



UNIVERSIDADE CATÓLICA PORTUGUESA

Inconsistency of Speech at the Top

An analysis on the Chairman and the CEO's
Financial Narratives

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Resumo

O objetivo deste estudo consiste em investigar a inconsistência de discurso entre o Presidente do conselho de administração (*Chairman*) e o Diretor Executivo (*CEO*) mediante a análise de certas características linguísticas nas suas narrativas financeiras.

Analizamos as respetivas secções do *Chairman* e do *CEO* incluídas nos relatórios anuais de gestão considerando uma amostra de empresas transacionadas na *London Stock Exchange* (LSE). Usando vários modelos de regressão linear, analisamos e comparamos a legibilidade, o tom e o uso de discurso *forward-looking*.

Os resultados obtidos relativos ao tom e ao discurso *forward-looking* confirmam que existe inconsistência no discurso entre ambos. Adicionalmente, aquando a análise de empresas que experienciam um declínio na sua performance, os resultados sugerem o uso de estratégias de gestão de perceções por parte do *CEO*.

Relativamente à legibilidade, os resultados obtidos diferem de acordo com as métricas utilizadas. Neste sentido, questionamos por um lado se as nossas métricas são adequadas, por outro lado se os nossos resultados são válidos.

Palavras-chave: *Chairman*, *CEO*, *Voluntary disclosure*, Gestão de Perceções, *Impression Management*, Legibilidade, Tom, Discurso *Forward-looking*.

Abstract

The purpose of this study is to investigate the inconsistency of speech between the Chairman of the board of directors and the Chief executive officer (CEO) by examining key language characteristics on their financial narratives. We analyze the chairman statement and CEO review sections on the companies' annual report considering a sample of firms listed on the London Stock Exchange (LSE). We examine and compare the readability, textual tone and the use of forward-looking discourse.

Our results on tone and forward-looking discourse confirm there is inconsistency of speech. Moreover, when considering firms with declining performance our findings are consistent with the CEO making use of impression management strategies. Results on readability differ according to the measure of readability being used. We therefore question the fit of our measures and the robustness of our findings.

Keywords: Chairman, CEO, Voluntary disclosure, Impression management, Readability, Tone, Forward-looking discourse.

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1. Introduction

Annual reports in the UK represent the main annual reporting medium (El-Haj et al., 2020). Its purpose is to provide relevant information to shareholders to support their decision-making process while enabling them to assess the company's position, performance, business model and strategy (Financial Reporting Council, 2016; FRC, 2018). In addition, the information contained in annual reports may also be of interest to other stakeholders such as financial analysts and prospective investors.

The annual report consists of two main elements: the financial statements and narrative sections; the purpose of the latter being to “amplify quantified accounting information” (Brennan & Merkl-Davies, 2013). Within the narrative sections it is important to distinguish between mandatory and discretionary disclosures. For instances, the governance report and remuneration report are mandatory content, subject to regulation and therefore tend to be more compliance-oriented and standard in nature. Voluntary narrative disclosures on the other hand contain key-performance related commentaries where managers have greater discretion on their reporting scope such as the chairman statement, chief executive officer review and the management commentary (Alves et al., 2016; El-Haj et al., 2020; Luo & Zhou, 2020). Although these discretionary narratives are reviewed by auditors in order to ensure that the messages conveyed are consistent with the financial statements, they are not formally audited (Brennan & Merkl-Davies, 2013; M. Clatworthy & Jones, 2001). In addition, companies also engage in voluntary disclosures via management forecasts, press releases, analysts' conference calls among others (Healy & Palepu, 2001).

Prior research provides conflicting evidence on the role of voluntary narrative disclosures. On the one hand, managers provide discretionary narrative disclosures to overcome information asymmetries between managers and firms' stakeholders, and those contain value-relevant information predictive of future performance (Abrahamson & Amir, 1996; Balakrishnan et al., 2010; Bryan, 1997; A. K. Davis et al., 2012; Henry, 2006, 2008; Luo & Zhou, 2020; Merkley, 2014; Patelli & Pedrini, 2014; Smith & Taffler, 2000a). On the other hand, managers can exploit information asymmetries by engaging in impression management and present information in a way that is intended to manipulate the market perception of the company's performance (Arslan-Ayaydin et al., 2016; Athanasakou & Hussainey, 2014; M. A. Clatworthy & Jones, 2006; M. Clatworthy & Jones, 2003; A. K. Davis & Tama-Sweet, 2012; Huang et al., 2014; Leung et al., 2015; Li, 2008; Lo et al., 2017; Luo & Zhou, 2020; Merkl-Davies & Brennan, 2007; Schleicher & Walker, 2010). We intend to contribute to the debate on the role of voluntary narrative disclosures by analysing discourse across two different discretionary sections within an annual report. If there is evidence of inconsistency, it would suggest that voluntary narratives are being used to engage in impression management (Alves et al., 2016; Merkl-Davies & Brennan, 2007).

This study aims to investigate the inconsistency of speech between the Chairman of the board of directors and the Chief Executive Officer (CEO) in a UK context. We examine the use of key language characteristics in two narrative disclosures included in firms' annual reports: the chairman statement and the CEO's review. As both narratives discuss firms' financial performance for the same fiscal period as well as future prospects, it allows us to check if their discourse is aligned. We analyse and compare the readability, textual tone and the use of forward-looking discourse. Readability and tone are two textual properties that have featured prominently in prior research (Li, 2011). We also

consider forward-looking discourse as research suggests that managers are likely to target forward-looking statements as an impression management strategy (Athanasakou & Hussainey, 2014; Schleicher & Walker, 2010).

Our results suggest there is inconsistency in tone and forward-looking discourse between the chairman and the CEO. Moreover, when considering firms with declining performance, the CEO uses a more optimistic tone and a more future oriented discourse than the independent chairman. Our findings are consistent with the CEO making use of impression management strategies. Results on readability differ depending on the measure being used which lead us to question the fit of our measures and the robustness of our results.

Our study extends the prior literature on financial narratives by comparing two different annual report sections when discussing financial results for the same fiscal year. Prior research has generally focused on one specific corporate disclosure channel rather than across various channels (Alves et al., 2016; El-Haj et al., 2020; Li, 2011; Luo & Zhou, 2020); (exceptions on Davis & Tama-Sweet, 2012; Liu & Nguyen, 2020). Alves et al. (2016) argue the need to perform a simultaneous analysis of different individual sections based on their incremental and predictive ability of firm performance. We also contribute to the literature on how discretionary disclosures are related to managerial opportunism. Furthermore, to the best of our knowledge there is no research on impression management focused on analysing chairman versus CEO.

The remainder of this study is organized as follows: Chapter 2 reviews prior literature and formulates the research hypotheses; Chapter 3 details the research design; Chapter 4 describes our results; Finally, chapter 5 presents the conclusion and suggests directions for future research.

2. Literature Review

2.1. Financial Narratives: “incremental information or impression management”?

2.1.1. Financial Narratives

Studies on financial narratives illustrate that discretionary disclosures not only provide value-relevant information, incremental to the financial statements, but also have predicting ability over future performance (Alves et al., 2016; El-Haj et al., 2020; Li, 2011; Luo & Zhou, 2020; Merkl-Davies & Brennan, 2007). Bryan (1997) shows that together with the financial statements, prospective disclosures in the management discussion and analysis (MD&A) are indicators of short-term future performance measures and investment decisions. Merkley (2014) observes that firms adjust their R&D narrative disclosures based on current earnings performance for the purpose of providing relevant information to market participants. Abrahamson & Amir (1996) examine the president’s letter to shareholders and conclude that the content is consistent with reported financial information and investors make use of this information to assess the quality of earnings. Moreover, the president’s letter also contains useful information about future performance. Similarly, Smith & Taffler (2000) show that the chairman statement is associated with the firm’s future financial performance, in particular firm’s financial risks which also demonstrates that such narratives have incremental information power and are not just reporting on past performance. Patelli & Pedrini (2014) explore the association between firm performance and linguistic features of CEO Letters to shareholders following the global economic

crisis. They find that optimistic tone is congruent with both past and future performance, which indicates the presence of sincerity in CEO Letters.

Prior literature also provides evidence that market participants find narrative disclosures to be useful for decision-making purposes and highlights the market reaction. Henry (2006) finds that market reacts to the verbal components of earning press releases. She notes that the inclusion of verbal information results in greater predictive accuracy of market returns beyond the inclusion of financial information. Likewise, Davis et al. (2012) find evidence that the language used by managers provides credible information about expected future firm performance and that there is a significant market reaction to unexpected net optimistic language. Balakrishnan et al. (2010) find that current period disclosure quality in the narrative disclosures of 10-K filings is associated with future returns.

Nevertheless, discretionary narratives can also be used as an impression management vehicle.

2.1.2. Impression Management

In a corporate reporting context, impression management can be defined as an “opportunistic managerial discretionary disclosure behaviour resulting in reporting bias” (page 1, Merkl-Davies & Brennan, 2011). Managers strategically present information in a way that is intended to manipulate the market perception of the company’s performance. Luo & Zhou (2020) note that in fact managers have more opportunities to manipulate qualitative rather than quantitative financial disclosure because “words are more elastic than numbers”.

According to Merkl-Davies & Brennan (2007), impression management strategies include obfuscating negative organizational outcomes, emphasizing positive outcomes and performance attribution. Clatworthy & Jones (2003), on their analysis of the chairman statement, show that companies tend to emphasize

good news regardless of their performance. They also observe that managers prefer to credit themselves for improving performance while blaming the environment for bad news. Further evidence documents that while both profitable and unprofitable companies dedicate a significant part of their chairman's narratives to discuss the future, unprofitable companies emphasize the future more than profitable companies (Clatworthy & Jones, 2006). Consistent with these findings, Athanasakou & Hussainey (2014) observe that managers issue more forward-looking performance disclosures in their annual reports when raising debt or reporting bad earnings news in the financial statements. Leung et al. (2015) find that firms can also influence the user's perception through "minimal narrative disclosure" (MND). Firms with poor performance and a higher risk of financial distress have more tendency to omit information and therefore divert investor attention away from bad news. Li (2008) finds that annual reports of firms with poor performance are harder to read whereas positive earnings are more persistent on firms with annual reports that are easier to read. Building on Li (2008), Lo et al. (2017) demonstrate that when a firm meets or just beats prior year's earnings, their MD&A report is more complex. Their result is even more evident in firms that are more likely to have engaged in earnings management. Huang et al. (2014) measure the abnormal positive tone in earning press releases and concludes that when firms have incentives to mislead investor' perceptions upwards they use a more positive tone.

Managers can as well develop an overall disclosure strategy by making use of alternative communication outlets as shown by Davis & Tama-Sweet (2012). The authors find that managers disclose less pessimistic language and more optimistic language in earnings press releases vs. the corresponding MD&A. Thus, the timing, form and visibility of different disclosures can be used as a strategy to influence market's response. Liu & Nguyen (2020) study the manager's use of language across two different narratives focusing on the Chief's

Executive Officer's letter to shareholders (CEO Letters) and corresponding MD&A. Similarly, they document that CEO Letters have more positive words and fewer negative words when describing the same firm performance.

2.2. Chairman, CEO

2.2.1. Chairman, CEO: Roles and Responsibilities

The UK provides a unique setting for this study as the UK corporate governance recommends the separation of the roles of the CEO and Chairman and that the chair should be independent at appointment (FRC, 2018). The reasoning behind the separation of roles is that the roles and responsibilities of the chairman and the CEO are different and potentially conflicting thus boards should be independent from management (Coombes & Wong, 2004). The chairman leads the board of directors with the purpose of generating value for shareholders (FRC, 2018). Comparatively, the CEO oversees the company's business and addresses its strategic and operational needs. While the CEO runs the company, the chairman runs the board whose functions include the monitoring of the CEO.

In 2018, the Financial Reporting Council reported 99% of all FTSE 350 companies to be compliant with this principle (UK Corporate Governance Code, 2018). In the US, by contrast, nearly 50% of companies in the S&P 500 combine both roles. When a single individual holds both the CEO and chairman of the board roles within an organization, it is typically referred as CEO Duality.

Prior research on the effect of corporate governance on voluntary disclosure shows that corporate governance mechanisms limit impression management. García Osma & Guillaumon-Saorín (2011), for instances, find that strong governance lowers the incidence of impression management practices in earning

press releases. Their results are consistent with governance monitoring effectively reducing self-serving disclosures by management. Similarly, Wang & Hussainey (2013) find that the level of forward-looking statements is higher in firms with larger boards and more non-executive directors which suggest that better corporate governance improves reporting practices.

2.2.2. CEO Duality: Agency and Stewardship Theory

There is extensive literature regarding CEO duality, on whether to combine or separate the roles of CEO and chairman, as ultimately the leadership structure of a firm can influence a variety of organizational outcomes. Most studies focus on establishing a link between CEO duality and firm performance and rely predominantly on agency and stewardship theories (Krause et al., 2014).

Agency theory is based on the principal-agent relationship in which both parties are utility maximizers. Managers are agents acting on behalf and on the interests of principals (shareholders) and the so-called agency problem arises as they have different goals and risk preferences; Managers are expected to base their decisions on the owner's best interests however given the opportunity, they will maximize their own personal interests at the expense of shareholders' wealth (Eisenhardt, 1989; Jensen & Meckling, 1976). In order to align principal-agent interests and limit the agent's self-serving behavior governance mechanisms are set in place.

Davis et al. (1997) stated that agency theory may not be applicable to all organizational relationships and argued the need for an alternative theory to address managerial motivations and behavior. Stewardship theory emphasizes pro-organizational and collectivistic behavior, where managers act as stewards in the best interests of their organization. Stewards are motivated to maximize organizational performance as by fulfilling the purposes and objectives of the organization their needs are met and their utility is maximized

According to agency theory the role of CEO and chairman should be assigned to separate individuals to protect shareholder interests. Stewardship theory on the other hand, specifies that both roles should be combined as duality promotes leadership unity, facilitates organizational effectiveness and shareholder interests are therefore maximized (Davis et al., 1997; Donaldson & Davis, 1991). Krause et al. (2014) suggest that boards should be allowed to adopt the leadership structure they may see more beneficial for their firms. While there is a theoretical basis for a duality-performance relationship, the authors document that overall studies provide conflicting evidence and failed to establish a direct link between CEO duality and firm performance. Still, separating the roles of the CEO and the chair is considered a best corporate governance practice. Goergen et al. (2020) identify the main reasons firms state for separating the two positions: the inherent differences between the tasks and roles associated and improved managerial oversight are the two reasons most frequently mentioned. Non-duality reflects higher board oversight and weaker CEO power.

2.3. Research Question, Hypotheses Development

2.3.1. Research Question: Chairman vs. CEO, are they conveying the same message?

The purpose of this study is to investigate the inconsistency of speech between the chairman and the CEO. Thus, we examine the chairman statement and CEO review sections on the company's annual report. The content of both narratives is performance-related though voluntary in nature and not formally audited. The chairman statement constitutes one of the most read sections of the annual report and provides an overview of the company's periodic performance and future prospects (Clatworthy & Jones, 2006; Clatworthy & Jones, 2003). The CEO review

is a natural complement to the chairman statement and discusses in more detail company's financial and operational performance (Beattie et al., 2008; Liu & Nguyen, 2020).

Analysing two narratives in which chairman and CEO describe firm performance for the same period and their expectations on future performance allow us to investigate whether the information provided is consistent. If there is inconsistency in their speech, for instances cases where the CEO review is more optimistic than the corresponding independent chairman's commentary, it suggests the CEO might have used its narrative to engage in impression management (Alves et al., 2016; Merkl-Davies & Brennan, 2007).

We analyse and compare the language characteristics and content of both sections, more specifically the readability, textual tone, and the use of forward-looking disclosure. Readability and tone are two textual properties that have featured prominently in prior research (Li, 2011). In addition, we consider the analysis of forward-looking discourse as research suggests that managers are likely to target forward-looking statements as an impression management strategy (Athanasakou & Hussainey, 2014; Schleicher & Walker, 2010).

Prior literature analyses managers' narratives in various disclosure channels and finds evidence to support both chairman and CEO making use of impression management strategies (Arslan-Ayaydin et al., 2016; Clatworthy & Jones, 2006; Clatworthy & Jones, 2003; Liu & Nguyen, 2020). As pointed out by Beattie et al. (2008), "Chairmen, chief executives and senior management can use well-crafted accounting narratives to contextualize their results". However, it is unclear how the two relate to one another. In a UK context, given that the chairman and the CEO assume different roles and responsibilities within a company, we hypothesize there is inconsistency of speech between them related as well to the fact of both having their own private interests and incentives.

We consider the effects of firm performance and develop hypotheses for “high-performing” and “low-performing” firms. Our focus is to observe if there is inconsistency of speech between the chairman and CEO with emphasis on the effects of firm performance on this inconsistency, if any. That being said, we would expect “low-performing” firms to have greater incentives in adopting reporting bias which in turn can result in discourse inconsistencies (Clatworthy & Jones, 2006; Clatworthy & Jones, 2003; Leung et al., 2015; Li, 2008; Merkl-Davies & Brennan, 2007).

2.3.2. Research Hypotheses

To test for inconsistency of speech between the chairman and the CEO we formulate the following hypotheses:

H₁: There is inconsistency in readability between the chairman statement and the CEO review narrative sections.

There are several factors that affect managers disclosure decisions (Healy & Palepu, 2001; Merkl-Davies & Brennan, 2007). When considering the effects of firm performance, managers would have incentives to obfuscate information when performance is bad. Merkl-Davies & Brennan (2007) show that preparers manipulate outsiders’ perceptions of firms’ performance by making corporate narrative documents difficult to read. Li (2008) finds evidence suggesting that managers strategically use disclosure readability to hide adverse information from investors. Similarly, Lo et al. (2017) shows that managers use higher reporting complexity to influence or mislead investors’ understanding of the firm’s value. We believe that the CEO, in comparison with the independent chairman, would be highly motivated to obfuscate information that could potentially affect negatively firm’s value, firm’s performance and by association his individual compensation. Furthermore, even though Clatworthy & Jones (2006) present results that indicate that the chairman’s statement is subject to

impression management techniques, no evidence is found to support obfuscation as a determinant of readability variability (Clatworthy & Jones, 2001). The authors focus on the chairman statement in many of their studies related to financial narratives and document that the chairman statement is significantly more readable than any other section in the annual report (Clatworthy & Jones, 2001). They note that in the UK not only it is the most read section of the annual report but also it is ranked second in overall importance by private shareholders. Clatworthy & Jones (2006) also find that the length of the chairman's statement does not differ between companies with improving or declining performance.

With these findings in mind, we believe there should be inconsistency in readability and expect the chairman statement to be more readable than the CEO review.

H₂: There is inconsistency in tone between the chairman statement and the CEO review narrative sections.

Numerous studies report that the tone of financial disclosures is informative to stakeholders and has an impact on their decisions (Luo & Zhou, 2020). Textual tone is associated with firms' operational characteristics including firms' current and future performance and influences returns in capital markets (A. K. Davis et al., 2012; Henry, 2008; Huang et al., 2014; Li, 2010; Loughran & McDonald, 2011; Luo & Zhou, 2020). Smith & Taffler (2000) for instances show that firms with higher performance use a more positive tone in their chairman statement.

Managers can however opportunistically use the market signaling function of tone by inflating the tone in their narratives. Huang et al. (2014) finds that firms use a more positive tone when they have incentives to influence investor' perceptions upwards. Arslan-Ayaydin et al. (2016) observe that managers are more likely to use a more optimistic tone when their compensation depends on the firm's stock price and less likely to inflate their tone when their compensation is more sensitive to stock price volatility. Liu & Nguyen (2020) find evidence that

the positive tone in the CEO letters to shareholders is inconsistent with current firm performance.

Taking in consideration these findings together with the prior evidence from Clatworthy & Jones (2001) on the chairman statement, we believe that the chairman's narrative should be more optimistic than the CEO's narrative when firms are performing. In reverse, when firms are under-performing ("low-performing firms"), we believe the CEO might strategically inflate his textual tone to bias market perception. The CEO discourse would therefore be more optimistic in comparison to the chairman in an attempt to maximize his stock and option-based compensation. In both circumstances we expect inconsistency in tone between the chairman and the CEO.

H₃: There is inconsistency in the use of forward-looking discourse between the chairman statement and the CEO review narrative sections.

In the UK, information regarding current and future trading is generally made through qualitative statements rather than quantitative data such as management earnings forecasts (Athanasakou & Hussainey, 2014; Schleicher & Walker, 2010). Forward-looking disclosure refers to information about the outlook of the firm that could enable end users to predict the firm's financial performance. Due to their qualitative nature, it is difficult for outsiders to effectively verify such information and therefore managers may use forward-looking disclosures to their advantage when they have incentives to influence or mislead stakeholders (Athanasakou & Hussainey, 2014). Schleicher & Walker (2010) show that managers of loss or risky firms bias the tone of forward-looking narratives. Muslu et al. (2015) find evidence that firms increase their forward-looking disclosure when their stock prices poorly reflect future earnings information. Increasing such disclosures assists in improving the lower informational efficiency of stock prices for those companies. Athanasakou & Hussainey (2014) observe that in addition to firm's disclosure policy and

information environment, the frequency of forward-looking disclosure is associated with managerial incentives. There is an increase in forward-looking disclosure in annual reports when firms raise debt or report poor performance. Hassanein et al. (2019) find a positive association between firm value and forward-looking information disclosure. Furthermore, when comparing high to low-performing firms, they observe that these disclosures positively influence investors' valuation of low-performing firms whereas have no effect on the value of high-performing firms.

It is important to highlight that forward-looking discourse has been mainly investigated in the context of annual reports as a whole. To the best of our knowledge there are no published studies on forward-looking disclosure specifically focusing on the individual sections of the chairman or CEO although those are included when researchers are analysing annual reports' narratives. That being said and in light of the findings mentioned above, we believe the CEO might use forward-looking discourse as a strategy to increase the extent to which stock prices capture the private information provided in his narrative. We therefore expect inconsistency in the use of forward-looking, discourse between the chairman and CEO and foresee the CEO to have a more forward-looking oriented speech.

3. Methodology and data

3.1. Sample Selection and Data Collection

Our study focuses on firms listed on the London Stock Exchange's (LSE). The sample period covers annual reports with fiscal year-ends between 2005 and 2017. Annual reports narratives are available from the CFIE dataset (El-Haj et al., 2020). We exclude observations that do not include both a chairman statement and a CEO review as we want our sample to reflect firms and years where the roles of the chairman and CEO are separate. Financial data is retrieved from Datastream. Our sample comprises 3,960 annual reports across 777 firms and 13 years.

3.2. Research Design

3.2.1. Estimation Model

To measure the inconsistency of speech between the chairman and the CEO we use the regression model from Alves et al. (2016). Alves et al. (2016) measure the inconsistency in tone on performance-related narratives using the chairman statement signed by the chairman and business review sections signed by the CEO and CFO.

We want to capture inconsistencies on readability, tone, and forward-looking disclosure specifically between the chairman of the board and the CEO. Thus, we examine the chairman statement signed by the chairman and CEO review signed by the CEO on the company's annual report.

We use the following OLS regression to regress the chairman's speech on the CEO's speech:

$$Language\ Characteristics_Chair_{it} = \beta_0 + \beta_1 Language\ Characteristics_CEO_{it} + \varepsilon_{it}, \quad (1-5)$$

where *Language Characteristics_Chair* and *Language Characteristics_CEO* are section-level readability, tone and forward-looking disclosure for the chairman statement and CEO business review respectively; ε_{it} denotes the error term associated to firm *i* in year *t*. The dependent variable for model (1) is the fog index of the Chairman's section included in the annual report published by firm *i* in year *t*; the independent variable for model (1) is the fog index of the CEO's review section included in the annual report published by firm *i* in year *t*. The dependent variable for model (2) is the wordcount of the Chairman's section included in the annual report published by firm *i* in year *t*; the independent variable for model (2) is the wordcount of the CEO's review section included in the annual report published by firm *i* in year *t*. The dependent variable for model (3) is the net tone of the Chairman's section included in the annual report published by firm *i* in year *t* considering the Loughran & McDonald's (2011) wordlist; the independent variable for model (3) is the net tone of the CEO's review section included in the annual report published by firm *i* in year *t* considering the Loughran & McDonald's (2011) wordlist. The dependent variable for model (4) is the net tone of the Chairman's section included in the annual report published by firm *i* in year *t* considering the Henry's (2008) wordlist; the independent variable for model (4) is the net tone of the CEO's review section included in the annual report published by firm *i* in year *t* considering the Henry's (2008) wordlist. The dependent variable for model (5) is the forward-looking discourse of the Chairman's section included in the annual report published by firm *i* in year *t*; the independent variable for model (5) is the forward-looking discourse of the CEO's review section included in the annual report published by firm *i* in year *t*.

The error term ε_{it} of each model is the regression residual that is used as proxy for within-report inconsistency as it captures everything related to the chairman's speech that is not explained by the CEO's speech. If the error term of the model is different from zero, there is inconsistency between the chairman and the CEO's narratives.

We then regress the residuals on the readability, tone, and forward-looking control variables:

$$\begin{aligned} \text{Language Characteristics_Residuals}_{it} = & \beta_0 + \beta_1 ROA_{it} + \beta_2 Ch_ROA_{it} \\ & + \beta_3 Returns_{it} + \beta_4 Earn_{it} + \beta_5 Size_{it} + \beta_6 BTM_{it} + \beta_7 Age_{it} + \beta_8 BusSeg_{it} \\ & + \beta_9 GeoSeg_{it} + \beta_{10} RetVol_{it} + \beta_{11} ROAVol_{it} + \beta_{12} D_ROA_{it} + \sum_{j=1}^{10} \beta_j DI_{jit} + \varepsilon_{it}, \end{aligned} \quad (6-10)$$

For models (6-10), the independent variables remain the same while the dependent variable varies according to the readability, tone and forward-looking residuals previously captured in models (1-5). The dependent variable for model (6) is the fog index residuals captured from model (1); the dependent variable for model (7) is the wordcount residuals captured from model (2); the dependent variable for model (8) is the net tone residuals considering the Loughran & McDonald's (2011) wordlist captured from model (3); the dependent variable for model (9) is the net tone residuals considering the Henry's (2008) wordlist captured from model (4); the dependent variable for model (10) is the forward-looking discourse residuals captured from model (5).

ROA_{it} is the return on assets of firm i in year t ; Ch_ROA_{it} is the change in the return on assets of firm i in year t ; $Returns_{it}$ is the stock returns in the fiscal year of firm i in year t ; $Earn_{it}$ is the earnings in the fiscal year of firm i in year t ; $Size_{it}$ is the logarithm of the market value of equity at the fiscal year-end of firm i in year t ; BTM_{it} is book-to-market ratio of firm i in year t ; Age_{it} is the logarithm of (1 + firm's age) of firm i in year t ; $BusSeg_{it}$ is the logarithm of (1+ number of business segments) of firm i in year t ; $GeoSeg_{it}$ is the logarithm of (1+ number of geographic segments) of firm i in year t ; $RetVol_{it}$ is the volatility of the monthly stock returns

in the last year of firm i in year t ; $ROAVol_{it}$ is the volatility of the ROA in the last 3 years of firm i in year t ; D_ROA_{it} is an indicator variable that takes the value 1 if the firm i in year t reports an increase in ROA and zero otherwise; $\sum_{j=1}^{10} \beta_j DI_{jit}$ denotes the 10 indicator variables that take the value 1 if firm i in year t refers to Industry j and zero otherwise; ε_{it} denotes the error term associated to firm i in year t .

To study the determinants of inconsistency between the chairman and CEO we formulate H_1 , H_2 , H_3 considering our entire sample of firms as well as two sub-samples, high-performing and low-performing firms based on the criteria used by Hassanein et al. (2019). Firms that have positive changes in ROA ($\Delta ROA > 0$) from the previous year are considered as high-performing firms. Comparatively, firms that have negative changes in ROA ($\Delta ROA < 0$) from the previous year are considered low-performing firms.

3.2.2. Dependent Variables

3.2.2.1. Readability

Readability focuses on an individual's ability to comprehend a message. To measure readability, we use the fog index which estimates the number of years of education a person would require to understand a text on their first reading (Li, 2008; Loughran & McDonald, 2014, 2016). The Fog index captures text complexity and is a function of two variables, average sentence length (in words) and the proportion of complex words (words with more than two syllables):

$$\text{Fog} = (\text{words per sentence} + \text{percent of complex words}) * 0.4$$

It generates a reading ease score in which higher values indicate that the content is harder to read: ≥ 18 , unreadable; 14-18, difficult; 12-14, ideal; 10-12, acceptable and 8-10, childish.

Loughran & McDonald (2014) argue that the fog index is not an appropriate readability measure to evaluate financial documents. Still the fog index is widely accepted and used by researchers in an accounting context (Li, 2008; Lo et al., 2017; Loughran & McDonald, 2014, 2016).

In addition to the fog index, Li (2008) considers the length as a measure to capture annual report readability. She notes that longer documents are more difficult to read and therefore the length of a document could be strategically used to make documents less transparent and to potentially hide adverse information from investors. As such and as in Li (2008), we also include length as a statistic to measure readability. Length is defined as:

Length = $\log(\text{NWords})$, where NWords is the number of words.

3.2.2.2. Tone

To study the tone of the narrative sections of the Chairman and CEO, we use a “bag of words” method considering the Loughran & McDonald’s (2011) wordlist. Luo & Zhou (2020) note that the Loughran & McDonald’s (2011) wordlist has been preferred in accounting and finance studies of tone since its release.

Net tone is calculated as the number of positive words minus the number of negative words, scaled by the sum of positive and negative words (Henry, 2008). The maximum and minimum values are 1 and -1 respectively.

We also consider on a separate analysis the wordlist developed by Henry (2008) which is another list created for financial text in specific. Her list contains a reduced number of words when comparing to the Loughran & McDonald’s wordlist. For example, she identifies 85 negative words whereas Loughran & McDonald’s (2011) identify 2329 words with a negative tone. Loughran & McDonald (2016) points out that commonly occurring negative words used in business communication are missing from the Henry’s (2008) dictionary. In

addition, by default, results based on the Henry's (2008) list are likely to indicate a more optimistic tone in comparison with an analysis based on the Loughran & McDonald's (2011) dictionary. Despite the mentioned limitations, we consider the Henry's (2008) wordlist in our study as a validation tool. Furthermore, Cao et al. (2020) find evidence that in the era of artificial intelligence, where automated computational processes are becoming the new norm to analyse financial narratives, companies manage textual tone by significantly reducing the frequency of negative words considered by the Loughran & McDonald's (2011) dictionary.

Li (2010) discusses the disadvantages of using a dictionary-based approach. The author notes that this approach does not consider the context of a sentence and disregards prior knowledge that researchers might have concerning the text. Although a word frequency count method might look like a simple approach in order to measure tone, Henry & Leone (2016) present evidence that equal weighing, domain-specific, word-frequency tone measures are "just as powerful" in a context of financial disclosure and capital markets as other methods such as frequency weighting (Loughran & McDonald, 2011) and the Naïve Bayesian machine-learning approach (Li, 2010).

3.2.2.3. Forward-Looking

Hussainey et al. (2003) defines forward-looking words as key words associated with forecast and predictions. The authors identify the number of forward-looking statements in the narratives of annual reports based on a list of forward-looking keywords they developed.

We identify forward-looking words based on the list of future-oriented words from El-Haj et al. (2020). This list is an update version of the one proposed by Hussainey et al. (2003). Forward-looking discourse is calculated as the number

of forward-looking words scaled by the total number of words (El-Haj et al., 2020).

3.2.3. Control Variables

Our list of control variables derives from Li (2008, 2010) and include measures related to the firm's financial and operational fundamentals that can therefore be determinants of Readability, Tone and Forward-Looking disclosure.

In order to control for firm characteristics we include: Return on assets (*ROA*) and change in ROA (*Ch_ROA*) as proxies for profitability; market and financial performance are measured by the stock returns (*Returns*) and earnings (*Earn*); book-to-market ratio (*BTM*) as proxy for growth opportunities while age (*Age*) controls for the age of the company; the market value of equity (*Size*) controls for firm size; stock return volatility (*RetVol*) and ROA volatility (*ROAVol*) control for the business and operational risks of the company; business (*BusSeg*) and geographic (*GeoSeg*) segments control for business complexity; a ROA indicator variable (*D_ROA*) to control for increases and decreases in ROA from the previous year; we also control for industry group (*Industry fixed-effects*). Variables are defined in Table 18 in the appendix.

4. Results

4.1. Descriptive Statistics

Table 1 provides descriptive statistics for our sample including readability, tone, forward-looking narrative measures and our control variables. The median firm in our sample is 24 years of age and is active in 2 business segments and 2 geographic segments. It has a return on assets of 4.52%, earnings of 4.73% and yearly stock returns of 1.11; a market capitalization of £ 325M, a book-to-market ratio of 0.56, stock return and ROA volatility of 7.61% and 3.03% respectively.

The average chairman statement requires 19.8640 years of education whereas the average CEO review requires 19.9420 years of education. While the chair's letter displays on average a lower fog index and therefore higher readability, according to the interpretation of the index, both narratives are "unreadable" (Fog Index ≥ 18 , unreadable). In terms of length, we note that the average chair's letter is much shorter (962 words) than the average CEO review (2,051 words).

In regards to tone, both the chair and CEO's narratives of the average annual report display positive tone. The chairman statement has on average approximately 43% more positive than negative words while the CEO review has on average approximately 40% more positive than negative words according to the Loughran & McDonald's (2011) wordlist. Statistics based on the Henry's 2008 wordlist also report that the tone of the chair's letter is on average more optimistic than the tone of the CEO's narrative. In addition, we note that the net tone measured by the Loughran & McDonald's 2011 dictionary is effectively more downward bias.

Forward-looking discourse follows a similar pattern to readability and tone as the narrative of the chairman also present a higher percentage of forward-looking

words in comparison with the CEO narrative. The mean (median) of the chairman statement and CEO review are 0.0169 (0.0165) and 0.0150 (0.0120) which indicate that on average 1.69% of the words in the chairman statement and 1.50% of the words in the CEO review are future oriented.

Descriptive Statistics							
Variables	Mean	Std. Dev.	Min	P25	P50	P75	Max
Fog Chair	19,8640	3,4532	0,0000	18,2521	19,6631	21,0982	121,3151
Fog CEO	19,9420	3,5809	10,0741	18,2963	19,7202	21,1726	123,4585
Fog Annual Report**	23,0508	3,7283	14,9474	20,7906	22,1825	24,3638	56,5841
Wordcount Chair	961,8606	522,3585	161,0000	628,5000	863,5000	1,184,0000	9,540,0000
Wordcount CEO	2,050,8940	1,602,2720	196,0000	1,111,0000	1,697,5000	2,567,5000	43,551,0000
Wordcount Annual Report**	29,594,5900	23,325,4100	1,447,0000	12,294,0000	24,638,5000	40,707,5000	232,480,0000
Net Tone LM Chair	0,4283	0,2246	-0,7143	0,3000	0,4510	0,5849	1,0000
Net Tone LM CEO	0,3973	0,2249	-1,0000	0,2748	0,4286	0,5556	1,0000
Net Tone LM Annual Report**	0,1101	0,1438	-0,6627	0,0245	0,1202	0,2000	0,5556
Net Tone Henry8 Chair	0,7036	0,2277	-1,0000	0,5914	0,7500	0,8667	1,0000
Net Tone Henry8 CEO	0,6934	0,2233	-1,0000	0,5926	0,7419	0,8454	1,0000
Net Tone Henry8 Annual Report**	0,3839	0,1740	-0,3667	0,2877	0,3979	0,4989	0,8750
Forward-looking Chair	0,0169	0,0066	0,0000	0,0126	0,0165	0,0208	0,0479
Forward-looking CEO	0,0150	0,0066	0,0000	0,0106	0,0142	0,0187	0,0636
Forward-looking Annual Report**	0,0120	0,0026	0,0000	0,0103	0,0119	0,0135	0,0267
ROA	0,0219	0,1557	-0,8721	0,0014	0,0452	0,0949	0,4031
Change in ROA	0,0052	0,1225	-0,8671	-0,0209	0,0072	0,0396	0,6265
Stock Returns	1,1668	0,5933	0,0505	0,8573	1,1059	1,3642	10,5823
Earnings	-0,0038	0,2218	-2,3283	0,0025	0,0473	0,0762	0,3673
Market Value	3,478,1630	11,463,8200	0,6200	53,8150	324,5600	1,652,8950	153,265,0000
Book to Market Ratio	0,6561	0,4371	0,0020	0,3396	0,5617	0,8683	3,2349
Firm Age	28,9553	16,5955	2,0000	16,0000	24,0000	47,0000	57,0000
Nr. of Business Segments	2,6722	1,8278	1,0000	1,0000	2,0000	4,0000	11,0000
Nr. of Geographic Segments	2,8889	2,1513	1,0000	1,0000	2,0000	4,0000	11,0000
Stock Return Volatility	0,0969	0,0730	0,0150	0,0533	0,0761	0,1137	0,6527
ROA Volatility	0,0615	0,0823	0,0002	0,0113	0,0303	0,0799	0,7555

Notes: The statistics presented are computed across 3,960 observations. **Narratives component of the Annual Report.

Table 1: Descriptive statistics

Table 2 provides descriptive statistics distinguishing between high-performing ($\Delta ROA > 0$) and low-performing firms ($\Delta ROA < 0$). The chairman statement and CEO review of low-performing firms present on average lower readability (higher fog index), a less optimistic tone and a higher percentage of forward-looking words in comparison with the high-performing firms' sample.

Focusing on the statistics of low-performing firms and considering the fog index as measure of readability, the average CEO review (20.0022) is easier to read than the average chairman statement (20.0598). The median CEO review

however presents lower readability (19.7786) compared with the median chairman statement (19.7479). In regards to tone, the chairman statement of low-performing firms has on average a more optimistic tone versus the CEO review according to the Loughran & McDonald's 2011 dictionary. On an interesting note, the reverse occurs when net tone is calculated based on the Henry's 2008 wordlist. We believe this is due to the fact that the Henry's dictionary not only has a much lower number of negative words but also the ratio between positive and negative words is much higher. To finalize our analysis, we note that the average chair's letter of low-performing firms uses forward-looking discourse more in comparison with the average CEO review.

Descriptive Statistics by Changes in ROA from the previous year							
Variables	Mean	Std. Dev.	Min	P25	P50	P75	Max
Panel A: High-Performing Firms; positive changes in ROA from the previous year							
Fog Chair	19,7367	2,9943	0,0000	18,1678	19,5960	20,9982	95,4780
Fog CEO	19,9030	3,8446	11,1662	18,2650	19,6882	21,1232	123,4585
Fog Annual Report**	23,0650	3,8341	14,9474	20,7064	22,1438	24,4009	54,5837
Wordcount Chair	949,9529	490,9492	161,0000	622,5000	853,5000	1.178,5000	5.801,0000
Wordcount CEO	2.035,8100	1.457,9630	196,0000	1.102,5000	1.686,5000	2.566,0000	17.978,0000
Wordcount Annual Report**	29.477,5200	22.339,0000	1.447,0000	12.724,0000	24.818,5000	40.739,5000	211.004,0000
Net Tone LM Chair	0,4691	0,2052	-0,6364	0,3529	0,4861	0,6119	1,0000
Net Tone LM CEO	0,4305	0,2113	-0,5833	0,3228	0,4569	0,5762	1,0000
Net Tone LM Annual Report**	0,1277	0,1379	-0,4231	0,0455	0,1340	0,2147	0,5556
Net Tone Henry8 Chair	0,7480	0,1983	-1,0000	0,6496	0,7857	0,8889	1,0000
Net Tone Henry8 CEO	0,7238	0,2095	-1,0000	0,6333	0,7692	0,8621	1,0000
Net Tone Henry8 Annual Report**	0,4059	0,1664	-0,2968	0,3149	0,4179	0,5143	0,8750
Forward-looking Chair	0,0167	0,0065	0,0000	0,0124	0,0162	0,0206	0,0479
Forward-looking CEO	0,0146	0,0066	0,0000	0,0101	0,0138	0,0184	0,0636
Forward-looking Annual Report**	0,0119	0,0026	0,0000	0,0103	0,0119	0,0135	0,0265
ROA	0,0590	0,1343	-0,8721	0,0262	0,0657	0,1149	0,4031
Change in ROA	0,0611	0,0859	0,0000	0,0113	0,0289	0,0728	0,6265
Stock Returns	1,2650	0,6360	0,0996	0,9500	1,1721	1,4425	10,5823
Earnings	0,0373	0,1522	-2,0957	0,0330	0,0571	0,0842	0,3577
Market Value	3.578,5760	11.313,7500	0,6200	64,7050	382.92	1.820,9100	153.265,0000
Book to Market Ratio	0,6077	0,4117	0,0020	0,3151	0,5132	0,8111	3,2349
Firm Age	29,4233	16,7251	2,0000	16,0000	24,0000	49,0000	57,0000
Nr. of Business Segments	2,6854	1,8128	1,0000	1,0000	2,0000	4,0000	11,0000
Nr. of Geographic Segments	2,9175	2,1527	1,0000	1,0000	3,0000	4,0000	11,0000
Stock Return Volatility	0,0928	0,0694	0,0157	0,0523	0,0733	0,1082	0,6527
ROA Volatility	0,0563	0,0805	0,0002	0,0103	0,0255	0,0734	0,7555
Panel B: Low-Performing Firms; negative changes in ROA from the previous year							
Fog Chair	20,0598	4,0523	0,0000	18,3362	19,7479	21,2087	121,3151
Fog CEO	20,0022	3,1323	10,0741	18,3722	19,7786	21,2346	75,2951
Fog Annual Report**	23,0290	3,5606	16,5172	20,8642	22,2492	24,2609	56,5841
Wordcount Chair	980,1801	566,9703	163,0000	642,0000	878,5000	1.192,5000	9.540,0000
Wordcount CEO	2.074,1020	1.802,1100	213,0000	1.135,5000	1.729,5000	2.571,0000	43.551,0000
Wordcount Annual Report**	29.774,7000	24.772,6400	2.141,0000	11.882,5000	24.270,5000	40.686,5000	232.480,0000
Net Tone LM Chair	0,3654	0,2382	-0,7143	0,2231	0,3917	0,5294	1,0000
Net Tone LM CEO	0,3463	0,2354	-1,0000	0,2152	0,3750	0,5112	1,0000
Net Tone LM Annual Report**	0,0831	0,1485	-0,6627	-0,0060	0,0936	0,1784	0,5379
Net Tone Henry8 Chair	0,6352	0,2518	-0,7778	0,5000	0,6863	0,8182	1,0000
Net Tone Henry8 CEO	0,6468	0,2357	-1,0000	0,5333	0,6923	0,8135	1,0000
Net Tone Henry8 Annual Report**	0,3500	0,1798	-0,3667	0,2454	0,3661	0,4698	0,8742
Forward-looking Chair	0,0171	0,0066	0,0000	0,0129	0,0168	0,0211	0,0418
Forward-looking CEO	0,0155	0,0065	0,0000	0,0112	0,0148	0,0191	0,0461
Forward-looking Annual Report**	0,0121	0,0026	0,0020	0,0104	0,0120	0,0137	0,0267
ROA	-0,0351	0,1687	-0,8510	-0,0722	0,0102	0,0530	0,3476
Change in ROA	-0,0809	0,1206	-0,8671	-0,0980	-0,0351	-0,0121	0,0000
Stock Returns	1,0158	0,4835	0,0505	0,7225	0,9776	1,2359	5,7484
Earnings	-0,0669	0,2875	-2,3283	-0,0822	0,0182	0,0594	0,3673
Market Value	3.323,6830	11.692,9200	0,9500	41,0350	239,7500	1.290,4750	130.498,0000
Book to Market Ratio	0,7306	0,4640	0,0105	0,3958	0,6354	0,9626	3,2263
Firm Age	28,2353	16,3734	3,0000	16,0000	22,5000	38,0000	57,0000
Nr. of Business Segments	2,6519	1,8511	1,0000	1,0000	2,0000	4,0000	11,0000
Nr. of Geographic Segments	2,8449	2,1491	1,0000	1,0000	2,0000	4,0000	11,0000
Stock Return Volatility	0,1032	0,0777	0,0150	0,0551	0,0803	0,1245	0,6527
ROA Volatility	0,0695	0,0844	0,0002	0,0146	0,0386	0,0913	0,7555

Notes: The statistics presented for Panel A and Panel B are computed across 2,400 and 1,560 observations, respectively. **Narratives component of the Annual Report.

Table 2: Descriptive statistics by changes in ROA from the previous year

4.2. Discourse Inconsistencies

4.2.1. Readability

Table 3 presents the regression models that capture inconsistency in readability considering the fog index as measure of readability. We regress the chairman's section level fog index on the CEO's section level fog index for our entire sample of firms as well as for the sub-samples of high-performing and low-performing firms, as described in equations (1.1 – 1.3).

OLS Estimation Results						
	Fog Chair Entire Sample		Fog Chair High-Performing Firms		Fog Chair Low-Performing Firms	
	1.1		1.2		1.3	
Fog CEO	0,2193 (0,0514)	***				
Fog CEO			0,1878 (0,0601)	***		
Fog CEO					0,2904 (0,0625)	***
R-squared	0,0517		0,0582		0,0504	
Overall F-Test	18,1900	***	9,7800	***	21,5700	***
N	3960		2400		1560	

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10.

Table 3: Regression models that capture inconsistency in readability, fog index

Table 4 shows the descriptive statistics on the fog index regressions' residuals which are used as proxy for within-report readability inconsistency. The median firm in our sample has a negative fog index residual which indicates that the narrative of the chairman displays higher readability in comparison with the CEO's narrative. We can therefore confirm H_1 .

Focusing on our sub-samples, we observe that the median low-performing firm presents a positive fog index residual. This result also supports H_1 and translates into the CEO review being easier to read than the chairman statement. That being said and although we find evidence of inconsistency when firms are

experiencing declining performance, the result is contrary to our expectation. Prior research on impression management shows that managers obfuscate bad news by reading ease manipulation (Courtis, 2004; Merkl-Davies & Brennan, 2007). Moreover, Li (2008) establishes a statistically significant negative relationship between firm performance and readability. In the presence of poor performance, we would expect the CEO to obfuscate information in a way intended to influence and manipulate users' perception of firm's value. Nevertheless, Li (2008) also observes that the benefit of making annual reports more complex to hide poor performance appears to be small. Furthermore, when adding current earnings to explain readability, there is no increment on the *r*-square statistic which suggests that economic performance is not a primary determinant of annual report readability. In addition, she finds no evidence of a correlation between annual report readability and future stock returns.

We further identify additional reasons that could corroborate our finding. Bloomfield (2008) discusses alternative explanations to the results obtained by Li (2008) and notes that it is unclear whether her findings are due to managers having incentives to obfuscate bad performance or that bad news are just harder to communicate. Managers might also attempt to distract investors away from bad news by focusing on other good news and therefore may write longer and more complex narratives. Similarly, Clatworthy & Jones (2006) show that additional length or complexity in the chairman narrative of unprofitable companies may reflect managers' attempt to attribute bad news to external events rather than poor management. Again, it is not clear if these reporting strategies are deliberate or used in an unconscious manner.

To summarize, we believe that on the one hand the chairman statement displays lower readability (in comparison with the CEO review) considering low-performing firms due to the fact that discretionary narratives are indeed used for incremental information purposes. On the other hand, we can also

presume that the CEO is either not engaging in impression management or not using reading ease manipulation as an impression management strategy.

Fog Residuals Descriptive Statistics								
Variables	N	Mean	Std. Dev.	Min	P25	P50	P75	Max
Fog Residuals Entire Sample	3960	0,0000+	3,3627	-21,4287	-1,4990	-0,1818	1,1612	101,4593
Panel A: High-Performing Firms; positive changes in ROA from the previous year								
Fog Residuals High-Performing Firms	2400	0,0000+	2,9059	-19,2407	-1,4610	-0,1500	1,2478	76,2022
Panel B: Low-Performing Firms; negative changes in ROA from the previous year								
Fog Residuals Low-Performing Firms	1560	0,3044	3,9620	-19,5265	-1,2750	0,0212	1,3678	101,5780
Notes: 0,0000+ denotes a value greater than 0,0000 and smaller than 0,0001. 0,0000- denotes a value greater than -0,0001 and smaller than 0,0000.								

Table 4: Descriptive statistics, fog index residuals

After capturing inconsistency in readability, we then regress the fog index residuals on our control variables as described in equations (6.1 – 6.3). Table 5 shows the estimation results for the mentioned regression models.

There is a statistically insignificant relationship between the ROA, Earnings and the fog index residuals. This finding indicates that the financial and market performance of a firm does not seem to impact the consistency in readability between chairman and CEO. Stock returns loads with a negative coefficient for high-performing firms however only with a 10% significance level.

Considering low-performing firms, we identify firm's age and the volatility of the business as measured by stock return volatility as factors influencing discourse inconsistency.

OLS Estimation Results					
	Fog Residuals Entire Sample		Fog Residuals High-Performing Firms		Fog Residuals Low-Performing Firms
	6.1		6.2		6.3
ROA	-0,1125 (0,3376)		-0,1203 (0,5002)		0,1012 (0,5005)
Change in ROA	0,8119 (0,4408)	*	0,7488 (0,7071)		0,8699 (0,7039)
Stock Returns	-0,0550 (0,0832)		-0,1452 (0,0819)	*	0,2055 (0,2223)
Earnings	-0,0620 (0,2213)		-0,2664 (0,3441)		-0,1005 (0,2950)
Size	0,0398 (0,0280)		0,0310 (0,0292)		0,0489 (0,0512)
BTM	-0,1023 (0,1415)		-0,1640 (0,2042)		0,0265 (0,1912)
Firm Age	0,4687 (0,1305)	***	0,4830 (0,1179)	***	0,4749 (0,2872)
Nr. of Business Segments	-0,2848 (0,1138)	**	-0,3696 (0,1415)	***	-0,2144 (0,1851)
Nr. of Geographic Segments	0,0201 (0,1133)		0,0823 (0,1477)		-0,0313 (0,1816)
Stock Return Volatility	1,5535 (0,7155)	**	0,0636 (0,9897)		3,1543 (1,0626)
ROA Volatility	-0,1311 (0,7260)		-0,2247 (0,7341)		0,2453 (1,4264)
ROA Dummy	0,1519 (0,1408)				
Industry fixed-effects	Yes		Yes		Yes
R-squared	0,0230		0,0277		0,0233
Overall F-Test	5,2800	***	3,1600	***	3,8100
N	3960		2400		1560

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10. 0,0000+ denotes a value greater than 0,0000 and smaller than 0,0001. 0,0000- denotes a value greater than -0,0001 and smaller than 0,0000.

Table 5: OLS coefficients estimates of fog index residuals

Table 6 presents the regression models that capture inconsistency in readability considering the wordcount as measure of readability. We regress the chairman's section level wordcount on the CEO's section level wordcount for our entire sample of firms as well as for the sub-samples of high-performing and low-performing firms, as described in equations (2.1 – 2.3).

OLS Estimation Results						
	Wordcount Chair Entire Sample		Wordcount Chair High-Performing Firms		Wordcount Chair Low-Performing Firms	
	2.1		2.2		2.3	
Wordcount CEO	0,1527 (0,0131)	***				
Wordcount CEO			0,1418 (0,0169)	***		
Wordcount CEO					0,1690 (0,0208)	***
R-squared	0,0430		0,0376		0,0518	
Overall F-Test	135,8100	***	70,5400	***	66,0200	***
N	3960		2400		1560	

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10.

Table 6: Regression models that capture inconsistency in readability, wordcount

Table 7 shows the descriptive statistics on the wordcount regressions' residuals which are used as proxy for within-report readability inconsistency. When considering wordcount as a readability measure, the CEO narrative for the median firm in all our samples has a higher readability than the chairman narrative. This result is contradictory with our previous analysis based on the fog index. Accordingly, as different readability measures lead us to different conclusions, we question the validity of the measures and subsequently the validity of our findings. It should be noted however that we are comparing two different sections of the annual report which by default have distinct lengths. As mentioned in section 4.1, the average CEO review length is more than double the average chair's letter. Using length as a measure of readability in our case might not be adequate. On another note, Loughran & McDonald (2014) show that the component "complex words" in the fog index is a poorly specified measure to evaluate financial documents. Business text typically includes a high percentage of "complex words" that are simple common business terms well understood by investors and analysts. They argue that if firms are trying to obscure information,

they are more likely to bury the results in longer documents. The authors propose using the file size (in megabytes) of the 10-K and indicate length as well as a reasonable proxy for document readability.

Wordcount Residuals Descriptive Statistics								
Variables	N	Mean	Std. Dev.	Min	P25	P50	P75	Max
Wordcount Residuals Entire Sample	3960	0,0000-	0,4712	-1,7735	-0,3047	0,0020	0,3147	2,3422
Panel A: High-Performing Firms; positive changes in ROA from the previous year								
Wordcount Residuals High-Performing Firms	2400	0,0000+	0,4703	-1,7559	-0,3058	0,0035	0,3227	1,6904
Panel B: Low-Performing Firms; negative changes in ROA from the previous year								
Wordcount Residuals Low-Performing Firms	1560	0,0240	0,4724	-1,6524	-0,2754	0,0339	0,3272	2,3565
Notes: 0,0000+ denotes a value greater than 0,0000 and smaller than 0,0001. 0,0000- denotes a value greater than -0,0001 and smaller than 0,0000.								

Table 7: Descriptive statistics, wordcount residuals

Table 8 shows the estimation results for the equations (7.1 – 7.3). There is also a statistically insignificant relationship between market, financial performance proxies and inconsistency. Change in ROA is statistically significant only at 10% level for low-performing firms.

OLS Estimation Results						
	Wordcount Residuals		Wordcount Residuals		Wordcount Residuals	
	Entire Sample		High-Performing Firms		Low-Performing Firms	
	7.1		7.2		7.3	
ROA	-0,0332		0,0253		-0,1157	
	(0,0660)		(0,0979)		(0,0955)	
Change in ROA	0,0568		0,0518		0,2448	**
	(0,0734)		(0,1273)		(0,1086)	
Stock Returns	0,0020		0,0000+		0,0085	
	(0,0127)		(0,0150)		(0,0252)	
Earnings	0,0531		0,0056		0,0713	
	(0,0396)		(0,0682)		(0,0490)	
Size	-0,0329	***	-0,0366	***	-0,0304	***
	(0,0042)		(0,0055)		(0,0067)	
BTM	-0,0804	***	-0,0989	***	-0,0511	*
	(0,0187)		(0,0253)		(0,0279)	
Firm Age	0,0098		0,0328	**	-0,0301	
	(0,0133)		(0,0164)		(0,0228)	
Nr. of Business Segments	-0,0733	***	-0,0984	***	-0,0387	
	(0,0170)		(0,0220)		(0,0269)	
Nr. of Geographic Segments	0,0261		0,0300		0,0254	
	(0,0167)		(0,0218)		(0,0262)	
Stock Return Volatility	0,2897	**	0,2099		0,3272	*
	(0,1297)		(0,1761)		(0,1913)	
ROA Volatility	0,0222		-0,0556		0,2306	
	(0,0909)		(0,1232)		(0,1460)	
ROA Dummy	0,0188					
	(0,0182)					
Industry fixed-effects	Yes		Yes		Yes	
R-squared	0,0838		0,0850		0,0996	
Overall F-Test	15,9100	***	10,5600	***	8,2700	***
N	3960		2400		1560	

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10. 0,0000+ denotes a value greater than 0,0000 and smaller than 0,0001. 0,0000- denotes a value greater than -0,0001 and smaller than 0,0000.

Table 8: OLS coefficients estimates of wordcount residuals

4.2.2. Tone

Table 9 presents the regression models that capture textual tone inconsistency considering the Loughran & McDonald's 2011 wordlist. We regress the chairman's section level net tone on the CEO's section level net tone for our entire sample of firms as well as for the sub-samples of high-performing and low-performing firms, as described in equations (3.1 – 3.3).

OLS Estimation Results						
	Net Tone LM Chair Entire Sample		Net Tone LM Chair High-Performing Firms		Net Tone LM Chair Low-Performing Firms	
	3.1		3.2		3.3	
Net Tone LM CEO	0,5347 (0,0162)	***				
Net Tone LM CEO			0,4735 (0,0204)	***		
Net Tone LM CEO					0,5566 (0,0257)	***
R-squared	0,2866		0,2376		0,3023	
Overall F-Test	1093,2300	***	541,1700	***	469,9000	***
N	3960		2400		1560	

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis.

*** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10.

Table 9: Regression models that capture tone inconsistency, Loughran & McDonald's 2011 wordlist

Table 10 shows the descriptive statistics on the net tone regressions' residuals which are used as proxy for within-report tone inconsistency. The median firm in our sample reports a positive net tone residual which seems to indicate that the chair's letter displays a more optimistic tone in comparison with the CEO review. We can therefore confirm H_2 .

We further develop our analysis and observe that the median low-performing firm has a negative net tone residual. This finding is consistent with our prediction as it suggests that not only there is inconsistency between the tone of

the chairman and the CEO but also in the case of low-performing firms, the CEO is more optimistic and presents a more positive discourse than the Chairman. Huang et al. (2014) notes that managers' incentive to mislead investors may be related with desire for prestige or to financial motives associated with agency problems. The authors find evidence that an abnormally positive tone incites an overly optimistic stock price response. Arslan-Ayaydin et al. (2016) show that equity-based incentives induce managers to opportunistically use voluntary disclosures to influence investors' expectations of future performance and thereby maximize the value of their own stock and option portfolios. Similarly, our findings suggest that in the presence of bad performance, the CEO inflates the tone of his narrative for the purpose of manipulating analysts and investors' perceptions which in turn will hype stock prices and maximize their compensation. In the presence of bad performance, the CEO opportunistically chooses a more optimistic tone relative to the independent chairman in order to advance his own personal interests. Such reporting bias is consistent with voluntary narrative disclosures being used as an impression management vehicle.

Net Tone LM Residuals Descriptive Statistics								
Variables	N	Mean	Std. Dev.	Min	P25	P50	P75	Max
Net Tone LM Residuals Entire Sample	3960	0,0000-	0,1897	-1,0532	-0,1122	0,0104	0,1260	0,7414
Panel A: High-Performing Firms; positive changes in ROA from the previous year								
Net Tone LM Residuals High-Performing Firms	2400	0,0000-	0,1792	-1,0797	-0,1125	0,0122	0,1181	0,6968
Panel B: Low-Performing Firms; negative changes in ROA from the previous year								
Net Tone LM Residuals Low-Performing Firms	1560	-0,0638	0,2000	-0,9798	-0,1808	-0,0491	0,0703	0,6079

Notes: 0,0000+ denotes a value greater than 0,0000 and smaller than 0,0001. 0,0000- denotes a value greater than -0,0001 and smaller than 0,0000.

Table 10: Descriptive statistics, net tone residuals, Loughran & McDonald's 2011 wordlist

After capturing tone inconsistency, we then regress the net tone residuals on our control variables as described in equations (8.1 – 8.3). Table 11 shows the estimation results for the mentioned regression models.

We observe that ROA and Earnings load with positive coefficients. When firm performance increases, tone will most likely be more optimistic and consequently we observe a decrease in the inconsistency of tone between chairman and CEO's narratives. Regarding low-performing firms, stock returns are negatively associated with inconsistency, which means that when stock returns decrease, the inconsistency in tone between chairman and CEO increases.

Additional factors influencing discourse inconsistency for low-performing firms include the book-to-market ratio, firm's age, and ROA volatility. The CEO will have a more optimistic tone (vs. the independent chairman) in annual reports of younger firms, firms with more volatile business and with higher book-to-market ratios.

OLS Estimation Results						
	Net Tone LM Residuals		Net Tone LM Residuals		Net Tone LM Residuals	
	Entire Sample		High-Performing Firms		Low-Performing Firms	
	8.1		8.2		8.1	
ROA	-0,0891	***	-0,0935	**	-0,0763	*
	(0,0283)		(0,0389)		(0,0438)	
Change in ROA	0,0462		0,0699		-0,0071	
	(0,0322)		(0,0495)		(0,0530)	
Stock Returns	-0,0112	*	-0,0013		-0,0430	***
	(0,0060)		(0,0074)		(0,0117)	
Earnings	-0,0811	***	-0,1106	***	-0,0582	**
	(0,0202)		(0,0302)		(0,0251)	
Size	0,0002		0,0004		-0,0025	
	(0,0018)		(0,0021)		(0,0030)	
BTM	0,0486	***	0,0544	***	0,0489	***
	(0,0077)		(0,0100)		(0,0120)	
Firm Age	0,0128	**	0,0096		0,0248	***
	(0,0055)		(0,0067)		(0,0092)	
Nr. of Business Segments	0,0070		0,0158	*	-0,0060	
	(0,0069)		(0,0086)		(0,0111)	
Nr. of Geographic Segments	0,0059		0,0012		0,0134	
	(0,0065)		(0,0082)		(0,0104)	
Stock Return Volatility	-0,1104	**	-0,1203	*	-0,0920	
	(0,0544)		(0,0721)		(0,0847)	
ROA Volatility	0,1376	**	0,1485	***	0,1122	*
	(0,0420)		(0,0562)		(0,0658)	
ROA Dummy	-0,0391	***				
	(0,0074)					
Industry fixed-effects	Yes		Yes		Yes	
R-squared	0,0858		0,0799		0,0965	
Overall F-Test	15,2100	***	9,7100	***	6,4200	***
N	3960		2400		1560	

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10.

Table 11: OLS coefficients estimates of net tone residuals, Loughran & McDonald's 2011 wordlist

Table 12 presents the regression models that capture textual tone inconsistency considering the Henry's 2008 wordlist, as described in equations (4.1 – 4.3).

OLS Estimation Results					
	Net Tone Henry8 Chair Entire Sample		Net Tone Henry8 Chair High-Performing Firms		Net Tone Henry8 Chair Low-Performing Firms
	4.1		4.2		4.3
Net Tone Henry8 CEO	0,4325 (0,0206)	***			
Net Tone Henry8 CEO			0,3432 (0,0251)	***	
Net Tone Henry8 CEO					0,4741 (0,0316)
R-squared	0,1800		0,1315		0,1969
Overall F-Test	439,9500	***	186,8800	***	224,6900
N	3960		1560		2400

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values <0.05, and * denote p-values <0.10.

Table 12: Regression models that capture tone inconsistency, Henry's 2008 wordlist

Table 13 shows the descriptive statistics on the net tone regressions' residuals which are used as proxy for within-report tone inconsistency. Similar results hold using the Henry's 2008 wordlist comparing with the previous analysis based on the Loughran & McDonald's 2011 wordlist. Our findings also suggest that there is inconsistency between the tone of the Chairman and the CEO for the median firm in our sample and that the CEO is more optimistic than the Chairman considering the median low-performing firm.

Net Tone Henry8 Residuals Descriptive Statistics								
Variables	N	Mean	Std. Dev.	Min	P25	P50	P75	Max
Net Tone Henry8 Residuals Entire Sample	3960	0,0000+	0,2062	-1,6632	-0,0995	0,0294	0,1350	0,7484
Panel A: High-Performing Firms; positive changes in ROA from the previous year								
Net Tone Henry8 Residuals High-Performing Firms	2400	0,0000+	0,1848	-1,7055	-0,0909	0,0265	0,1223	0,6148
Panel B: Low-Performing Firms; negative changes in ROA from the previous year								
Net Tone Henry8 Residuals Low-Performing Firms	1560	-0,0864	0,2278	-1,4479	-0,2093	-0,0484	0,0717	0,4428

Notes: 0,0000+ denotes a value greater than 0,0000 and smaller than 0,0001. 0,0000- denotes a value greater than -0,0001 and smaller than 0,0000.

Table 13: Descriptive statistics, net tone residuals, Henry's 2008 wordlist

Table 14 shows the estimation results for the equations (9.1 – 9.3). According to the Henry's 2008 wordlist, tone inconsistency is also positively influenced by firm's size.

OLS Estimation Results					
	Net Tone Henry8 Residuals Entire Sample		Net Tone Henry8 Residuals High-Performing Firms		Net Tone Henry8 Residuals Low-Performing Firms
	9.1		9.2		9.3
ROA	-0,0351 (0,0277)		-0,0855 (0,0388)	**	-0,0071 (0,0430)
Change in ROA	0,0310 (0,0356)		0,0433 (0,0511)		-0,0546 (0,0595)
Stock Returns	-0,0185 (0,0062)	***	-0,0067 (0,0073)		-0,0637 (0,0138)
Earnings	-0,0693 (0,0208)	***	-0,0444 (0,0318)		-0,0544 (0,0262)
Size	0,0076 (0,0020)	***	0,0079 (0,0024)	***	0,0055 (0,0033)
BTM	0,0585 (0,0090)	***	0,0550 (0,0115)	***	0,0714 (0,0143)
Firm Age	0,0065 (0,0057)		0,0015 (0,0066)		0,0235 (0,0104)
Nr. of Business Segments	-0,0044 (0,0074)		-0,0046 (0,0087)		-0,0054 (0,0131)
Nr. of Geographic Segments	0,0057 (0,0070)		0,0033 (0,0086)		0,0099 (0,0117)
Stock Return Volatility	-0,1018 (0,0590)	*	-0,1362 (0,0766)	*	-0,0130 (0,0916)
ROA Volatility	0,0831 (0,0469)	*	0,1155 (0,0653)	*	-0,0195 (0,0730)
ROA Dummy	-0,0648 (0,0082)	***			
Industry fixed-effects	Yes		Yes		Yes
R-squared	0,0901		0,0614		0,1046
Overall F-Test	14,5900	***	6,3000	***	7,0500
N	3960		2400		1560

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10.

Table 14: OLS coefficients estimates of net tone residuals, Henry's 2008 wordlist

4.2.3. Forward-Looking

Table 15 presents the regression models that capture forward-looking discourse inconsistency. We regress the chairman's section level forward-looking discourse on the CEO's section level forward-looking discourse for our entire sample of firms as well as for the sub-samples of high-performing and low-performing firms, as described in equations (5.1 – 5.3).

OLS Estimation Results					
	Forward-looking Chair Entire Sample		Forward-looking Chair High-Performing Firms		Forward-looking Chair Low-Performing Firms
	5.1		5.2		5.3
Forward-looking CEO	0,2641	***			
	(0,0169)				
Forward-looking CEO			0,2755	***	
			(0,0225)		
Forward-looking CEO					0,2440
					(0,0256)
R-squared	0,0695		0,0767		0,0577
Overall F-Test	242,8000	***	149,3600	***	90,7000
N	3960		2400		1560

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10.

Table 15: Regression models that capture inconsistency in forward-looking discourse

Table 16 shows the descriptive statistics on the forward-looking discourse regressions' residuals which are used as proxy for within-report forward-looking discourse inconsistency. The median firm in our sample has a negative forward-looking residual. This finding suggests that there is inconsistency in forward-looking discourse, and we can therefore confirm H₃. We observe as well that the median low-performing firm reports a negative forward-looking discourse residual. This result also supports H₃ and we can conclude that overall, the CEO uses more forward-looking oriented words in his narrative than the chairman.

Our findings are consistent with prior results from Muslu et al. (2015) and Athanasakou & Hussainey (2014). The CEO uses greater forward-looking disclosure (vs. the independent chairman) to mitigate firm's poor information

environment and improve the ability of returns to reflect future earnings (Muslu et al., 2015). Additionally, the CEO increases the frequency of forward-looking disclosure (vs. the chairman) when firms report poor performance due to managerial incentives (Athanasakou & Hussainey, 2014). Considering our results and prior evidence, we believe the CEO makes use of forward-looking discourse to his advantage which is consistent with impression management.

Forward-looking Residuals Descriptive Statistics								
Variables	N	Mean	Std. Dev.	Min	P25	P50	P75	Max
Forward-looking Residuals Entire Sample	3960	0,0000-	0,0063	-0,0193	-0,0042	-0,0005	0,0039	0,0276
Panel A: High-Performing Firms; positive changes in ROA from the previous year								
Forward-looking Residuals High-Performing Firms	2400	0,0000-	0,0063	-0,0180	-0,0042	-0,0005	0,0038	0,0277
Panel B: Low-Performing Firms; negative changes in ROA from the previous year								
Forward-looking Residuals Low-Performing Firms	1560	0,0002	0,0064	-0,0193	-0,0039	-0,0002	0,0042	0,0252

Notes: 0,0000+ denotes a value greater than 0,0000 and smaller than 0,0001. 0,0000- denotes a value greater than -0,0001 and smaller than 0,0000.

Table 16: Descriptive statistics, forward-looking discourse residuals

We then regress the forward-looking discourse residuals on our control variables as presented in Table 17. Considering low-performing firms, market performance as proxied by Earnings is negatively associated with forward-looking discourse inconsistency. The CEO will have a more future oriented speech (vs. the independent chairman) for firms with bad performance. Firm's size is also a factor influencing discourse inconsistency in all our samples. Larger firms have greater forward-looking discourse inconsistency between chairman and CEO's narratives.

OLS Estimation Results					
	Forward-looking Residuals		Forward-looking Residuals		Forward-looking Residuals
	Entire Sample		High-Performing Firms		Low-Performing Firms
	9.1		9.2		9.3
ROA	-0,0006		-0,0019		0,0008
	(0,0010)		(0,0013)		(0,0016)
Change in ROA	0,0015		0,0007		-0,0007
	(0,0011)		(0,0019)		(0,0017)
Stock Returns	-0,0001		-0,0003		0,0003
	(0,0002)		(0,0002)		(0,0004)
Earnings	-0,0015	***	-0,0010		-0,0019
	(0,0005)		(0,0010)		(0,0006)
Size	0,0004	***	0,0004	***	0,0004
	(0,0001)		(0,0001)		(0,0001)
BTM	-0,0001		-0,0002		0,0000-
	(0,0003)		(0,0004)		(0,0004)
Firm Age	0,0001		0,0000-		0,0002
	(0,0002)		(0,0002)		(0,0003)
Nr. of Business Segments	0,0000+		0,0004		-0,0005
	(0,0002)		(0,0003)		(0,0004)
Nr. of Geographic Segments	0,0001		0,0001		0,0001
	(0,0002)		(0,0003)		(0,0003)
Stock Return Volatility	-0,0003		0,0004		-0,0008
	(0,0018)		(0,0024)		(0,0030)
ROA Volatility	0,0018		0,0048		-0,0025
	(0,0015)		(0,0019)		(0,0023)
ROA Dummy	0,0001				
	(0,0003)				
Industry fixed-effects	Yes		Yes		Yes
R-squared	0,0260		0,0288		0,0403
Overall F-Test	5,0000	***	3,5700	***	3,2800
N	3960		2400		1560

Notes: All specifications include a constant term. Heteroskedasticity-robust standard-errors in parenthesis. *** denote p-values <0.01, ** denote p-values<0.05, and * denote p-values<0.10. 0,0000+ denotes a value greater than 0,0000 and smaller than 0,0001. 0,0000- denotes a value greater than -0,0001 and smaller than 0,0000.

Table 17: OLS coefficients estimates of forward-looking residuals

5. Conclusion

In this study, we investigate the inconsistency of speech between the chairman of the board and the chief executive officer in a UK context. We analyze inconsistencies in readability, textual tone and the use of forward-looking discourse between chairman and CEO's section level narratives in annual reports. Moreover, we consider the effects of firm performance.

Overall, our results for tone and forward-looking discourse suggest there is inconsistency of speech between the chairman and the CEO. Furthermore, when considering firms with declining performance, the CEO uses a more optimistic tone and a more future oriented discourse than the independent chairman. Our evidence is consistent with the CEO using its narrative to engage in impression management. In the presence of bad performance, the CEO strategically discloses information in a way to serve its own private interests.

Regarding our analysis on inconsistency in readability, results differ according to the measure of readability being considered. We therefore question the fit of the readability measures used and the robustness of our results. On the one hand, wordcount might not be a suitable measure as we are comparing two different sections which by default have distinct lengths. On the other hand, despite the fact that the fog index appears to be the measure of choice in financial research, critics provide evidence that it is a poorly specified measure to evaluate financial documents. This limitation in our study can be considered a potential area for future research. Despite the criticism on existing readability measures, researchers have yet to come up with a recognized appropriate measure for the analysis of financial documents.

An additional limitation in our study is the fact that we consider firm's financial narrative disclosure as driven by performance and economic incentives. Indeed,

financial disclosure can be determined by firm's operational characteristics and management opportunism but also by management characteristics. Inconsistency of speech between the chairman and the CEO can therefore be a result of unintentional biases arising from managerial traits such as overconfidence, narcissism, or managerial characteristics such as age and gender. Lastly, an interesting direction for future research would be to examine the market reaction to the inconsistencies of speech found in our analysis.

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Appendix

Variable name		Definition
ROA	<i>ROA</i>	Return on assets: net income scaled by lagged total assets
Change in ROA	<i>Ch_ROA</i>	Net income change scaled by lagged total assets
Stock Returns	<i>Returns</i>	Stock returns in the fiscal year
Earnings	<i>Earn</i>	Net income scaled by lagged market value at the end of the fiscal year
Market Value		Market value of equity at the end of the fiscal year
Size	<i>Size</i>	Log (market value of equity at the end of the fiscal year)
Book to Market Ratio	<i>BTM</i>	Firm's book value scaled by its market value
Firm Age	<i>Age</i>	Log (1+age)
Nr. of Business Segments	<i>BusSeg</i>	Log (1+ number of business segments)
Nr. of Geographic Segments	<i>GeoSeg</i>	Log (1+ number of geographic segments)
Stock Return Volatility	<i>RetVol</i>	Standard deviation of the monthly stock returns in the last year (2017)
ROA Volatility	<i>ROAVol</i>	Standard deviation of the ROA in the last 3 years (2015-2017)
ROA Dummy	<i>D_ROA</i>	Indicator variable that takes the value one if a company reports an increase in ROA and zero otherwise
Fog Chair		Chairman Statement: fog index score
Fog CEO		CEO Review: fog index score
Fog Annual Report		Narratives component of the Annual Report: fog index score
Fog Residuals		Fog index inconsistencies
Wordcount Chair		Chairman Statement: total number of words
Wordcount CEO		CEO Review: total number of words
Wordcount Annual Report		Narratives component of the Annual Report: total number of words
Wordcount Residuals		Wordcount inconsistencies
Net Tone LM Chair		Chairman Statement, net tone: number of positive words minus the number of negative words, scaled by the sum of positive and negative words. Loughran and McDonald's 2011 wordlist
Net Tone LM CEO		CEO Review, net tone: number of positive words minus the number of negative words, scaled by the sum of positive and negative words. Loughran and McDonald's 2011 wordlist
Net Tone LM Annual Report		Narratives component of the Annual Report, net tone: number of positive words minus the number of negative words, scaled by the sum of positive and negative words. Loughran and McDonald's 2011 wordlist
Net Tone LM Residuals		Net Tone inconsistencies. Loughran and McDonald's 2011 wordlist
Net Tone Henry8 Chair		Chairman Statement, net tone: number of positive words minus the number of negative words, scaled by the sum of positive and negative words. Henry's 2008 wordlist
Net Tone Henry8 CEO		CEO review, net tone: number of positive words minus the number of negative words, scaled by the sum of positive and negative words. Henry's 2008 wordlist
Net Tone Henry8 Annual Report		Narratives component of the Annual Report, net tone: number of positive words minus the number of negative words, scaled by the sum of positive and negative words. Henry's 2008 wordlist
Net Tone Henry8 Residuals		Net Tone inconsistencies. Henry's 2008 wordlist
Forward-looking Chair		Chairman Statement: number of forward-looking words based on an updated version of the list proposed by Hussainey et al. (2003)
Forward-looking CEO		CEO Review: number of forward-looking words based on an updated version of the list proposed by Hussainey et al. (2003)
Forward-looking Annual Report		Narratives component of the Annual Report: number of forward-looking words based on an updated version of the list proposed by Hussainey et al. (2003)
Forward-looking Residuals		Forward-looking inconsistencies.

Table 18: Variables Definition