUSPECTED, UNSUSPECTING, UNSUSTAINABLE, UNTENABLE, UNTIMELY, UNTRUSTED,
 UNTRUTH, UNTRUTHFUL, UNTRUTHFULLY, UNTRUTHFULNESS, UNTRUTHS, UNUSABLE,
 UNWANTED, UNWARRANTED, UNWELCOME, UNWILLING, UNWILLINGNESS, UPSET, URGENCY,
 URGENT, USURIOUS, USURP, USURPED, USURPING, USURPS, USURY, VANDALISM, VERDICT,
 VERDICTS, VETOED, VICTIMS, VIOLATE, VIOLATED, VIOLATES, VIOLATING, VIOLATION,
 VIOLATIONS, VIOLATIVE, VIOLATOR, VIOLATORS, VIOLENCE, VIOLENT, VIOLENTLY,
 VITIATE, VITIATED, VITIATES, VITIATING, VITIATION, VOIDED, VOIDING, VOLATILE,
 VOLATILITY, VULNERABILITIES, VULNERABILITY, VULNERABLE, VULNERABLY, WARN,
 WARNED, WARNING, WARNINGS, WARNS, WASTED, WASTEFUL, WASTING, WEAK, WEAKEN,
 WEAKENED, WEAKENING, WEAKENS, WEAKER, WEAKEST, WEAKLY, WEAKNESS,
 WEAKNESSES, WILLFULLY, WORRIES, WORRY, WORRYING, WORSE, WORSEN, WORSENER,
 WORSENING, WORSENS, WORST, WORTHLESS, WRITEDOWN, WRITEDOWNS, WRITEOFF,
 WRITEOFFS, WRONG, WRONGDOING, WRONGDOINGS, WRONGFUL, WRONGFULLY,
 WRONGLY.

Appendix D. The process of using PYTHON software

By using PYTHON software, I firstly divide the transcript into the two parts (i.e., presentation, and Q&A). This is done by running the code shown below in the next pages. The words in presentation part stems from managers. Therefore, all words in this part is taken into consideration to calculate TONE. However, the words in the Q&A part come from different sources (i.e. managers, analysts, and audience members). The earnings conference call transcript has identical format. In the Q&A part, the name of manager followed by the position of this manager (ex. Head of IR and Corporate Development, CEO, etc.) is shown, when he or she speaks. Furthermore, the name of analyst followed by word “Analyst” is shown when an analyst speaks. However, when one of the other audience members speak, this expression “Unidentified Audience Member” is presented in Q&A part. Therefore, I divide this part into two sections by using PYTHON software through determining these two expressions (i.e. “Analyst” and “Unidentified Audience Member”). The first section includes words spoken by “Analyst” and “Unidentified Audience Member”, which represents the audience’s words. However, the second section consists words spoken by the other people not included under “Analyst” and “Unidentified Audience Member”, which represents managers’ words in Q&A part. This is done by running the code shown below in the following pages. Consequently, I use in the analysis of TONE all managers’ words in any earnings conference call transcript including the presentation part and managers’ words in Q&A part.

The following code has been run in PYTHON to divide the earnings conference calls into two separate parts (i.e., presentation part, and Q&A part):

```
import os
#####
#####
# Constants
#####
#####
# Section breaks
SECTION_BREAK_EQ =
"=====
=====\\n"
SECTION_BREAK_HYPHEN = "-----
-----\\n"
# Writing state
IDLE = 0
WRITING = 1
DONE = 2
# File name related
PRESENTATION_FILE_NAME_PREFIX = "Presentation_"
QA_FILE_NAME_PREFIX = "QA_"
#####
#####
# Split function
#####
#####
def split_file(folder_path, file_name):
    file = open(os.path.abspath(os.path.join(folder_path, file_name)), "r")
    write_file = None
    state = IDLE
    while True:
        # Finish splitting
        if state == DONE:
            break

        # Read next line
        cur_line = file.readline()
        #print(cur_line)
        # End of file
        if cur_line == "":
            break
            if cur_line == SECTION_BREAK_HYPHEN:
                temp_line = file.readline()
                if temp_line == "Definitions\\n":
                    if not write_file is None:
                        write_file.close()
                    state = DONE
                else:
```

```

        if not write_file is None:
            write_file.write(cur_line)
            write_file.write(temp_line)
    elif cur_line == SECTION_BREAK_EQ:
        temp_line = file.readline()
        if temp_line == "Presentation\n":
            if not write_file is None:
                write_file.close()
            write_file = open(os.path.abspath(os.path.join(folder_path,
PRESENTATION_FILE_NAME_PREFIX + file_name)), "w")
            write_file.write(temp_line)
            state = WRITING
        elif temp_line == "Questions and Answers\n":
            if not write_file is None:
                write_file.close()
            write_file = open(os.path.abspath(os.path.join(folder_path,
QA_FILE_NAME_PREFIX + file_name)), "w")
            write_file.write(temp_line)
            state = WRITING
        elif not write_file is None:
            write_file.write(cur_line)

    file.close()

#####
#####
# Get folder list
#####
#####
folder_names = [d for d in os.listdir(os.path.dirname(__file__)) if
os.path.isdir(os.path.join(os.path.dirname(__file__), d))]

#####
#####
# Loop through each folder
#####
#####
for folder_name in folder_names:
    # Get path for current folder
    folder_path = os.path.join(os.path.dirname(__file__), folder_name)

    # Get file list in this folder
    file_names = [d for d in os.listdir(folder_path) if (not
os.path.isdir(os.path.join(folder_path, d))) and d[-4:] == ".txt" and
d[:len(PRESENTATION_FILE_NAME_PREFIX)] !=
PRESENTATION_FILE_NAME_PREFIX and d[:len(QA_FILE_NAME_PREFIX)] !=
QA_FILE_NAME_PREFIX]

#####
#####
# Loop through each file

```

```
#####  
#####  
    for file_name in file_names:  
        print("Splitting: " + os.path.abspath(os.path.join(folder_path, file_name)))  
        split_file(folder_path, file_name)
```

The following code has been run in PYTHON to divide Q&A part of the earnings conference calls into two separate sections (i.e., managers' words, and audience's words):

```
import os
DIRECTORY = 'C:\\Users\\yb991\\Desktop\\QA_Transcript'
FILES = os.listdir(DIRECTORY)
QNO = 0
FILENO = len(FILES)
for trans in FILES:
    print ("%d files left"%(FILENO))
    FILENO = FILENO - 1
    path = DIRECTORY + trans
    company = trans[3:-4]
    f_Q = open('C:\\Users\\yb991\\Desktop\\QA_Transcript_Split\\' + company +
'_analyst.txt','a')
    f_A = open('C:\\Users\\yb991\\Desktop\\QA_Transcript_Split\\' + company +
'_manager.txt','a')
    fp = open(path,'r')
    content = fp.read()
    lines = content.split('-----
--')
    if len(lines)%2 == 1:
        for k in range(1,len(lines),2):
            header = lines[k].replace("\n","")
            try:
                con = header.split(' ')
                name = con[0]
                c = con[1].split(' - ')
            #         company = c[0]
                title = c[1].split(' ')[0]
                cont = lines[k+1]
                cont = cont.replace("\n",'')
                cont = cont.replace("\r",'')
                cont = cont.replace(' ','')
                if title == 'Analyst' : # a question
                    QNO = QNO + 1
            #         print('question')

    f_Q.write("%d :: %s :: %s :: %s :: %s\n"%(QNO,name,company,title,cont))
        else: # an answer
            #
    f_A.write("%d :: %s :: %s :: %s :: %s\n"%(QNO,name,company,title,cont))
except:
    if 'Unidentified Audience Member' in header:
        title = 'Unidentified Audience Member'
        cont = lines[k+1]
```

```

        cont = cont.replace('\n',' ')
        cont = cont.replace('\r',' ')
        cont = cont.replace(' ',';')
        company = 'none'
        QNO = QNO + 1
        name = 'none'

f_Q.write("%d :: %s :: %s :: %s :: %s\n"%(QNO,name,company,title,cont))
        operator = 'operator'
    else:
        print ("file %s not structured"%(trans))
        fp.close()
    f_Q.close()
    f_A.close()

```

Appendix E. Discretionary accrual (DA) calculation

I apply **the modified Jones model** (Dechow, Sloan, and Sweeney 1995) at industry-year level (cross-sectional regression for each two-digit ICB industry and year ^{111,112,113}) to derive DA. The modified Jones model is explained in Appendix A, Section 3. I use cash flow approach to calculate total accruals (**TACC**); because, recently, researchers on accruals management are more toward to use cash flow accrual rather than working capital accruals to derive **TACC**. Hribar and Collins (2002) suggest that working capital accrual is less accurate. Therefore, I follow the prior research and use cash flow approach to calculate **TACC** in this study.¹¹⁴ The residual from the non-discretionary accruals model (**the modified Jones model**) represents the discretionary accruals (DA).

¹¹¹ Previous researchers use 2-digit SIC codes (Standard Industry Classification) for industries classification in order to calculate discretionary accruals, such as; Alhadab et al. (2016); Alhadab et al. (2015); Ali and Zhang (2015). In line with these studies, I use 2-digit ICB codes “Supersector” instead of SIC code; as the latter is not available in both DataStream, and Bloomberg databases.

¹¹² I run each regression separately for each two-digit from ICB industry code and year group with at least ten observations, by using all available data on WorldScope database for all non-financial firms listed in LSE to calculate the coefficients of the model for the period from 2010 to 2015. More clearly, for the modified Jones model, I run a regression for each year and two digit ICB industry classifications for all non-financial firms listed in LSE.

¹¹³ The coefficients are different in each year and two digit of ICB industry group.

¹¹⁴ The calculation of TACC according to cash flow approach is explained in Appendix A, Section 2.

Appendix F. Variables definition

TONE: is management positive tone measured by calculating the difference between the positive and negative words spoken by managers in an earnings conference call (the presentation, and Q&A parts) scaled by the summation between them, based on word lists from Loughran and McDonald (2011).

Tone_All: is the optimistic tone in the whole earnings conference call measured by calculating the difference between the positive and negative words in the whole earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011).

Audience_Tone: is the difference between the positive and negative words spoken by audience (not managers), who attend the earnings conference call scaled by the summation between them, based on word lists from Loughran and McDonald (2011).

Normal_Tone: is the expected management positive tone obtained after running the regression of the tone model.

Audience tone: is the audience (i.e., analysts and other market participants who attend the call) optimistic tone measured by calculating the difference between the positive and negative words spoken by the audience of earnings conference call, scaled by the summation between them, based on word lists from Loughran and McDonald (2011).

EM × JMBE: the interaction between one of the earnings management proxies and firms that just meet or beat the earnings target.

EM: refers to the earnings management proxy, which is one of the discretionary accruals measures or real earnings management measure.

DA_J: is discretionary accrual through cash flow approach according to Jones model.

DA_MJ: is discretionary accrual through cash flow approach according to Modified Jones model.

REM: is the summation between the abnormal level of cash flows from operations and the abnormal level of discretionary expenses multiplied by (-1), which express the aggregated measure of real earnings management.

Δ EPS: change in earnings per share from year t-1 to year t.

JMBE: is an indicator variable is set to 1 if ΔEPS falls in the neighbourhood from zero to a small positive number, and 0 otherwise. (The small positive number is identified in each test).

ERN: earnings before extraordinary items scaled by lagged total assets.

ERN_{it+1}: earnings before extraordinary items in year t+1 scaled by total assets in year t.

RET: annual stock return calculated by this formula $((P_t - P_{t-1}) + Div_t) / P_{t-1}$, where:

P_t : Stock price in year t.

P_{t-1} : Stock price in year t-1.

Div_t : Dividends per share in year t.

Size: logarithm of market value of equity at the end of fiscal year.

BTM: book-to-market ratio measured at the end of fiscal year.

STD_RET: standard deviation of monthly stock returns over the fiscal year (monthly stock returns is obtained by calculating the growth in monthly total return index, which has been collected from DataStream database).

ERN_volatility: standard deviation of EARN calculated over the last five years, with at least three years of data required.

Age: $\log(1 + \text{age from the first year the firm entered the DataStream database})$.

Loss: an indicator variable set to 1, when EARN is negative, and is 0 otherwise.

Δ EARN: change in earnings before extraordinary item scaled by lagged total assets.

AFE: Analysts' forecast error, calculated by taking the difference between actual EPS and the median of analysts' forecasts EPS (Bloomberg estimation), scaled by stock price at the end of the fiscal year.

AF: The median of analysts' forecasts EPS related to the year $t+1$ (Bloomberg estimation), scaled by stock price at the end of the fiscal year.

PPE: gross property plant and equipment scaled by lagged total assets.

REV_Growth: is sales growth calculated by change in sales divided by the beginning of period sales.

DEBT_TO_EQY: is total debt scaled by total shareholders' equity.

issue: is an indicator variable set equal to one if the firm issued equity or debt in the year, and zero otherwise.

FTSE_350: is an indicator variable set equal to one if the firm is classified under FTSE 350 list, and zero otherwise.

Year: Year Dummies (2010, 2011, 2012, 2013, 2014, and 2015).

Bus_Segments: $\log(1 + \text{number of business segments})$.

Geographic_segments: $\log(1 + \text{number of geographic segments})$.

Industry: Industry Dummies based on the two digits of ICB industry classifications.

Δ Earnings: change in earnings before extraordinary item from year $t-1$ to year t .

TA: total assets in year t .

Appendix G. DICTION validity

To check the validity of using DICTION in counting the number of positive and negative words based on Loughran and McDonald (2011) words' list, I choose some paragraphs texts (shown below) from four different transcripts used in the sample of earnings conference calls. Then, I look manually for the positive and negative words of Loughran and McDonald (2011) in these texts. I also upload these texts on DICTION. After that, I compare the number of words of my analysis with DICTION analysis for each text separately. The number of words in my analysis match the number of words in DICTION. Followings show the texts, and the positive and negative words. The positive words are highlighted by bold line and underline. The Negative words are highlighted by bold line and red colour.

Basic Materials _Antofagasta PLC _2011_ presentation

“Originally I would have introduced our **good** friend Marcelo Awad, who is known to many of you. However, as you will be aware, he **resigned** last week. Accordingly our Chairman, Jean-Paul Luksic, asked that our Vice President and Group Financial Officer, Alejandro Rivera, lead this presentation today in his place.

It is also a **pleasure** to introduce Gonzalez Sanchez, who is Vice President of Sales and Marketing, and, as you probably all know, he is from Chile. And we have here also Hussein Barma, who is the CFO, UK in London, and also Philip Holden who works with him as Group Manager in Finance and in Investor Relations.

I would like now to hand over to Alejandro to make the presentation, and I suggest we, as hinted by the introducer earlier, that we leave **questions** to the end of this presentation. So, Alejandro, over to you”.

No. of positive words	
good	1
pleasure	1
Total	2

No. of Negative words	
resigned	1
questions	1
Total	2

Consumer Services _WPP PLC _2013_ presentation:

“Let me just start off. Paul is going to do, as usual, a summary on the results with a lot more depth, particularly on the foreign exchange issues particularly in Q4. But we did **achieve** -- I just want to say one or two things.

We did **achieve** record results yet again in 2013, so our twenty-eighth year was a record year. We met all the metrics except reported margins. I remind you that reported margins were up 30 basis points, constant currency were up 50 basis points and like for like were up 60 basis points.

And the squeeze on the reported margins was basically due to the fourth-quarter **degradation**, if that is the right word, or depreciation, particularly the fast-growth marketing -- market currencies **against** the pound sterling and, of course, the pound sterling has been the **strongest**.

2014 has started well. You saw the figures for January. Although there is now the difference between -- and it's getting sharper between what we call revenues -- our margins to revenues and revenues gross margin, or what we are terming net sales to give people a **better** understanding.

And in 2014 obviously currency will remain a **challenge**. We've talked about a reduced margin guidance for the future, from 50 basis points to 30 basis points pre FX. And I think it's important to understand that because of increased demands on the business both from clients demanding **efficiency** and effectiveness.

Clients are facing a situation where GDP growth is sub trend -- sub pre-Lehman trend still, **despite** the fact that it has **improved** post-Lehman, post-2008. And therefore they make their numbers or get to their numbers by putting pressure on costs in the supply chain of which we are a part of.

And then, secondly, because of increased competitive activity in the market we are seeing one or two pricing pressures, particularly in media investment management. We can go into that in more detail.

Dividends last year are up by -- or will be paid this year in respect of last year up by 20%, a dividend payout ratio of 42%. The target remains 45% and the target is for 2014. And we've upped party because of the reduced margin guidance again pre-currency from 50 basis points to 30 basis points. We have upped the share buybacks from 1% of the guide target to 2% to 3% and that has a not insignificant -- about a similar impact, actually, to 20 basis points on EPS.

And last, but not the least, the cash position, working capital position has been particularly **strong** and will remain so, as you've seen from the statement, in the first six weeks, which is what we have data of 2014.

So that as background Paul is going to take you through a presentation on the results and then I will come back and talk about the strategy and our objectives. Paul?”

No. of positive words	
achieve	2
strongest	1
better	1
efficiency	1
despite	1
improved	1
strong	1
Total	8

No. of Negative words	
degradation	1
against	1
challenge	1
Total	3

Consumer Services _WPP PLC_2013_ managers' words in Q&A part:

“Well, it has always been there; we've discussed this before. I think one of the reasons that it's there and present and it's increasing, or increasingly concerning, is because of the **lack** of the top-line growth rate. In order to make numbers I think you are seeing from corporate results more activity on the cost side than on the top-line side.

I remember Mohamed El-Erian, former joint CEO and CIO of PIMCO, saying about a year or so ago, 15, 18 months ago, that companies can't continue to focus on cost. There's a limit. Our own Jeremy Bullmore, who used to be Chairman of JWT, said the same thing many years ago. Whereas if you focus on the top line, at least until you get to 100% market share, it's unlimited.

So I think it's because growth, GDP growth is below trend and there's **concern** about that. And to make the numbers, there's increased pressure on cost, which is -- I'm saying it's totally legitimate and understandable.

I think the second -- you asked about payment terms. That has probably, to some extent, eased a little bit, but because there is -- it's a **difficult** area. It's a **difficult** area for all sorts of reasons to enforce.

We have basically taken the position, as you know, that we are not a bank. We said that a long time ago and that we are not in a position to act as a bank and fund clients. The bank should do that, even if there's a discounted receivables scheme, because, ultimately, although interest rates might be low now and it might be an acceptable cost now, when interest rates rise, which is likely, it wouldn't be there.

So I would say the pressure continues to be there. You said is it a regional thing? I think it's not a regional thing in one sense, but where you get faster growth there is less pressure. I think there's also, which came out this morning in response to another **question**, on the digital side of the business there is currently less pressure because it's 20% of total spending.

In our case, it's 35% of the Company. But I think on digital there's less procurement focus. It's a sexier area. It's an area where it's more fragmented, at least at the moment, and, therefore, there are more purchasing points and there's less control. So that might change over the coming years and might change as digital moves up in terms of the

proportion, but I think there's some variations depending on growth rate and on nature of the activity.”

No. of positive words		No. of Negative words	
Total	0	lack	1
		concern	1
		difficult	2
		question	1
		Total	5

Industrial _Capita PLC _2011_ presentation:

“Right, **good** morning, everybody. Thank you very much indeed for coming along for the results presentation for Capita's year end December 31, 2011. As I would usually say, all mobile devices off, please, because we're on the Internet.

In terms of agenda we are going to cover five areas. So firstly, I'm just going to kick off and summarize aspects for 2011 and 2012. Gordon's then going to go in some detail through the financial results. I will then summarize what we've been doing with respect to sales and acquisitions.

And then we're going to introduce a new element to the results presentation. As you're aware, we've got nine operating divisions. The largest of those is our IT Services division which is run by Mark Wyllie, who you can see on my left-hand side.

And we thought it would be interesting to delve down into a real Capita business to share with you what we're doing and what our priorities are. And also to weave into that some of the backdrop to the thinking that we have around acquisition strategy. And then finally I'm going to conclude with some thoughts around value creation.

So firstly let's look at 2011. I think it's fair to say and many of you who have written about us will know that we found 2011 a pretty tough year. I think it's also fair to say that from our perspective we **underestimated** the scale and the **severity** of the government's austerity measures. We do try and give you guys sensible and well-considered guidance. But certainly the guidance we gave you in July was **wrong** and that the organic **decline** in the business has been starker than we thought at 7%.

We hit probably quite a **strong** wall in Q3, Q4 with respect to discretionary expenditure, particularly around areas such as IT, property and recruitment. But, having said that, the environment we're in also had some upside attaching to it.

And, as you've all seen from the results announcement, it has been a record year for us in terms of major contract wins. We've secured just over GBP2b worth of work. And I will go through in a little bit more detail what that comprises.

What we also try and do is to not only **strengthen** our presence in existing markets but also to try and build presence in new markets. And we've had some **success** in 2011 in terms of building quite a **strong** position in emergency services. And again, Mark will talk to you in a little bit more detail about what we've been doing.”

No. of positive words	
good	1
strong	2
strengthen	1
success	1
Total	5

No. of Negative words	
underestimated	1
severity	1
wrong	1
decline	1
Total	4