Do forward-looking narratives affect investors' valuation of UK FTSE all-shares firms?

Ahmed Hassanein [a,b]

Gulf University for Science and Technology (GUST), Kuwait & Mansoura University, Egypt

Hassanein.a@Gust.edu.kw

Alaa Zalata [b]

University of Southampton, UK & Mansoura University, Egypt

a.zalata@soton.ac.uk

Khaled Hussainey [b]

University of Portsmouth, UK

khaled.hussainey@port.ac.uk

Correspondence Details

[a]   Correspondence should be addressed to Dr. Ahmed Hassanein, Room N1 140, Gulf University for Science and Technology (GUST), West Mishref, POB 7202, Hawally, 32093, Kuwait. E-mail: Hassanein.a@Gust.edu.kw

1

Do forward-looking narratives affect investors' valuation of UK FTSE all-shares firms?

Abstract:

Narrative reporting is an important avenue for investors to know more about a company from the eyes of its board of directors. This study aims to examine the impact of forward-looking disclosures on the values of UK FTSE all-shares non-financial firms. It uses a sample of annual report narratives from 2005 to 2014 to determine that the values of UK FTSE all-shares firms are positively influenced by the disclosure of forward-looking information. Besides, after distinguishing between high and low-performing firms, the study finds that forward-looking disclosures have no effect on the values of high-performing firms, though they positively enhance investors' valuation of low-performing firms. Furthermore, the study concludes that when UK firms are divided based on the size of the audit firm (Big 4 vs. non-Big 4 auditors), forward-looking disclosures only positively affect the values of FTSE all-shares firms that are audited by one of the Big 4 auditing firms. Therefore, the results suggest that forward-looking information in UK narrative reporting statements is seen as credible for firms that are audited by a large auditor and/or are low-performing.

1 INTRODUCTION

Narrative reporting[1] in annual reports provides critical textual information alongside financial statements (Merkley 2014). The reporting aims to analyze and discuss firm performance through the eyes of its board of directors (ASB 2005 and 2006). Likewise, investors analyze narratives to bridge the gap between financial statements and the economic reality of firms' performances (Feldman et al. 2010). In the United Kingdom (UK), narrative reporting is reported under different headings, such as Operating and Financial Review (OFR), Business Review, and Chief Executive Review. The UK regulatory requirements of narrative reporting (i.e., IASB) recommend that narrative analysis and discussion should have a forward-looking orientation and that firms should provide this type of disclosure. This information would be expected to help investors understand firms' past and current financial performances and to predict future earnings (Hussainey et al. 2003). However, opponents of narrative reporting argue that it may not be as useful as intended. The soft talk (vs. hard facts) nature of narratives makes them difficult to be audited and, therefore, may include substantial boilerplate information, generic language, and irrelevant disclosures (Li 2010). The International Accounting Standard Board (IASB) has consistently worried about informational contents of narrative reporting and has advised firms to avoid providing boilerplate and irrelevant disclosures (IFRS 2010). The current study empirically investigates the usefulness of UK narrative reporting.

In particular, the objectives of the current study are threefold. First, the study examines the impact of the disclosure of forward-looking information on the values of UK FTSE all-shares firms. Second, it is argued that as earnings performance decreases the earnings signal becomes noisier and reported disclosure becomes less predictive of future value (Merkley 2014). In turn, managers increase their discussions and analyses on activities with a potentially positive effect on firms. However, they may use their discretion in preparing narrative disclosures to strategically obfuscate the financial results (Li 2010); particularly when firms are loss-making (Schleicher et al. 2007). Therefore, the current study differentiates between firms with earnings increase (high-performing) and earnings decrease (low-performing) to examine whether the association between forward-looking disclosure and firm value differ between high and low-performing firms. Third, forward-looking information is disclosed outside the audited financial

---

[1] Throughout the current study, the terms narrative reporting, narrative disclosure, narrative statements, and narratives are used interchangeably.

statements. Thus, in absence of a mechanism to verify forward-looking information, investors may ignore it (Li and Yang 2016). However, external auditors review the narrative disclosure statements and so this may encourage managers to provide informative disclosure (Brown and Tucker 2011). Therefore, the current study differentiates between firms audited by one of the big auditing firms (Big-N) and firms audited by a non-Big auditor (Non-Big-N) to examine whether the association between forward-looking disclosure and firm value differs between big and non-big auditors.

We consider UK forward-looking disclosures for a number of reasons. First, UK provides a unique context to analyze the disclosure of forward-looking information. This information is qualitative in nature and not immediately verifiable or auditable (Athanasakou and Hussainey 2014). Besides, significant variations exist between UK firms in terms of their forward-looking disclosure practices (Wang and Hussainey 2013). This raises a concern about whether this type of disclosure is informative to investors. Second, UK forward-looking disclosure, on the one hand, contains valuable and relevant information for investors in anticipating future earnings (Hussainey et al. 2003). On the other hand, it may not be useful for real-time decision-making because of the relative delay in publishing annual reports. Besides, Wang and Hussainey (2013) argue that research investigating investors' responses to UK narrative statements remains limited. Consequently, the usefulness of forward-looking disclosure in UK narratives remains an open empirical issue that requires more investigation, as undertaken by this paper.

This paper provides two distinct contributions to the literature on narrative reporting and firm value. First, it provides timely evidence for how the disclosure of forward-looking information influences the values of FTSE all-shares firms over a 10-year period and finds that values of UK firms are positively associated with the disclosure of forward-looking information. It, also, contributes to the research calling for the distinction between profit and loss-making firms when investigating disclosure (e.g., Merkley 2014). Unlike prior research on UK forward-looking disclosure (e.g., Hussainey et al. 2003: Wang and Hussainey 2013: Athanasakou and Hussainey 2014), the study distinguishes between high and low-performing firms and finds that forward-looking disclosures have no effect on the values of high-performing firms while positively affecting the values of low-performing firms. Furthermore, this study is the first in the UK to consider the role of the auditor in overseeing narrative disclosures. The study finds that forward-looking disclosures positively affect the values of UK firms only when they are audited by one of the Big 4 auditing firms. These results are helpful for investors and researchers to understand the usefulness of UK narrative reporting practices. Given IASB's

concerns about the usefulness of narratives, this study rationalizes the debate over the usefulness of forward-looking disclosure in the UK. It is considered an important source for information, particularly, for low performing firms. Thus, this may lead policymakers to encourage firms to disclose more forward-looking information to improve the information content of the annual reports and, consequently, enhances investors' valuation of firms.

Second, the study contributes to the knowledge on methodological developments in both the measurement of variables and the estimation method in empirical tests. Unlike prior research on firm value (e.g., Patel et al. 2002; Hassan et al. 2009; Zhang and Ding 2006; Plumlee et al. 2015; Elzahar et al. 2015), this study computes an industry median adjusted Tobin's Q ratio to measure the value of a firm. This measure reduces the potential bias arising from industry (Bebchuk et al. 2009), controls simultaneity, and helps to mitigate endogeneity problem (Brown and Caylor 2006). Furthermore, besides the fixed effect estimation, the empirical analyses are estimated using random effect panel regression to mitigate the problems caused by time effect (heteroscedasticity) and unobserved firm effect (auto-correlation). The random effect estimation method accounts for the residual dependency problems frequently neglected in market-based accounting research (Petersen 2009; Gow et al. 2010).

The remainder of this paper proceeds as follows: Section 2 reviews the literature and formulates the research hypotheses; Section 3 details the research design; Section 4 reports the results; Section 5 introduces a robustness check, and section 6 presents the conclusion.

2   LITERATURE AND HYPOTHESIS DEVELOPMENT

In this section, we review the three strands of literature that are relevant and consistent with the research objectives and, then, the research hypotheses are formulated. The first strand relates to the association between a firm forward-looking disclosure and its value. The second focuses on how a change in a firm performance could affect the association between forward-looking disclosure and a firm value. The third focuses on how audit firm size could affect the association between forward-looking disclosure and firm value.

2.1 Forward-looking disclosure and firm value

Informative disclosures enhance investors' perceptions of firms which are reflected in the value of the firm (Healy et al. 1999). Theoretically, an investor's decision to acquire a firm's financial securities depends on his/her expectations in terms of the firm's future cash flows and/or its

returns based on the available information (Miller 2010). Forward-looking disclosure may enable investors to build their expectations about a firm's future cash flows and/or its returns. Furthermore, information reduces liquidity costs, therefore increasing stock liquidity and reducing the rate of return required by investors to invest in a firm's shares. This, in turn, affects the value of a firm. Agency theory, also, suggests that disclosures decrease information asymmetry between management and investors (Jensen 1986). Empirically, Van Buskirk (2012) uses a panel of 386 US firms from a retail sector and finds that quantity of disclosure is associated with a decreased information asymmetry. This may reduce the uncertainty surrounding a firm's future performance, which in turn affects its share prices and, consequently, its value (Healy et al. 1999). In addition, voluntary disclosure (e.g., forward-looking information) may reduce the private benefits that controlling shareholders and management might get from controlling the firm (e.g., monitoring costs). This would increase the expected cash flow to shareholders and, consequently, their firms' values.

Prior research examines the effect of disclosure on a firm value through its effect on the firm's cost of capital. This stream of research argues that the value of the firm is a decreasing function of its cost of capital. In other words, the lower the firm cost of capital, the higher the firm value. This is because investors are willing to invest in a company with the lower cost of capital. This leads to increases in the expected cash flows from investors. Consequently, the flows of cash from investors will assertion the ability of the firm to increase its size and continue operating in large scale. A substantial body of research has examined this association between disclosure and the cost of capital, suggesting a negative relationship between disclosure and the cost of capital, but a positive association between disclosure and firm value (e.g., Lam and Du 2004; Zhang and Ding 2006; Plumlee et al. 2015; Dhaliwal et al. 2011; Barth et al. 2013; Mangena et al. 2016). However, Botosan and Plumblee (2002) find that an increase in the level of disclosure is associated with a higher cost of capital. Then, they examined whether the relationship between disclosure and cost of equity capital varies based on the timing of disclosure. Their results suggest that annual report disclosures reduce the cost of equity capital; however, disclosures of quarterly reports increase the cost of equity capital. They do not report any association between investor relations and the cost of equity capital. Moreover, limited research has examined the effect of disclosures on the cost of capital due to asymmetric estimation risks. It has been argued that market beta is an increasing function of asymmetric estimation risk (Hassan et al. 2009). Consistently, prior research suggests a negative relationship between disclosure and market beta (e.g., Lam and Du 2004). Despite

aforementioned research on disclosure and the cost of capital, the nature of this relationship is still an open question. Empirical literature provides cross-sectional evidence that firms with more extensive voluntary disclosures exhibit less information asymmetry and have a lower cost of capital. However, there are substantial concerns about whether this relationship can be interpreted in a causal way. Firms are likely to choose disclosures with the effect on their cost of capital in mind, creating an endogeneity problem for which it is difficult to find valid instruments. The current study controls for the endogeneity problem in its empirical analysis.

A limited number of studies have examined the impact of disclosure on firm value. This is because the disclosure-firm value relationship can be perceived as a logical conclusion rather than a hypothesis to be tested. Of these limited studies, Patel et al. (2002) use Standard and Poor's dataset on Transparency and Disclosure (T&D) scores to examine the relationship between T&D scores and firm value. Their results suggest that firms with higher T&D scores have higher value compared to firms with lower T&D scores. However, they do not control for variables that may influence firm value, causing a problem of omitted variable bias. Furthermore, Hassan et al. (2009) find that the relationship between disclosure and firm value depends on whether the disclosure was mandatory or voluntary. They find negative association between firm value and mandatory disclosure of Egyptian firms. However, they report a non-significant relationship between firm value and voluntary disclosure. Elzahar et al. (2015) examine the effect of disclosure of Key Performance Indicators (KPIs) on the cost of capital and firm value. They find a significant negative relationship between the disclosure of KPIs and the cost of capital. However, they report a weak positive relationship between the disclosure of KPIs and a value of a firm. In a recent paper, Guo et al. (2016) find a positive relationship between disclosure and firm value in China. To conclude, the empirical evidence in terms of the impact of voluntary disclosure on a firm value is still inconclusive. Some studies report that disclosure of voluntary information adds to the value of a firm (e.g., Elzahar et al. 2015) while others (e.g., Hassan et al. 2009) do not find evidence to support this assumption. Based on the review of the relevant theories and literature, it is suspected that the disclosure of forward-looking information has an effect the values of UK firms. Therefore, the current study hypothesizes that:

H1: Forward-looking disclosures affect the values of UK firms

2.2 High and low-performing firms

Earnings is a visible performance measure and receives considerable attention from investors due to its impact on firm growth process (Rasiah et al. 2014). The reporting earnings performance influence the investors' demand for different types of disclosures and firms are willing to disclose different types of information (Merkley 2014). Consequently, changes in earnings performance may affect the frequency of a firm disclosure. However, this association between a firm earnings performance and its disclosure is unclear. Number of papers report a positive association between earnings performance and frequency of disclosure (e.g., Miller 2002). While others report a negative association between the two variables (e.g., Merkley 2014). Given that firm disclosure is critical to an investor decision-making process and have immediate pricing effect on stocks and investors assess the value of the company based on its disclosed information (Miller 2010). Together these issues create the possibility that a firm value may be affected by the frequency disclosure behavior derived by changes in firm earnings performance. Therefore, in this section we aim to examine whether the association between forward-looking disclosure and firm value differ based on changes in a firm earnings performance.

The association between changes in earnings performance and narrative disclosure could be hypothesized either positively or negatively. A positive association may be explained on the basis that managers in firms with earnings increase are likely to provide more discussion and analysis about their performance in order to signal their favorable results to their investors. Consistently, Miller (2002) finds that firms experiencing an increase in their earnings tend to increase their disclosure, and as earnings performance returns to previous levels, their disclosure level decreases. On the other hand, a negative association may be hypothesized on the basis that information asymmetry increases as earnings performance decreases (Brown et al. 2009). Hayn (1995) argues that as earnings performance decreases the earnings signal becomes noisier and reported disclosure becomes less predictive of future performance. Therefore, investors demand more information to better assess the uncertainty of future cash flows and, in turn, managers provide more discussions and analyses. In addition, signalling theory suggests that firms with poor performance (e.g., losses) may provide more informative disclosure to explain losses to their investors and to signal their ability to eliminate such losses in the future. Recently, Merkley (2014) predicts that firms react to bad earnings performance by increasing discussion on activities with a potentially positive effect on future performance.

Empirically, he confirms his prediction and finds that firms increase their research and development (R&D) disclosure when earnings decrease. Thus, this suggests that change in earrings performance encourage managers to provide more discussions and analysis in their annual reports.

Empirically, Smith and Taffler (2000) examine the ability of annual report narratives to predict a firm's future financial status. They explore the association between discretionary narrative disclosures in the chairman's statement and subsequent corporate failure. Employing linear discriminant analysis their study is able to correctly classify 65 out of 66 failed and non-failed firms with seven-variable word-based model. Thus, they provide evidence that unaudited managerial disclosures in the chairman's statement contain important information which is highly associated with a firm's future financial status. Furthermore, a number of prior studies focus on the effect of disclosure on the association between current earnings performance and future earnings. For instance, Gelb and Zarowin (2002) use AIMR-FAF ratings to measure the quality of a firm's information environment. They find evidence that higher levels of corporate disclosure are associated with a stronger relationship between current share price movements and future earnings changes. Similar findings are documented by in Hussainey et al. (2003) with a disclosure metric based on annual report narratives. However, none of the above research attempts at discriminating between firms with earnings increase (high-performing) and firms with earnings decrease (low-performing). Therefore, in the current study seeks to examine whether the association between forward-looking disclosure and firm value differs between high-performing and low-performing firms. We argue that changes in earnings performance affect the frequency of forward-looking disclosure which in turn influences the value of a firm. Therefore, based on the above discussion, we formulate the following hypothesis:

> H2: Forward-looking disclosures of high-performing and low-performing firms
> affect the values of UK firms

2.3 Audit firm size

Forward-looking information is disclosed outside the audited financial statements and therefore remains unverified. The absence of a mechanism to verify forward-looking information can lead investors to ignore it (Li and Yang 2016). Agency theory suggests that external auditor may act as an independent third party that may help to resolve the agency conflicts between

managers and investors. This may be because external auditors assure investors of the reliability of the accounting information and, therefore, reduce agency conflicts. External auditors assure investors on the credibility of accounting information (Fan and Wong 2005) and high-quality auditors encourage managers to disclose highly accurate information. Ball et al. (2012) find that management forecasts issued by firms committing to high-quality auditing firms are more frequent, specific, timely, and accurate.

Investors consider big audit firms as providing ultimate auditing quality (Leung and Horwitz 2010; Lawrence et al. 2011). This is because the big audit firms are more likely to have highly experienced, trained, and qualified auditors and, consequently, they are better in auditing performance compared to smaller audit firms (Barako et al. 2006). Firms with one of big audit firms are more likely to have higher relevant information than other firms. Clatworthy et al. (2012) investigate whether auditor quality moderates the role of accruals and cash flows, as components of earnings, in driving stock returns. Their empirical results indicate that both accruals and cash flows are important drivers of stock returns and suggest that the significance of both accruals and cash flows varies conditional on auditor quality. Brown and Tucker (2011) focus on narrative disclosure in management discussion and analysis (MD&A) section of the annual report and hypothesize that disclosure is potentially uninformative if it does not change from the previous year, especially after a significant change in firm performance. They measure the degree to which the narratives in the MD&A differ from the previous year. They find that firms audited by big auditors are more likely to change their narrative disclosure from period to period and the stock price responses significantly to change in the MD&A. This suggests that big auditors encourage managers to provide an informative narrative disclosure to investors. This knowledge leads us to formulate the following hypothesis:

H3: Forward-looking disclosures of firms with high audit quality affect the values of UK firms as compared to firms with low audit quality

3   RESEARCH DESIGN

3.1 Sample selection and data collection

Our investigation focuses on FTSE all-shares non-financial firms listed on the London Stock Exchange. The sample period covers annual reports for fiscal years 2005-2014[2]. The study begins with 2005 because the reporting standard RS1 on OFR narrative reporting was issued in 2005 (28 November 2005). The study ends in 2014, the year of the most recently available annual reports at the time of analysis. Consistent with prior research (e.g., Athanasakou and Hussainey 2014), financial firms are excluded from the analysis due to their special nature. In addition, we exclude observations: 1) with missing annual reports, as this study relies on the texts of annual reports; 2) whose annual reports cannot be converted to text file to be readable by QSR N6 software; 3) with missing financial data; and 4) that changed the month of the year-end during the period. The screening leaves us with 2,932 firm-year observations. Panel A of Table (1) shows the final sample sorted by years. However, Panel B shows the distribution of the 2932 firm-year observations over nine main industries as follows: oil and gas 147 (5%), basic material 234 (8%), industrial 1026 (35%), consumer goods 323 (11%), health care 176 (6%), consumer services 645 (22%), telecommunication 29 (1%), utilities 59 (2%), and technology 293 (10 %).

Insert Table (1) here

The study focuses on the narrative statements included in annual reports, as they are more likely to contain forward-looking disclosures (Athanasakou and Hussainey 2014). When reading the annual report, we find that narrative statements are included under different headings. Firms report narrative statements under the title of "OFR" (381 firms); or report in the two separate sections "Operating Review" and "Financial Review" (469 firms); or produce the same OFR contents under the title "Business Review" (1143 firms); or under the title "Chief Executive Review" (792 firms). These instances total 2,785 firms, representing 95% of the sample. The

---

[2] We use annual reports annual reports since external investors still perceive them to be an influential and credible source of information (e.g., Beattie et al. 2004). In addition, we utilize annual reports rather than interim reports to avoid seasonality and updates of originally reported interim data.

remaining 5% produce either only an "Operating Review" (88 firms) or a "Financial Review" (59 firms).

Annual reports are collected from companies' official websites, the Thomson One Banker database and the Northcote website (www.northcote.co.uk). All financial data comes from DataStream. Auditor type data is manually collected from the companies' annual reports.

3.2 Measurements of variables

3.2.1 Forward-Looking Disclosure. The automated content analysis technique (e.g., Li 2010) using QSR N6 software is used to capture the level of forward-looking disclosure. Based on prior research (Hussainey et al. 2003; Muslu et al. 2015) and by reading and examining 30 randomly selected narrative sections from annual reports, we develop a list of 33 forward-looking keywords such as "looking ahead" and "expect". Appendix (1) provides the list of keywords. In addition, conjugations are used with verbs that imply the future to reduce the likelihood of capturing noun forms of some verbs (such as *"the company plans to …."*). Furthermore, the numerical reference to future years is added to the list of keywords (e.g., *2013/2014 is used when text-searching annual report narratives of 2012*). The forward-looking disclosure score (FLD score) is generated by counting the frequencies of sentences containing at least one of the 33 forward-looking keywords divided by the total number of sentences in the narrative section. As recommended in seminal research (e.g., Bowman 1984), sentences rather than words are used as the coding unit in the content analysis. This is because the word itself has no meaning if it is used in isolation of the meaning of the whole sentence (Beattie et al. 2004).

To assess the reliability of the FLD score, a randomly selected sample from narrative statements is manually coded, and FLD score is calculated based on the manual coding. Following Hussianey et al. (2003), the Pearson correlation is used to compare the FLD score with manual coding and the FLD score with automated coding. A Pearson correlation coefficient of .926 shows that the FLD score based on manual coding is statistically correlated with the FLD score from automated coding at a .01 level of significance. This suggests that the FLD score calculated using computer software is reliable.

3.2.2 Firm value. The value of the firm is measured at three months after the publication date of the annual report. This procedure ensures that financial reporting would be publicly available to users and that stock prices would reflect the FLD (Hassanein and Hussaieny 2015).

Following prior research (e.g., Ntim et al. 2012; Chin et al. 2006), the value of the firm is measured using Tobin's Q ratio. However, we develop an industry median adjusted Tobin's Q ratio and refers to this variable as IMadj.TQ$_{+3}$. This Tobin's Q controls for potential bias arising from industry (Bebchuk et al. 2009), rules out the potential for simultaneity, and helps to mitigate endogeneity (Brown and Caylor 2006)[3]. The IMadj.TQ$_{+3}$ is computed as a firm's Tobin's Q minus the median Tobin's Q in the firm's industry in the observation year. The Tobin's Q is calculated as the summation of a firm total debt plus the market value of equity divided by its book value of total assets. The market value of equity is calculated as the number of outstanding shares at year-end multiplied by the mean of the stock prices at three months after the annual report date.

3.3 Empirical Model

In the empirical models, we control for some economic environment factors to account for alternative determinants of firm value in prior research (e.g., Elzahar et al. 2015). These include firm size, dividends, current earnings, liquidity, earnings volatility, managerial ownership, growth, and capital expenditure. Besides, a firm value may be affected by other types of voluntary narrative disclosures such as risk and environmental disclosure. Therefore, following prior research (e.g., Li 2010), we use the length of narrative reporting document to control for other types of disclosures that may affect firm value. Appendix (2) elaborates the definitions and measurements of all variables. To test our hypotheses, the study employed the fixed (Eq. 1) and random (Eq. 2) effects models to regress forward-looking disclosure and control variables on firm value. These estimation models mitigate the problems of heteroscedasticity and auto-correlation (Gow et al. 2010).

Equation (1) shows the fixed effect model that accounts for changes in firm value as a result of changes in forward-looking disclosure over the 10-years period under analysis. In addition, it accounts for any bias in firm values caused by firm and/or industry-specific effects. This model helps in correcting the standard error for any heteroskedastic bias (time effect from repressor

---

[3] The values of Tobin's Q are widely varying across different industries due to differences in the operating nature of industries across the sample firms (Bebchuk et al. 2009). The industry median adjusted Tobin's Q controls for variations among different industries which reduces potential bias resulting from differences in industries. Besides, this industry median Tobin's Q reduces the variation between firms within the same industry which controls for unobserved firm-specific heterogeneity issues and cancels any firm fixed effects. This provides a consistent estimate of the residual in the endogenous variable (e.g., firm value). Consequently, the associations hold thereafter cannot be attributable to any endogeneity issues.

variables). β_1 and β_2 are the slopes for forward-looking disclosure score and control variables, respectively. α_i is the intercept for firm i, while μ_{it} is the error term for firm i in year t.

$$
\begin{bmatrix} Frim\ value \end{bmatrix}_{it+3} = \beta_1 \begin{bmatrix} Forward-Looking \\ Disclosure \end{bmatrix}_{it}
$$

$$
+ \beta_2 \begin{bmatrix} Control\ Variables: \\ Firm\ size, Firm\ Dividends, Firm\ Leverage, \\ Firm\ Liquidity, Earnings\ Volatility, \\ Managerial\ Ownership, Firm\ Growth, Capital\ Expenditure, \\ Length\ of\ narrative\ document \end{bmatrix}_{it} + \alpha_i + \mu_{it}
\qquad \textbf{Eq. (1)}
$$

Equation (2) shows the random effects model that accounts for the bias in firm value caused by random variations across firms in the UK and across industries over the 10-year period under analysis. All variables are the same as in equation (1). Additionally, the error term is broadened from μ_{it}, which captures the between-firm error, to include ε_{it}, which captures the within-firm error. This yields unbiased standard errors which would improve the accuracy of the analyses (Petersen, 2009).

$$
\begin{bmatrix} Frim\ value \end{bmatrix}_{it+3} = \beta_1 \begin{bmatrix} Forward-Looking \\ Disclosure \end{bmatrix}_{it}
$$

$$
+ \beta_2 \begin{bmatrix} Control\ Variables: \\ Firm\ size, Firm\ Dividends, Firm\ Leverage, \\ Firm\ Liquidity, Earnings\ Volatility, \\ Managerial\ Ownership, Firm\ Growth, Capital\ Expenditure, \\ Length\ of\ narrative\ document \end{bmatrix}_{it} + \alpha_i + \mu_{it} + \varepsilon_{it}
\qquad \textbf{Eq. (2)}
$$

To test H1, both models (1) & (2) are run separately for the whole sample firms. To test H2, the sample is divided into two subsamples: high-performing and low-performing firms, based on the direction of change in the ROA ratio. Firms that have positive changes in ROA from the previous year (ΔROA>0) are regarded as high-performing firms, while firms with negative changes in ROA (ΔROA<0) are regarded as low-performing firms. Models (1) & (2) are run

separately for both high and low-performing firms. It should be noted that when calculating change in the ROA ratio from the previous year, the current study loses one year of observations for each firm. This suggests that there are no observations for the year 2005. To test H3, the sample is divided into two sub-samples based on the size of the audit firm: firms audited by one of the Big 4 auditing firms (Big-N) and firms audited by a non-Big 4 auditor (Non-Big-N). Models (1) & (2) are run separately for both Big-N and Non-Big-N samples. To mitigate the effect of outliers, all continuous variables are winsorized at the 1st and 99th percentile.

4 RESULTS

4.1 Descriptive statistics and correlation analysis

Panel A of Table (2) presents the descriptive statistics of the continuous variables. It shows that the UK firms have a maximum value of IMadj.TQ$_{+3}$ (firm value) of 377.636 and the minimum value of -2.423. This range indicates that a variation exists between UK firms in terms of their values. The sample firms have an average value of 0.663. In terms of the FLD score, it ranges from 0.3% of total sentences in the narrative section to 85% of total narrative sentences. These values indicate that variations exist among UK firms in terms of their decisions to disclose forward-looking information. The sample firms have an average FLD score of 15% of the total narrative statements. Panel B presents the frequencies for dummy variables. It shows that 80.01% of the UK firm is audited by one of the big audit firms (Big-N) whilst 19.9% are audited by non-big audit firms (Non-Big-N).

Panel C of Table (2) reports the mean differences in firm value (IMadj.TQ$_{+3}$) and forward-looking disclosure (FLD score) based on changes in firm performance and the size of the audit firm. The *t*-test results suggest that there are significant differences in forward-looking disclosure and values of UK firms based on firm performance and the size of the audit firm. The differences based on firm performance suggest that high-performing firms are likely to exhibit higher (lower) values (forward-looking information) than low-performing firms. Specifically, high-performing firms are likely to provide, on average, 19 percent less forward-looking disclosure than low-performing firms. In addition, the values of high-performing firms are 34 percent higher than the values of low-performing firms. However, based on the size of the audit firm, the t-test results suggest that firms with Big-N auditor firms are likely, on average, to exhibit less (more) forward-looking disclosure (firm value) than firms with non-

Big-N auditor. In particular, the results confirm that firm audited by one of the Big-N auditors tend to provide, on average, 32 percent less forward-looking information than firm audited by non-Big-N auditor. In addition, the values of these firms are, on average, 39 percent more than those with non-Big-N auditor.

Insert Table (2) here

The Pearson correlation matrix in Table (3) provides evidence that firm value (IMadj.TQ$_{+3}$) is statistically correlated positively with FLD score (p<0.01). This suggests that firm disclosing more forward-looking information are likely to exhibit higher values. Surprising, the correlation coefficient (-0.126) between IMadj.TQ$_{+3}$ and firm ROA indicates a negative correlation between firm performance and firm value. Furthermore, the correlation coefficient between IMadj.TQ$_{+3}$ and auditor size suggest a positive correlation between auditor size and firm value at 10 percent significance. The correlation coefficients, also, indicate that the disclosure of forward-looking information is negatively associated with both earnings performance (p<0.01) and size of the auditing firm (p<0.01). In addition, the Pearson coefficient may be used to diagnose multi-collinearity among independent variables. Among all variables, Pearson correlation coefficients are relatively low, *less than 0.80*, suggesting that there is no concern about the multi-collinearity problem (Tabachnick and Fidell 2007; Gujarati and Porter 2009).

Insert Table (3) here

4.2 Multivariate results

Testing H1: Forward-looking disclosure impact on firm value

Table (4) reports the multivariate results from fixed effect regression (Model 1) and random effect regression (Model 2). Both models (1) & (2) are statistically significant at a 1% level of significance (P<.01). The adjusted R-squared values are 86.78% and 86.44% for models (1) & (2), respectively. These values imply good overall model fit, indicating that both models explain some variations in the values of the UK FTSE all-shares non-financial firms. The *t*-statistics and *z*-statistics are presented in parentheses for fixed and random effects estimates,

respectively. The current study finds that the coefficient for firm value (IMadj.TQ$_{+3}$) on forward-looking disclosure scores (FLD score) is 7.907 in the fixed effect model and is statistically significant at a 1% level of significance (t = 8.42). In addition, it is 1.792 in the random effect model and is also significant at 1% level (z = 2.78). This result indicates a positive association exists between firm value and disclosure of forward-looking information. In other words, the values of UK FTSE all-shares firms are more likely to increase if these firms disclose more forward-looking information in the narrative sections of their annual reports. Therefore, H1 is accepted. However, the result is more positive and significant under the fixed effect model (t = 8.42) than under the random effect panel regression model (z = 2.78). This may be because panel regression model captures some of the within-firm effects that are not explained under the fixed effect model.

This result is consistent with the theoretical expectations of the current study that investor's decision to buy or hold a firm's financial securities depends on his or her expectations regarding its future cash flows and/or its returns. These expectations are based on the use of all available information. Forward-looking disclosures may help investors determine their expectations about a firm's future cash flows and/or its returns, which affects the value of the firm. Furthermore, information reduces liquidity costs, increasing stock liquidity and therefore reducing the rate of return required by investors to invest in a firm's shares. This too affects the value of a firm. In addition, it is consistent with the expectation of the agency theory that disclosure of forward-looking information decreases the information asymmetry between management and investors. This, in turn, reduces uncertainty surrounding firm's future performance, which affects its share price and, consequently, its value. In addition, forward-looking information may reduce the private benefits that controlling shareholders and management might get from controlling the firm; this increases the expected cash flow to shareholders and, consequently, the firm's value. The results are, also, consistent with prior research (e.g., Patel et al. 2002; Elzahar et al. 2015) that argues that voluntary disclosure adds directly to the value of a firm. In addition, the results go in line with prior studies which suggest positive association between voluntary disclosure and firm value after documenting negative association between voluntary disclosure and the cost of capital (e.g., Zhang and Ding 2006; Dhaliwal et al. 2011; Barth et al. 2013; Plumlee et al. 2015; Mangena et al. 2016).

In terms of the control variables, the findings in both models, consistently with prior research, suggests that larger UK firms are more likely to have higher values in the future than smaller firms (e.g., Liu et al. 2012). In addition, UK firms with good dividends policies (higher

dividends yield) are likely to have lower values in the future. This is consistent with Officer (2011)'s expectation that dividends may limit management's ability to make future investments, which lowers firm value. Furthermore, the coefficients on current earnings (ROA) suggests a negative association between earnings performance and firm value. However, this is not consistent with Hassan et al. (2009), who find a positive relationship between earnings levels and firm value. Moreover, the results indicate that UK firms with higher leverage and higher liquidity status are likely to have higher values in the future. Additionally, the coefficient on earnings volatility (Ear. Vol) is statistically significant at a 5% level under the fixed effect (Model 1) and is significant at a 10% level under the random effect (Model 2) suggesting consistent results with prior research that firms with higher volatility in earnings are more likely to have lower values (e.g., Rountree et al. 2008). The multivariate results, also, report that firms with higher growth are likely to have higher values in the future than firms with smaller growth. Some prior studies support this result, reporting a positive and significant relationship between firm growth and firm performance (e.g., Henry 2008). Furthermore, the coefficients on capital expenditure (CAPEX) are statistically negative at a 1% level, indicating that UK firms with increasing capital expenditures are likely to have lower values in the future which is consistent with Mangena et al. (2012). Also, the coefficients on length of narrative documents (LNGTH) indicate negative association between length of narrative documents (as proxy of other types of voluntary narrative disclosure) and future firm value. On the other hand, the coefficients on managerial ownership (%MO) are not statistically significant at any significance level, suggesting that the future values of UK firms are not likely to be affected by the percentage of their managerial ownership.

Insert Table (4) here

Testing H2: High-performing vs. low-performing firms

In this section, we examine whether the disclosure of forward-looking information affects the value of firms with earnings increases or decreases differently. To this end, the sample is divided into two subsamples: high-performing and low-performing firms, based on the direction of change in the ROA ratio. Firms that have positive change in ROA from the previous year ($\Delta ROA>0$) are regarded as high-performing firms, while firms with negative change in ROA ($\Delta ROA<0$) are regarded as low-performing firms. When calculating change in

ROA ratio from the previous year, the current study loses one year of observations for each firm. This suggests that there are no observations for the year 2005.

Table (5) reports the estimation using fixed effect (Model 1) and random effects (Model 2) for high-performing and low-performing firms, separately. For high-performing firms (Δ ROA>0), the coefficients on FLD score are not statistically significant at any significance level under either model. This result suggests that the future values of high-performing UK firms are not likely to be affected by the disclosure of forward-looking information. However, for low-performing firms (Δ ROA<0), the coefficients on FLD score are statistically positive at a 1% level of significance in both models. This result indicates a positive association between FLD and the value of low-performing firms, suggesting that their future value is more likely to increase following the disclosure of forward-looking information. Therefore, H2 is partially accepted that only forward-looking disclosures of low-performing firms positively affect the values of UK FTSE all shares firms.

These results may be explained from two perspectives. First, managers of high-performing firms feel that their investors are satisfied with their good performance and consequently do not require more information (Wallace and Naser 1995). Thus, any additional forward-looking disclosures may not influence the investors of high-performing firms. Second, managers of low-performing firms react to bad earnings performance by increasing their discussions about their activities with a potentially positive effect on future performance (Merkley 2014). This suggests that low-performing firms are more likely to provide informative narrative disclosures that enhance their market valuations. This is consistent with Merkley (2014) who finds that firms increase their R&D disclosure when earnings decrease. Besides, prior empirical research in the UK has also found that forward-looking information is more likely to be used by unprofitable firms than profitable firms (Wang and Hussainey 2013). In addition, Schleicher et al. (2007) find that loss-making firms provide more relevant information to their investors than profit-making firms. In sum, our results indicate that forward-looking information has no effect on the value of high-performing firms but does enhance investors' valuation of low-performing firms.

Insert Table (5) here

Testing H3: Big-N vs. non-Big-N auditors

This section examines whether the association between FLD and value of FTSE all-shares firms may differ based on the size of the audit firm. To this end, the sample is divided into two sub-samples based on the size of the auditing firm: firms audited by one of the Big 4 auditing firms (Big-N) and firms audited by a non-Big 4 auditor (Non Big-N). Models (1) & (2) are run for the Big-N and Non Big-N Samples, separately.

Table (6) reports the estimation using a fixed effect regression (Model 1) and random effects regression (Model 2) for both Big-N and Non-Big-N samples. While the coefficients on FLD score for Big-N auditors are statistically significant at a 1% level under models (1) & (2), these coefficients are non-statistically significant under any significance level for the Non-Big-N auditors' sample. These results suggest a positive association between FLD and the future value of UK firms audited by one of the Big 4 auditing firms. However, there is no association between the disclosure of forward-looking information and future values of firms audited by other audit firms. Therefore, these results suggest that disclosure of forward-looking information enhances future values of firms only when they are audited by one of the Big 4 auditing firms. Therefore, H3 is accepted. The result is consistent with the expectation that big audit firms are more likely to assure investors on the credibility of accounting information (Fan and Wong 2005) and high-quality auditors encourage managers to disclose highly accurate information (Lawrence et al. 2011). Similarly, Hussainey (2009) finds that investors perceived firms audited by big auditing firms as providing more value-relevant information than others. In addition, Brown and Tucker (2011) find that large auditors encourage managers of US firms to provide informative disclosure to investors in their MD&A.

Insert Table (6) here

5 ROBUSTNESS TESTS

We compare the random effect regression results with the fixed effect models (frequently used in prior research). The results of both models lead to identical conclusions in terms of the impact of forward-looking disclosures on the future values of UK FTSE all-shares firms. Furthermore, in the regression models, we exclude the year dummies, which implicitly control for periods of financial crises. Then, the current study controls for periods of financial crises

by adding a dummy variable in the regression models that is equal to 1 for the firm observations during the years 2007 and 2008 and 0 otherwise. The results, not tabulated, are largely unchanged.

The results are further analyzed to examine the extent to which our variables are endogenous. Endogeneity is a statistical concern in the disclosure literature (Wang and Hussainey 2013). Omitted variable bias and simultaneity are the most frequent causes of an endogeneity problem (Chenhall and Moers 2007). This study addresses these two issues by conducting an instrumental Two-Stage Least Square (2SLS) regression. The 2SLS is a widely used technique to detect endogeneity (Henry 2008; Ntim et al. 2012); it helps to eliminate and assess whether there are serious variations between the regressor variables and either the error term (omitted variables) or value of UK firms (simultaneity problem). To this end, we first introduce the lagged values of firm forward-looking disclosure, firm size, managerial ownership, growth, capital expenditure and length of narrative documents in the regression analysis as instrumental variables, and the other variables are introduced as regressor variables. The analysis is run for all sample firms, for high and low-performing firms and for the Big-N and Non Big-N samples, separately. This helps to observe any variation in firm values and to minimize the possible downsides of using the instrumental variables (Larcker and Rusticus 2010).

Because of the effects associated with incorrect identification of instrumental variables, they are further validated to detect whether the data set exhibits endogeneity. The validity of the instrument is checked using Sargan and Basmann statistics. The presence of simultaneity is checked using Durbin and Wu–Haumsan statistics. Sargan and Basmann statistics are used to examine over-identifying restrictions that may arise from using instrumental variables. The null hypothesis of these tests is that the mean value of the instrument and residuals are equal to zero. These two tests are based on the Chi-square statistic. In addition, Durbin and Wu–Haumsan tests are used to examine the extent to which dependent and endogenous variables are exogenous. The null hypothesis of these tests is that the covariance of the endogenous variables and the residuals is equal to zero. The Durbin statistic is based on Chi-square statistic, and the Wu–Haumsan statistic is based on F-statistic.

Table (7) reports the results of the endogeneity tests. Column (1) presents the results of endogeneity test for the entire sample of firms. Column (2) reports the test for high-performing and low-performing firm samples and column (3) reports the endogeneity test results for Big-N and Non-Big-N samples. Sargan and Basmann statistics indicate that the instrumental

variables employed in the endogeneity tests are valid and are considered appropriate for the regression models. Durbin and Wu-Haumsan statistics suggest that the exogeneity of regressor variables are acceptable. These results indicate that there is no concern arising from endogeneity.

Insert Table (7) here

6   CONCLUSION

This study examines how the disclosure of forward-looking information influences the values of UK FTSE all-shares non-financial firms over a ten-year period. In addition to the fixed effect model, the study adopts a random regression analysis model to consider the random effects within and between firms on the dependent variable (firm value) to mitigate the problems of heteroscedasticity and auto-correlation. The automated content analysis technique is used to measure the level of forward-looking disclosure. The values of FTSE all-shares firms are measured using an industry median adjusted Tobin's Q ratio. Our findings support the significant role of the disclosure of forward-looking information in improving the values of FTSE all-shares firms. Furthermore, when distinguishing between high and low-performing firms, the study finds that forward-looking disclosures have no effect on the values of high-performing firms but positively affects the values of low-performing firms. Moreover, after separating firms audited by Big 4 auditing firms and firms audited by other auditing firms, the study finds that forward-looking disclosures positively affect the values of those UK firms audited by one of the Big 4 auditing firms.

The results have implications for regulators and investors in the UK. They support the UK's regulatory trend regarding the disclosure of forward-looking narratives that help to assess a firm's future performance. The findings rationalize the debate over the impact of forward-looking disclosure on the value of UK firms, which may lead policymakers to encourage firms to disclose more forward-looking information to improve the information content of the annual reports and, consequently, enhances investors' valuation of firms. In addition, Investors may also find these results useful, as they provide empirical evidence that the association between FLD and the value of FTSE all-shares firms may differ based on the type of auditor and direction of earnings. Investors might, therefore, be well-served to rely on such attributes (e.g., firms audited by big auditing firms or/and low-performing firms) to form their own

expectations about the value of the firm. Overall, our findings support the view that disclosing forward-looking information in the narrative sections of annual reports is seen as credible in the UK.

Despite the robustness tests, the study has some limitations that can be considered potential areas for future research. First, this study focuses only on narrative reporting statements in the UK. Other countries, however, could have different approaches for narrative reporting. Investigating narrative reporting (particularly FLD) in other countries, such as Germany or Gulf countries, could be useful in understanding the usefulness of this type of disclosure. Furthermore, extending the current research design to include other countries may be an area of interest for future research and could help in observing the impact of country characteristics (e.g., inflation; culture; legal system; political factors) on the usefulness of narrative reporting. Second, the current study focuses on the quantity of forward-looking disclosure, but instead looking at the quality of forward-looking disclosures could allow researchers to observe whether there are differences between the results driven by the quantity or quality of information when measuring disclosures generally (e.g., Beattie et al., 2004) and forward-looking disclosures in particular (e.g., Hassanein and Hussainey 2015).

REFERENCES

ASB (2005) The Operating and Financial Review. Reporting Standard (RS1), London: ASB Publications.

ASB (2006) The Operating and Financial Review. Reporting Statement, London: ASB Publications.

Athanasakou V, Hussainey K (2014) The perceived credibility of forward-looking performance disclosures. Accounting and Business Research 44(3): 227–259.

Ball R, Jayaraman S, Shivakumar L (2012) Audited financial reporting and voluntary disclosure as complements: A test of the confirmation hypothesis. Journal of Accounting and Economics 53(1-2): 136–166.

Barako DG, Hancock P, Izan HY (2006) Factors influencing voluntary corporate disclosure by Kenyan companies. Corporate Governance 14(2): 418–431.

Barth M, Konchitchki Y, Landsman W (2013) Cost of capital and earnings transparency. Journal of Accounting and Economics 55: 206-224.

Beattie V, Mcinnes B, Fearnley S (2004) A methodology for analysing and evaluating narratives in annual reports: A comprehensive descriptive profile and metrics for disclosure quality attributes. Accounting Forum 28: 205–236.

Bebchuk LA, Cohen A, Ferrell A (2009) What matters in corporate governance? The Review of Financial Studies 22(2): 783–727.

Botosan CA, Plumlee MA (2002) A re-examination of disclosure level and the expected cost of equity capital. Journal of Accounting Research 40(1): 21– 40.

Bowman EH (1984) Content analysis of annual reports for corporate strategy and risk. Interfaces 14(1): 61–71.

Brown LD, Caylor ML (2006) Corporate governance and firm valuation. Journal of Accounting and Public Policy 25(4): 409–434.

Brown S, Hillegeist S, Lo K (2009) The effect of earnings surprises on information asymmetry. Journal of Accounting and Economics 47: 208–22

Brown S, Tucker J (2011) Large-sample evidence on firms' year-over-year MD&A modifications. Journal of Accounting Research 49(2): 309–345.

Chenhall RH, Moers F (2007) The issue of endogeneity within theory-based, quantitative management accounting research. European Accounting Review 16(1): 173–195.

Chin C, Lee P, Chi H, Anandarajan A (2006) Patent Citation, R&D Spillover, and Tobin's Q: Evidence from Taiwan Semiconductor Industry. Review of Quantitative Finance and Accounting 26(1): 67–84

Clatworthy M, Pong C, Wong W (2012) Auditor quality effects on the relationship between accruals, cash flows and equity returns: A variance decomposition analysis. Accounting and Business research, pp 419–440.

Dhaliwal DS, Li OZ, Tsang A, Yang YG (2011) Voluntary nonfinancial disclosure and the cost of equity capital: the initiation of corporate social responsibility reporting. Accounting Review 86(1): 59–100.

Elzahar H, Hussainey K, Mazzi F, Tsalavoutas I (2015) Economic consequences of key performance indicators' disclosure quality. International Review of Financial Analysis 39: 96 –112.

Fan J, Wong TJ (2005) Do external auditors perform a corporate governance role in emerging markets? Evidence from East Asia. Journal of Accounting Research 43: 35–72.

Feldman R, Govindaraj S, Livnat J, Segal B (2010) Management's tone change, post earnings announcement drift and accruals. Review of Accounting Studies 15: 915–953

Gelb DS, Zarowin P (2002) Corporate disclosure policy and the informativeness of stock prices. Review of Accounting Studies 7(1): 33–52.

Gow I, Ormazabal G, Taylor D (2010) Correcting for cross-sectional and time-series dependence in accounting research. The Accounting Review 85(2): 483–512.

Gujarati DN, Porter DC (2009) Basic Econometrics. Fifth Edition, New York, McGraw Hill.

Guo Z, Chan K, Xue Y (2016) The impact of corporate culture disclosure on performance: A quantitative approach. Review of Pacific Basin Financial Markets and Policies 19(2): 1–29.

Hassan O, Romilly P, Giorgioni G, Power D (2009) The value relevance of disclosure: Evidence from the emerging capital market of Egypt. The International Journal of Accounting 44: 79–102.

Hassanein A, Hussainey H (2015) Is forward-looking financial disclosure really informative? Evidence from UK narrative statements. International Review of Financial Analysis 41: 52 – 51.

Hayn C (1995) The information content of losses. Journal of Accounting and Economics 202: 125–153.

Healy PM, Hutton A, Palepu KG (1999) Stock performance and intermediation changes surrounding sustained increases in disclosure. Contemporary Accounting Research 16(3): 485–520.

Henry D (2008) Corporate governance structure and the valuation of Australian firms: is there value in ticking the boxes? Journal of Business Finance & Accounting 35(7-8): 912–942.

Hussainey K (2009) The impact of audit quality on earnings predictability. Managerial Auditing Journal 24(4): 340–351.

Hussainey K, Schleicher T, Walker M (2003) Undertaking large-scale disclosure studies when AIMR-FAF ratings are not available: the case of prices leading earnings. Accounting and Business Research 33(4): 275–294.

IFRS (2010) Practice statement, MC, A framework for presentation. International Financial Reporting Standard, London: UK.

Jensen M (1986) Agency costs of free cash flow, corporate finance, and takeovers. American Economic Review 76(2): 323–329.

Lam SS, Du J (2004) Information asymmetry and estimation risk: preliminary evidence from Chinese equity markets. Pacific-Basin Finance Journal 12: 311–331.

Larcker D, Rusticus T (2010) On the use of instrumental variables in accounting research. Journal of Accounting and Economics 49(3): 186–205.

Lawrence A, Minutti-Meza M, Zhang P (2011) Can big 4 versus non-big 4 differences in audit quality proxies be attributed to client characteristics? The Accounting Review 86(1) 259–286.

Leung S, Horwitz B (2010) Corporate governance and firm value during a financial crisis. Review of Quantitative Finance and Accounting 34(4): 459–481

Li F (2010) The information content of forward-looking statements in corporate filings—A Naıve Bayesian Machine learning approach. Journal of Accounting Research 48(5): 1049–1102.

Li X, Yang H (2016) Mandatory financial reporting and voluntary disclosure: The effect of mandatory IFRS adoption on management forecasts. The Accounting Review 91(3): 933–953.

Liu C, Uchida K, Yang Y (2012) Corporate governance and firm value during the global financial crisis: Evidence from China. International Review of Financial Analysis 21: 70–80.

Mangena M, Li J, Tauringana V (2016) Disentangling the effects of corporate disclosure on the cost of equity capital: A study of the role of intellectual capital disclosure. Journal of Accounting, Auditing & Finance 31(1): 3–27.

Mangena M, Tauringana V, Chamisa E (2012) Corporate boards, ownership structure and firm performance in an environment of severe political and economic crisis. British Journal of Management 23(S1): 23–41.

Merkley K (2014) Narrative disclosure and earnings performance: evidence from R&D. The Accounting Review 89(2): 725–757.

Miller B (2010) The effects of reporting complexity on small and large investor trading. The Accounting Review 85(6): 2107–2143.

Miller G (2002) Earnings performance and discretionary disclosure. Journal of Accounting Research 40: 173–204.

Muslu V, Radhakrishnan S, Subramanyam KR, Lim D (2015) Forward-looking MD&A disclosures and the information environment. Management Science 61: 931–948.

Ntim C, Opong K, Danbolt J (2012) The relative value relevance of shareholder versus stakeholder corporate governance disclosure policy reform in South Africa. Corporate Governance: An International Review 20(1): 84–105.

Officer M (2011) Overinvestment, corporate governance, and dividend initiations. Journal of Corporate Finance 17(3): 710–724.

Patel SA, Balic A, Bwakira L (2002) Measuring transparency and disclosure at firm level in emerging markets. Emerging Markets Review 3(4): 325–337.

Petersen MA (2009) Estimating standard errors in finance panel data sets: comparing approaches. Review of Financial Studies 22: 435–79.

Plumlee M, Brown D, Hayes R, Marshall S (2015) Voluntary environmental disclosure quality and firm value: Further evidence. Journal of Accounting and Public Policy 34(4): 336–361.

Rasiah D, Tong D, Kim P (2014) Profitability and firm size-growth relationship in construction companies in Malaysia from 2003 to 2010. Review of Pacific Basin Financial Markets and Policies 17(3): 1–19.

Rountree B, Weston JP, Allayannis G (2008) Do investors value smooth performance? Journal of Financial Economics 90(3): 237–251.

Schleicher T, Hussainey K, Walker M (2007) Loss Firms' Annual Report Narratives and Share Price Anticipation of Earnings. The British Accounting Review 39(2): 153–171.

Smith M, Taffler R (2000) The chairman's statement: a content analysis of discretionary narrative disclosures. Accounting Auditing and Accountability Journal 13(5): 624–646.

Tabachnick B, Fidell L (2007) Using multivariate statistics. Fifth Edition, Pearson Education Inc., London.

Van Buskirk, A (2012) Disclosure frequency and information asymmetry. Review of Quantitative Finance and Accounting 38(4): 411–440.

Wallace RSO, Naser K (1995) Firm-specific determinants of comprehensiveness of mandatory disclosure in the corporate annual reports of firms listed on the stock exchange of Hong Kong. Journal of Accounting and Public Policy 14(4): 311–368.

Wang M, Hussainey K (2013) Voluntary forward-looking statements driven by corporate governance and their value relevance. Journal of Accounting and Public Policy 32: 26–49.

Zhang L, Ding S (2006) The effect of increased disclosure on cost of capital: Evidence from China. Review of Quantitative Finance and Accounting 27(4): 383–401

APPENDICES

Appendix (1): List of forward-looking keywords

Aim	Next
Anticipate	Plan
Believe	Predict
Coming	Project
Estimate	Prospect
Eventual	Seek
Expect	Shortly
Following	Soon
Forecast	Subsequent
Forthcoming	Unlikely
Future	Upcoming
Hope	Well-placed
Incoming	Well-positioned
Intend	Will
Intention	Year-ahead
Likely	
Look-ahead	
Look-forward	

The order of the keywords is alphabetical.

In addition to this list of keywords, time indicators, conjugations, and reference to future years are added in the coding process.

This Table includes the list of 33 forward-looking keywords.

Appendix (2): Definitions and measurements of variables

Definition	Acronym	Operationalization
Forward-looking disclosure	FLD	Total frequency of forward-looking statements divided by the total number of sentences in the narrative section of the annual report. For details, see section 3.2.1.
Firm value	IMadj.TQ$_{+3}$	Industry median adjusted Tobin's Q ratio at three months after the date of the annual report. It is computed as the firm's Tobin's Q minus the median Tobin's Q in the firm's industry in the observation year. The Tobin's Q = [(total debt + market value of equity) / book value of total assets]. Market value of equity is calculated as the number of outstanding shares at year-end multiplied by the mean of the stock prices at three months after the annual report date.
Firm size	LnMK	Natural logarithm of the market value of equity at the end of the current year. Datastream code: WC08001.
Dividend	DY	Dividend yield ratio. Datastream code: WC09402.
Current earnings	ROA	Firm return of equity ratio. Datastream code: WC08301.
Leverage	Lev	Firm debt to equity ratio. Datastream code: WC08231.
Liquidity	CR	Firm current assets to current liabilities ratio. Datastream code: WC08106.
Earnings volatility	Ear.Vol	Earnings volatility is measured as the coefficient of variation over the four years. The coefficient of variation is widely used in the related literature (e.g., MSW; Michelson et al., 1995) and is calculated as the standard deviation of the unscaled earnings series divided by the mean values.
Managerial ownership	%MO	The percentage of total shares held by employees or those who have a substantial position that provides significant voting power at an annual general meeting. Datastream code: NOSHEM.
Firm growth	GRTH	Firm sales growth ratio. Datastream code: WC08633.
Capital expenditure	CAPEX	Capital expenditure to assets ratio. Datastream code: WC08420.
Length of narrative document	LNGTH	Total sentences in the annual report narrative sections.
Audit firm size	Big-N Non-Big-N	The sample is divided into two sub-samples based on the size of the auditing firm: firms audited by one of the Big 4 auditing firms (Big-N) and firms audited by a non-Big 4 auditor (Non Big-N). The Big-N auditing firms are PwC, Deloitte, Ernst & Young, and KPMG. The Non-Big-N are all auditors other than the Big-N.
High and low performing firms	High-Preforming Low-Preforming	High-performing firms are firms with a positive change in ROA from the previous year (ΔROA>0). While firms with a negative change in ROA (ΔROA<0) are regarded as low-performing firms.

Notes: This Table reports the definitions and measurements of all variables.

List of Tables

Table (1): Sample selection and allocation over years and industry

Panel A: Sample distribution over years

Years	Freq.	Percent
2005	256	8.73
2006	251	8.56
2007	259	8.83
2008	278	9.48
2009	297	10.13
2010	306	10.44
2011	323	11.02
2012	320	10.91
2013	323	11.02
2014	319	10.88
Total	2932	100

Panel B: Sample distribution over industries

Industries	Freq.	Percent
Oil and gas (0001)	147	5
Basic materials (1000)	234	8
Industrial (2000)	1026	35
Consumer goods (3000)	323	11
Health care (4000)	176	6
Consumer services (5000)	645	22
Telecommunication (6000)	29	1
Utilities (7000)	59	2
Technology (9000)	293	10
Total	2932	100

Notes: This Table provides the distribution of the sample among years industries. Our sample consists of 2932 firm-year observations distributed over 10 years period (2005-2014) and 9 industries. The definition of the industry is based on the Industry Classification Benchmark (ICB).

Table (2): Descriptive statistics of variables

Panel A: Descriptive - Continues variables

	Mean	Std. Dev.	Min.	Max.
Firm value [IMadj.TQ$_{+3}$]	0.663	8.684	-2.423	377.636
Forward-looking disclosure [FLD Score]	0.158	0.055	0.003	0.363
Firm size [LnMK]	12.434	2.215	7.870	18.038
Firm Dividends [DY]	2.921	1.983	0.000	20.590
Current Earnings [ROA]	5.552	6.046	-51.940	36.660
Firm leverage [Lev]	21.452	72.298	0.0000	242.190
Firm Liquidity [CR]	1.817	1.651	0.300	11.730
Earnings volatility [Ear.Vol]	0.946	0.622	-0.220	2.900
Managerial ownership [MO%]	8.649	15.678	0.000	99.000
Firm growth [GRTH]	8.974	13.045	-38.930	73.830
Capital expenditure [CAPEX]	5.655	5.242	0.150	27.970
Length of narrative document [LNGTH]	431.573	640.902	10.000	7835.000

Panel B: Frequencies- Dummy variables

Variable	Dummies	Freq.	Percent
Auditor size	0	586	19.9
	1	2346	80.01

Panel C: Differences based on auditor size and firm performance

	Firm performance			Audit firm size		
	High	Low	*t-statistics*	Big-N	Non Big-N	*t-statistics*
	Mean	Mean	*(Obs)*	Mean	Mean	*(Obs)*
FLD score	.151	.179	-6.501***	0.147	0.194	-11.949***
IMadj.TQ$_{+3}$	.196	.129	1.807*	0.198	0.120	2.282**
Observations	*1294*	*1382*	*(2676)*	*2346*	*586*	*(2932)*

Notes: This table reports the descriptive statistics of continues variables in Panel A. While Panel B reports the frequencies of dummy variables. Panel C reports the differences in firm value and forward-looking disclosure based on firm performance and size of audit firm.

Variables' definitions and measurements are the same as summarized in Appendix (2).

***, **, and * indicate significance at 0.01, 0.05, and 0.1, respectively.

Table (3): Correlation analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) IMadj.TQ$_{+3}$	1.000												
(2) FLD Score	0.076*** (0.000)	1.000											
(3) LnMK	-0.060*** (0.003)	-0.298*** (0.000)	1.000										
(4) DY	-0.053*** (0.009)	-0.047** (0.020)	0.039* (0.056)	1.000									
(5) ROA	-0.126*** (0.000)	-0.140*** (0.000)	0.359*** (0.000)	0.095*** (0.000)	1.000								
(6) Lev	0.918*** (0.000)	0.009 (0.662)	-0.005 (0.796)	0.007 (0.725)	-0.08*** (0.000)	1.000							
(7) CR	-0.005 (0.786)	0.096*** (0.000)	-0.19*** (0.000)	-0.17*** (0.000)	-0.14*** (0.000)	-0.09*** (0.000)	1.000						
(8) Ear.Vol	-0.015 (0.451)	-0.044** (0.029)	0.153*** (0.000)	-0.16*** (0.000)	-0.11*** (0.000)	-0.019 (0.351)	0.057*** (0.005)	1.000					
(9) MO%	0.007 (0.701)	0.178*** (0.000)	-0.35*** (0.000)	-0.03^c (0.053)	-0.07*** (0.000)	-0.030 (0.143)	0.112*** (0.000)	-0.15*** (0.000)	1.000				
(10) GRTH	0.031 (0.128)	0.032 (0.111)	0.108*** (0.000)	-0.09*** (0.000)	0.077*** (0.000)	0.017 (0.386)	0.063*** (0.002)	0.013 (0.528)	0.004 (0.817)	1.000			
(11) CAPEX	-0.035* (0.089)	0.021 (0.314)	0.180*** (0.000)	-0.013 (0.512)	0.115*** (0.000)	-0.005 (0.800)	0.064*** (0.001)	-0.008 (0.676)	0.002 (0.904)	0.185*** (0.000)	1.000		
(12) LNGTH	0.029 (0.162)	-0.435*** (0.000)	0.361*** (0.000)	0.082*** (0.000)	0.089*** (.000)	0.139*** (0.000)	-.129**** (0.000)	0.072*** (0.000)	-0.159*** (0.000)	0.010 (0.615)	0.035* (0.088)	1.000	
(13) Auditor Size	0.036* (0.081)	-0.225*** (0.000)	0.453*** (0.000)	0.145*** (0.000)	0.123*** (0.000)	0.227*** (0.000)	-0.227*** (0.000)	0.161*** (0.000)	-.0313*** (0.000)	-0.010 (0.628)	.089*** (0.000)	0.168*** (0.000)	1.000

Notes: This Table presents the Pearson Correlation Matrix among all variables.

Variables' definitions and measurements are the same as summarized in Appendix (2).

***, **, and * indicate significance at 0.01, 0.05, and 0.1, respectively.

Table (4): Models (1) & (2) results: FLD impact on values of FTSE all-shares firms

	Independent Variables	Pred. Sign	Fixed-effect Model (1) Coefficient (t-statistic)	Random-effect Model (2) Coefficient (z-statistic)
Intercept			-4.268*** (-4.61)	-6.373*** (-4.76)
Forward-looking disclosure	FLD	(+)	7.907*** (8.42)	1.792*** (2.78)
Firm size	LnMK	(?)	0.081** (2.05)	0.172*** (2.98)
Firm dividend	DY	(?)	-0.116*** (-4.61)	-0.047*** (-2.73)
Firm current earnings	ROA	(+)	-0.021*** (-3.21)	-0.0217*** (-4.11)
Firm leverage	Lev	(−)	0.111*** (117.95)	0.101*** (165.31)
Firm liquidity	CR	(+)	0.377*** (7.73)	0.288*** (6.46)
Earnings volatility	Ear.Vol	(−)	-0.315** (-2.52)	-0.179* (-1.90)
Managerial ownership	%MO	(?)	0.002 (0.53)	0.005 (1.00)
Firm growth	GRTH	(+)	0.010** (2.27)	0.007** (2.07)
Capital expenditure	CAPEX	(?)	-0.050*** (-3.45)	-0.051*** (-2.72)
Length of narrative document	LNGTH	(+)	-.074*** (-3.17)	-.039* (-1.66)
Wald Chi-square				28068.29***
F-test			608.78***	
Adjusted R- squared (%)			86.78	86.44
No. of observations			2932	2932

Notes: This Table reports the coefficients estimate of models (1) & (2). The dependent variable is $IMadj.TQ_{+3}$ – Firm Value measured using an industry median adjusted Tobin's Q ratio at three months after the date of annual report. The *t*-statistics and *z*-statistics are presented in parentheses for fixed and random effects estimates, respectively.
Variables' definitions and measurements are the same as summarized in Appendix (2).
*, **, and *** indicate significance at 0.1, 0.05 and 0.01, respectively.

Table (5): Models (1) & (2) results: High-performing vs. low-performing firms

	Indep. Variables	Pred. Sign	(1) High-performing firms		(2) Low-performing firms	
			Fixed-effect Model (1)	Random-effect Model (2)	Fixed-effect Model (1)	Random-effect Model (2)
			Coefficient (t-statistic)	Coefficient (z-statistic)	Coefficient (t-statistic)	Coefficient (z-statistic)
Intercept			-2.326*** (-4.80)	-2.672*** (-3.85)	-5.437*** (-3.39)	-5.631*** (-3.42)
Forward-looking disclosure	FLD	(+)	-.284 (-0.46)	-.232 (-0.57)	11.031*** (7.50)	3.808*** (3.42)
Firm size	LnMK	(?)	.116*** (4.91)	.128*** (4.02)	.123* (1.83)	.145* (1.93)
Firm dividend	DY	(?)	-.069*** (-3.48)	-.048*** (-3.33)	-.151*** (-4.15)	-.091*** (-3.31)
Firm leverage	Lev	(+)	.014*** (5.44)	.022*** (9.90)	.112*** (96.68)	.103*** (127.59)
Firm liquidity	CR	(−)	.123*** (4.51)	.044** (1.95)	.430*** (4.79)	.405*** (4.72)
Earnings volatility	Ear.Vol	(+)	-.037 (-0.51)	-.034 (-0.62)	-.614*** (-2.83)	-.458*** (-2.64)
Managerial ownership	%MO	(−)	.007** (2.59)	.010*** (3.05)	.007 (0.92)	.006 (0.77)
Firm growth	GRTH	(?)	.011*** (4.48)	.005*** (2.67)	.006 (0.87)	.006 (1.11)
Capital expenditure	CAPEX	(+)	-.009 (-1.03)	.002 (0.03)	-.046* (-1.87)	-.048* (-1.73)
Length of narrative document	LNGTH	(+)	-.104*** (-3.108)	-.080** (-2.532)	-.006 (-.177)	-.005 (-.170)
Wald Chi-square				168.52***		17108.31***
F-test			6.30***		423.92***	
Adjusted R- squared (%)			10.53	9.52	89.90	89.79
No. of observation			1294	1294	1382	1382

Notes: This Table reports the coefficients estimate of models (1) & (2) for two sub-samples: high- and low-performing firms. The dependent variable is IMadj.TQ$_{+3}$ – Firm Value measured using an industry median adjusted Tobin's Q ratio at three months after the date of the annual report. The *t*-statistics and *z*-statistics are presented in parentheses for fixed and random effects estimates, respectively.
Variables' definitions and measurements are the same as summarized in Appendix (2).
*, **, and *** indicate significance at 0.1, 0.05 and 0.01, respectively.

Table (6): Models (1) & (2) results: Big-N vs. non Big-N auditors

	Indep. Variables	Pred. Sign	(1) Big-N Auditors		(2) Non Big-N Auditors	
			Fixed-effect Model (1)	Random-effect Model (2)	Fixed-effect Model (1)	Random-effect Model (2)
	Indep. Variables	Pred. Sign	Coefficient (t-statistic)	Coefficient (z-statistic)	Coefficient (t-statistic)	Coefficient (z-statistic)
Intercept			-1.616*** (-3.75)	-1.426* (-1.74)	-13.886*** (-2.84)	10.093** (-2.08)
Forward-looking disclosure	FLD	(+)	.484*** (5.10)	.602*** (4.49)	.816 (0.95)	.539 (1.06)
Firm size	LnMK	(?)	.102*** (5.34)	.110*** (3.60)	.491* (1.78)	.431 (1.51)
Firm dividend	DY	(?)	-.025** (-2.17)	-.007 (-1.05)	-.317** (-2.23)	-.304** (-2.15)
Firm current earnings	ROA	(+)	.006* (1.79)	.003 (1.56)	-.115*** (-4.93)	-.109*** (-4.79)
Firm leverage	Lev	(−)	-.005 (-0.29)	-.009 (-0.45)	.113*** (66.70)	.111*** (68.94)
Firm liquidity	CR	(+)	.171*** (6.55)	-.006 (-0.33)	.299* (1.84)	.327* (1.96)
Earnings volatility	Ear.Vol	(−)	.089 (1.54)	-.035 (-0.90)	-1.241** (-2.12)	-1.245** (-2.16)
Managerial ownership	%MO	(?)	.010*** (4.35)	.005** (2.17)	-.045*** (-2.81)	-.044*** (-2.60)
Firm growth	GRTH	(+)	.015*** (6.92)	.002 (1.61)	-.0319* (-1.84)	-.023 (-1.41)
Capital expenditure	CAPEX	(?)	-.001 (-0.29)	.002 (0.24)	-.046 (-0.59)	.0381 (-0.48)
Length of narrative document	LNGTH	(+)	-.092*** (-3.703)	-.056** (-2.444)	.014 (.295)	.031 (.664)
Wald Chi-square				69.63***		5537.57***
F-test			9.08***		234.02***	
Adjusted R- squared (%)			9.45	4.43	4.07	4.06
No. of observations			2346	2346	586	586

Notes: This Table reports the coefficients estimate of models (1) & (2) for two sub-samples: firms audited by one of the Big 4 auditing firms (Big-N) and firms audited by non-big auditor (Non Big-N). Dependent variable is IMadj.TQ+3 – Firm Value measured using an industry median adjusted Tobin's Q ratio at three months after the date of the annual report. The *t*-statistics and *z*-statistics are presented in parentheses for fixed and random effects estimates, respectively.

Variables' definitions and measurements are the same as summarized in Appendix (2).

*, **, and *** indicate significance at 0.1, 0.05 and 0.01, respectively.

Table (7): Endogeneity tests results

	All sample firms	Firm performance		Audit firm size	
		High-performing	Low-performing	Big-N Auditor	Non Big-N Auditor
Sargan statistic	1.523	1.906	1.884	2.0966	1.8276
	(.524)	(0.781)	(0.142)	(0.8591)	(0.6288)
Basmann statistic	1.253	1.679	1.723	1.8469	1.5036
	(0.540)	(0.787)	(0.185)	(0.8657	(0.648)
Durbin statistic	0.986	0.675	1.265	0.7425	1.1832
	(0.501)	(0.745)	(0.239)	(0.8195)	(0.6012)
Wu–Haumsan statistic	0.892	0.530	1.349	0.583	1.0704
	(0.572)	(0.751)	(0.269)	(0.8261)	(0.6864)

Notes: This Table reports the endogeneity tests' results for all sample firms, Big-N and Non Big-N auditors firms, and for high and low-performing firms, separately.
The Chi-square and the F values are given in parentheses.