Determinants of the Extent of Forward Looking Information: Evidence from UK before Financial Crisis

Abstract

The study aims to propose a multi-theoretical framework based on information asymmetry and institutional theories by focusing on the OFR regulation changing period from 2004-2006. We carry out an empirical investigation to detect the extent of forward-looking information for a sample of 690 UK non-financial firm-year observations which are drawn from the top 500 UK. We show that the extent of voluntary disclosure of Forward Looking (FL) information is positively and significantly associated with growth opportunities, leadership, audit committee, competition rate, corporate size, and cross-listing. However, the extent of FL information is negatively and significantly associated with blockholders. This paper applies a multi-theoretical lens based on information asymmetry and institutional theories are employed in order to identify potential new determinants of voluntary disclosure in regards to forward-looking information in the UK context.

1. Introduction

Corporate disclosure practices are one of the main themes in financial accounting research. One particular area of interest is the disclosure of forward-looking information. Most of the prior studies on forward-looking information have a focus on earnings forecasts (e.g., Clarkson et al., 1994; Frankel et al., 1995; Miller and Piotroski, 2000; Johnson et al., 2001; Kent and Ung, 2003), and their primary theoretical foundation was the notion of information asymmetry. In contrast, Adhikari and Tondkar (1992) argued

that diversity in disclosure practices reflects the influence of a range of different characteristics including both economic and behavioural factors.

Abed et al. (2014) employed institutional theory to examine determinants of cash flow forecasts. Based on this proposition, the determinants of forward-looking information are subject to two types of influence: information asymmetry characteristics (Healy and Palepu, 2001) and institutional incentives (DiMaggio and Powell, 1991). The unique features of forward-looking information suggest trade-off beyond the typical factors considered by the single theoretical framework of information asymmetry. For example, Zucker (1987) highlighted that organisations are affected by pressures from external influences such as the state or/and pressures arising from the organisation itself. Thus, a multi-theoretical lens based on information asymmetry and institutional theories are used in this study in order to identify potential new determinants of voluntary disclosure in regards to forward-looking information.

To test the aspects of the proposed framework, this study involves an empirical investigation of the narratives in annual reports of UK non-financial listed companies. The UK financial reporting environment is seen as a rich area for examining several aspects of the proposed theoretical framework. We contribute to the literature by looking at different aspects of the FL disclosure which include corporate governance, ownership structure, institutional aspects and firm specific factors. These factors are investigated within an interesting period of the OFR regulation changes.

The reminder of this study is organised as follows: Section 2 reviews previous studies related to the current study. Section 3 develops the study hypotheses. Section 4 presents the methodology of the study. Section 5 discusses the results of the study. Section 6 presents sensitivity analyses. Section 7concludes and suggests future studies.

2. Literature Review and Hypotheses Development

The majority of previous studies have examined the determinants of forward-looking disclosures tests on the propositions provided by economic theories. The primary theoretical foundation of these theories is based on the problem of information asymmetry between the manager and the shareholder/ debtholder. Based on this perspective, previous studies in the accounting literature have focused on corporate characteristics. However, different measurements of the extent of corporate disclosures and alternative

firm characteristics were employed. Earlier studies conducted on determinants of FL information in this area have concentrated on the earnings forecast as a proxy for forward-looking information (e.g., Clarkson et al., 1994; Frankel et al. 1995; Miller and Piotroski, 2000; Johnson et al., 2001; Kent and Ung, 2003). However, Wasley and Wu (2006) examined the determinants of disclosure of cash flow forecasts using a keyword search to identify forecasts in the press release. The results of logistic regression performed of 792 firm-year observations for 2000-2003 revealed that the disclosure of cash flow forecast is positively related to good cash flow information, when analysts are forecasting an earning loss, when prevailing management earning guidance conveys bad news, and when the firm is young. Cao et al. (2007) were influenced by Wasley and Wu (2006), who investigated the economic factors that explain managers' strategic behaviour when choosing the level of verifiability in a voluntary disclosure of 1067 firm-observations drawn from COMPUSTAT for the 2000-2003 period. The results of the probit model documented that managers' decisions to issue "soft talk" cash flow forecasts are positively and significantly related to litigation risk and financial stress, but negatively and significantly related to cash flow performance, analyst following, and the issuance of previous cash flow forecasts. Abed et al. (2014) found a positive relation between cash flow forecasts and industry behavior. That is companies try in general to copy the behavior of other companies in the same industry.

Studies in other line of literature can be further divided into studies examining the determinants of the extent of forward-looking information using; disclosure indices, manual content analysis, and computerised content analysis.

2.1. Previous Studies Employing Disclosure Indices

In one of the earliest comparative studies that used non-financial disclosure indices, Robb et al. (2001) examined factors that determine the non-financial forward-looking disclosure of firms from culturally similar countries. The results revealed that there is a positive relationship between non-financial FL information and cross-listing, company size, and geographic dispersion. In a more informative study, Vanstraelen et al. (2003) replicated the study of Robb et al. (2001) using an alternative set of countries, which differs in terms of legal and institutional settings (Belgium, Germany, and the Netherlands). They also extended the research of Robb et al. (2001) by examining the relationship between non-financial disclosure and the dispersion and accuracy of analysts' earnings forecasts. The results found a positive relationship between cross-listing, company size, and non-financial FL information. Furthermore, Vanstraelen et al. reported that a higher level of FL non-financial information is associated with lower dispersion and higher accuracy in financial analysts' earnings forecasts. Cahan and Hossain (1996) in their study, employed a more comprehensive proxy to measure the quality of disclosure. They employed a measure to count the frequency of disclosure items rather than using a dichotomous approach to

investigate the presence/absence of an item. They demonstrated that forward-looking information is positively related to company size, but that it is negatively related to blockholding of 10% or more. Studies conducted afterwards were generally motivated by the methodology used in Cahan and Hossain (1996). For example, Hossain et al. (2005) was influenced by the former study in examining the relationship of the disclosure of forward-looking information and the investment opportunity. They found that FL information was positively related to company size, growth opportunities, and public offerings. Furthermore, they tested for endogenous relationships between IOS and disclosures using a simultaneous system of equation. The results supported the hypothesis that IOS is positively related to the level of disclosure.

Additionally, voluntary disclosures are means by which multinationals can cope with international diversity, thus suggesting that voluntary disclosures are more likely to provide a basis for harmonising accounting standards for culturally similar countries (Robb et al., 2001). By contrast, the use of voluntary disclosure for countries that differ in legal practices, financial accounting practices, and cultures may be inappropriate (e.g., Vanstraelen et al., 2003). That is, voluntary disclosure in one country might be mandatory in other country, and vice versa, this may affect the reliability of disclosure results. On the other hand, Lim et al. (2007) implied that more disclosure is "better", yet this may not be the case, and future research could develop a new proxy for the quality of disclosure. Although the construction of disclosure indices involves subjective judgments on the part of the researcher, such indices demonstrate their ability as valuable research instruments for measuring the level of corporate disclosure (Marston and Shrives, 1991; Botosan, 1997; Healy and Palepu, 2001).

2.2. Previous Studies Employing Manual Content Analysis

Other studies have used manual content analysis to measure the extent of forward-looking information. For example, in the emerging market, Celik et al. (2006) examined factors which affect the level of voluntary disclosure by counting the number of sentences with forward-looking information. The results showed that size, foreign offers, and industry are found to be positively and significantly related to FL information, but negatively and significantly related to free float ownership, profitability, foreign investment, and institutional investors. Moreover, Celik et al. counted the number of sentences with

financial forward-looking information only. In this determination phase, they found that the disclosure of financial information has different characteristics; in particular, free float and performance were found to be negatively related to the disclosure of forward-looking financial information.

Further studies were generally motivated by Beattie et al. (2004). For example, Beretta and Bozzolan (2008) adopted a multi-dimensional framework and calculated a quality disclosure index for forward-looking. Phrases were coded using manual content analysis based on four dimensions: content, type of measure, economic sign, and outlook profile. The regression results showed that the extent of forward-looking information is positively related to corporate size, industry, and firm's with other form of disclosure. The result of the determinants of disclosure quality revealed that financial analysts and the industry are negatively related to quality of disclosure, whereas they are positively related to earnings surprise. Similarly, Abad et al. (2008) were influenced by Beretta and Bozzolan (2008) in examining the determinants of the quality of disclosure. Moreover, Abad et al. (2008) used two other indices to measure the scope and quantity of disclosure. However, sentences were used as a unit of code instead of phrases in Beretta and Bozzolan's (2005) study. The results revealed that, when considering the quality index or scope index, size is the only variable which is positively and significantly related to forward-looking information. When using a quantity index, the results indicated that size, leverage, and growth opportunities are positively and significantly related to forward-looking information. The regression results of several disclosure indices demonstrated different results, which may suggest that the determinants of quality are different than the determinants of quantity of the forward looking information.

To sum up, manual content analysis involves in classifying text units into categories in order to draw valid inferences with the aim of quantifying disclosure items (e.g., Beretta and Bozzolan, 2008; Abad et al., 2008) or reading a narrative section in order to determine information related to forward-looking disclosures (Celik et al., 2006).

2.3. Previous Studies Employing Computerised Content Analysis

Explanatory studies witnessed the inclusion of automated content analysis to score narratives. The majority of the studies conducted in this area are based on the research of Hussainey et al. (2003). For example, from emerging markets perspectives, Aljifri and Hussainey (2007) empirically explored the relationship between forward-looking information and firm-specific characteristics for 64 companies listed on either the Dubai or the Abu Dubai financial markets. The results documented a positive

relationship between forward-looking information and debt ratio, but a negative association with profitability.

In the UK, Athanasakou and Hussainey (2009) examined cross-sectional variation in abnormal disclosure scores that deviate from the industry and years average. The results of first stage regression revealed that the disclosure of forward-looking information is positively related to abnormal share trading, analyst following, analysts dispersion, a change in capital structure, company size, and audit quality, but that it is negatively related to proprietary costs and earnings benchmarks. The results of second-stage specification showed that there is a positive relationship between the disclosure of forward-looking information and stock price reaction. Additionally, Athanasakou and Hussainey (2009) examined whether investors assessed forecast reputation and reported earnings quality in order to ensure the creditability of forward-looking statements in the narrative sections in the annual reports. The results of pooled OLS regression revealed that the market's responsiveness to forward-looking information is positively related to forecasting reputation, analyst following, and audit size, but that it is negatively related to decline in earnings and financial distress. The findings documented that reporting credibility is positively related to size and sales volatility, but negatively related to growth perspective, financial distress, analyst following, and external funds.

Al-Najjar and Abed (2014) examined the relationship between forward looking information and corporate governance variables using computerized content analysis. The results confirmed that forward looking information is positively related to both board size and independence of audit committee.

Previous studies explained variation in voluntary disclosure of forward-looking information based on a single theoretical framework (e.g., Clarkson et al., 1994; Cahan and Hossain, 1996; Clarkson et al., 1999; Johnson et al., 2001; Kent and Ung, 2003; Robb et al., 2001; Vanstraelen et al., 2003; Hossain et al., 2005; Celik et al., 2006; Lim et al., 2007; Bozzolan and Mazzola, 2007; Aljifri and Hussainey, 2007). Thus, their empirical results have not been subjected to alternative tests. However, Miller and Piotroski (2000) identified cross-sectional factors that affect the disclosure of forward-looking earnings information based on information asymmetry and institutional theories. Recently, institutional theory has begun to focus more directly on institutional phenomena within organisations (Moll et al., 2006). Specifically, it argues that organisation could be influenced by cognitive, normative, and regulative structures and activities which may provide consistent explanation of disclosure practices (Scott, 1995).

As discussed above, most of the previous studies ignored the effect of institutional theory, with the exception of Miller and Piotroski (2000), who examined the effect of legal and external pressures which may affect the disclosure level. Therefore, the present study examines the determinants of forward-looking disclosures using a multi-theoretical framework based on both information asymmetry characteristics and institutional incentives. Such a framework provides a more comprehensive prospective on forward-looking disclosures as it recognizes that organisations evolve within a society that encompasses many different industries. Additionally, a multi-theoretical framework aims to increase our understanding of disclosure practices and to identify potential new determinants of forward-looking disclosures.

Another motivation for using automated content analysis is that the previous literature on corporate disclosures used limited sets of disclosure items or employed simple coding procedures (e.g., Cahan and Hossain, 1996; Clarkson et al., 1999; Robb et al., 2001; Kent and Ung, 2003; Vanstraelen et al., 2003; Hossain et al., 2005; Bozzolan and Ipino, 2007; Lim et al., 2007). The current study employs automated content analysis using computerised software, QSR NVivo 8, to investigate the extent of forward-looking information by employing quite large list of topics. NVivo unifies coding procedures for companies drawn from the top 500 UK listed companies (which are selected for the period 2004-2006) by market capitalization as listed by the *Financial Times* UK 500 on 30 March 2007. This method dramatically decreases the level of subjectivity involved in the coding scheme used, thus resulting in improving comparability and consistency across firms and over time.

Previous studies that used automated content analysis (e.g., Hussainey et al. 2003; Beattie et al., 2004; Aljifri and Hussainey, 2007; Athanasakou and Hussainey, 2009) have employed Nudist software, which performs coding at the sentence level as a unit of code. In the current study coding is performed at the text unit as a unit of analysis.

Finally, Abed et al. (2015) argued that the decision to use computerised or a manual content analysis is not driven by differences in the resulting measures, but is related to the trade-off between the time for setting up coding rules and the saved time of not undertaking the analysis itself. Hence, automated content analysis offers significant time saving which will compensate the additional needed time to formalize the search rules.

3. Hypotheses Development

Based on above and consistently with previous studies, the current study hypothesizes that disclosures of forward-looking information is functions of information asymmetry and institutional characteristics.

3.1. Information Asymmetry Factors

Growth Opportunities

Smith and Watts (1992) and Gaver and Gaver (1993) stressed that firms with high growth opportunities have greater information asymmetry and agency costs than non-growth companies, so they are expected to disclose additional information in order to reduce the level of information asymmetry. Similarly, Hossain and Ahmed (2000) showed that firms with a higher percentage of growth options are more likely to disclose additional information. Growth companies are more likely to provide additional information to maximise the market value of the firm. Strebel (1996) argued that growth firms have incentives to increase their disclosure practices as a means of financing future growth opportunities, as well as to decrease the high level of information asymmetry around future opportunities. Signalling theory suggests a possible relationship between growth perspective and disclosure (Lev and Penman, 1990). Frankel et al. (1999) noted that the agency problem is observed more frequently in companies with high growth prospects, because they have greater information asymmetry than other firms. Gaver and Gaver (1993) found that growth companies pay higher compensation to executives than non-growth companies do. Smith and Watts (1992) demonstrated that growth firms have higher levels of remuneration for executives and employ better stock option plans. On the other hand, Prencipe (2004) highlighted that competitive costs arise from disclosing additional information which tends to be high for growing companies. Healy and Palepu (2001) pointed out that firms have an incentive not to disclose information that will reduce their competitive position, even if this makes it costly to raise their capital. Hossain et al. (2005) showed that growth opportunities are positively related to the extent of forward-looking disclosure. In the same way, Athanasakou and Hussainey (2009) showed that growth opportunities measured by book to market value is negatively related to forward-looking information. Hence, high growth companies are more likely to provide additional information to maximise shareholder value in the market. A positive relationship is expected between companies' forward-looking information and growth opportunities:

> *H1: There is a positive association between the level of forward-looking information and growth opportunities.*

Leverage

Ahmed and Nicholls (1994) concluded that when firms are financed by financial institutions, they are more likely to provide additional information compared to companies with a small amount of debt in their capital structure. Jensen and Meckling (1976) pointed out that, because companies with large debt in their capital structure incur more monitoring costs, they seek to reduce these costs by additional disclosure to satisfy the creditors' needs. Highly risk companies are perceived as risky by shareholders. For example, the potential wealth transfers from fixed claimants to residual claimant's increases as leverage increases (Myers, 1977). Therefore, voluntary disclosure reduces information asymmetry, thereby decreasing the borrower's risk of default, and in turn reducing the cost of capital (Baiman and Verrecchia, 1996). Leverage has been widely used in prior studies to examine the determinants of FL information (Vanstraelen et al., 2003; Celik et al., 2006; Lim et al., 2007, Aljifri and Hussainey, 2007; Abad et al., 2008; O'Sullivan et al., 2008). For example, O'Sullivan et al. (2008), Aljifri and Hussainey (2007), and Abad et al. (2008) documented a positive relationship between debt ratio and forward-looking information. Based on the above argument, a positive relationship is hypothesised between the disclosure of FL information and leverage:

> *H2: There is a positive association between the level of forward-looking information and leverage.*

Performance

Agency theory suggests that because of the separation between managers and owners and the difficulties that stakeholders face in monitoring managers' behaviour, investors based on reported performance to monitor their investment and to ensure that managers' behaviour is directed toward profit maximisation. Based on signalling theory, Ross (1979) Verrecchia (1983) and Dye (1985) demonstrated that companies with good news are more likely to disclose voluntary information to convince the capital market but companies with bad news are more likely to withhold information. Likewise, Milgrom (1981) demonstrated that even if disclosures are costless, external users will interpret non-disclosure as implying bad news. Courtis (1978) highlighted that when the rate of return is low, managers may not disclose too much because of the fear of losing their position in the company. Conversely, Wallace and Naser (1995) argued that profitable companies may not provide additional information because their investors are extremely satisfied; hence they do not need to disclose any additional information. Cahan and Hossain (1996) and Aljifri and Hussainey (2007) showed positive relationship between forward-looking disclosure and performance. Bozzolan and Mazzola (2007) revealed that the accuracy of forward-looking information increases for a profitable firm. Based on this assumption it can be hypothesised:

H3: There is a positive association between the level of forward-looking information and firm performance.

Earnings Volatility

Brown and Hillegesit (2007) anticipated earnings volatility to be related to information asymmetry. Based on the prediction of Verrecchia (1983) and Dye (1985), companies with good news are more likely to provide additional information. Lev and Penman (1990) defined good news as the magnitude of the increase in earnings. Prior studies indicated that firms which frequently disclosed earnings forecast are less likely to experience volatile earnings than firms which infrequently disclose forecasts (Waymire, 1985; Lev and Penman, 1990). On the other hand, Kent and Ung (2003) argued that legal liability occurred from inaccurate forecasts. That is, if the management frequently provides inaccurate FL information, the capital market might discredit any future performance. Previous studies have examined the relationship between forward-looking information and earnings volatility (Miller and Piotroski, 2000; Walker and Tsalta, 2001; Kent and Ung, 2003; Vanstraelen et al., 2003; Wasley and Wu, 2006). Miller and Piotroski (2000) showed that firms with more persistent and continuous earnings are more likely to provide forward-looking information during the turnaround period. Similarly, Kent and Ung (2003) found that companies with less volatile earnings are more likely to provide earnings forecast information. Walker and Tsalta (2001) documented no relationship between earnings volatility and disclosure quality. Vanstraelen et al. (2003) showed negative and insignificant relationship between changes in earnings and both the accuracy and dispersion of analysts' forecasts. Based on the above arguments, a negative relationship is expected between earnings volatility and FL information. Thus, it can be hypothesised:

H4: There is a negative association between the level of forward-looking information and earnings volatility.

Operating Cash Flow

Information asymmetry increases when management earnings forecasts are not consistent with their expectations. Therefore, additional information is needed to interpret the news in the management's earnings guidance. Moreover, when there is bad news in earnings, information asymmetry increases around earnings; thus, managers provide additional information to signal good news. Barth et al. (1998) argued that when financial distress increases, earnings become less informative and cash flows become more useful for valuation (Ohlson, 1980). Prior studies have examined the relationship between forward-looking information and OCF. Adhikari and Duru (2006) found a positive but insignificant relationship

between cash flow to net income ratio and the disclosure of free cash flow. However, Wasley and Wu (2006) found positive relation between cash flow forecasts and operating cash flow. Athanasakou and Hussainey (2009) detected a positive but insignificant relationship between the credibility of forward-looking information and changes in operating cash flow. Hence, a positive relationship is expected between OCF and FL information:

> H5: There is a positive association between the level of forward-looking information and operating cash flow.

Capital Need

The demand for external funds-whether debt or equity- exerts pressure on companies to provide voluntary disclosure in order to reduce information asymmetry around the company (Healy and Palepu, 2001). Diamond and Verrecchia (1991) argued that greater disclosure improves stock market liquidity by reducing the cost of capital through either decreased transactions costs or increased marketability of a firm's securities. Greater disclosure also enhances companies' reputations in the eyes of potential investors (Gray and Roberts, 1989). Similarly, Choi (1973) stressed that an increase in disclosure reduces the amount of uncertainty associated with both the present and the future of the company; hence, this leads to a lower rate of return required by investors which in effect reduces the cost of capital. Cerf (1961) highlighted that the managements of companies which rely on external capital are more likely to be aware of shareholders' needs and to appreciate their requirements for additional information. Verrecchia (1983) argued that greater voluntary disclosure reduces information asymmetry and lowers the firm's cost of external finance. However, if the problem of information asymmetry cannot be solved, it might be quite costly for companies seeking external funds to issue new debt or equity as a means of raising their capital since they are classified as risky companies (Myers and Majulf, 1984; Meek and Gray, 1989). Therefore, such circumstances force companies to provide additional information to the public through their annual reports, or other media, such as press releases, interim reports, and conference calls.

Previous studies have examined the relationship between the disclosures of forward-looking information and companies' needs for external funds (Clarkson et al., 1994; Frankel et al., 1995; Cahan and Hossain, 1996; Clarkson et al., 1999; Miller and Piotroski, 2000; Johanson et al., 2001; Kent and Ung, 2003; Hossain et al., 2005; Bozzolan and Ipino, 2007; Athanasakou and Hussainey, 2009). For instance, Clarkson et al. (1994) and Frankel et al. (1995) found that firms are more likely to issue forecasts if they are seeking external finance. Clarkson et al. (1999), Hossain et al. (2005), Bozzolan and Ipino (2007), and Athanasakou and Hussainey (2009) demonstrated a positive association between forward-looking

information and new issues of equity funds. Hence, a positive relationship is expected between capital need and voluntary disclosure of FL information. It can therefore be hypothesised that:

H6: There is a positive association between the level of forward-looking information and capital need.

Competition Rate

Healy and Palepu (2001) argued that managers' incentives to disclose additional information appear to be sensitive to the nature of competition; this is particularly the case in firms which face competition whether such competition is from existing competitors or merely from being a new entry. Furthermore, Healy and Palepu (2001) stated that companies compete primarily on the basis of price or capacity decisions. Based on this proposition, when companies are competing on a price basis, they have incentives not to provide additional information that might affect their competitive position. This is consistent with proprietary cost theory. Conversely, when companies are competing on capacities, firms try to disclose more information based on economic theory (Shin, 2002). Companies facing capacity (product) competition need funds to finance their capital investment to increase their market share; hence, they are expected to disclose more to reduce information asymmetry and in turn, to reduce the cost of capital. Shin (2002) employed the concept of strategic substitutes and strategic complements to identify capacity and price competition. By this he concluded that companies which engage in capacity competition (strategic substitutes) provide more information than companies which engage in price competition (strategic complements). Moreover, based on a "structure-conduct-performance hypothesis", Melnik et al. (2005) suggested that highly concentrated markets are less competitive than markets in which many small firms operate. That is, if market concentration reaches a high level, the competition decreases. This study investigates the effect of product competition based on economic theory; thus, a positive relationship is expected between competition rate and FL information.

H7: There is a positive association between the level of forward-looking information and competition rate.

Audit Committee

Corporate governance has a significant force in predicting and explaining management behaviour in disclosure studies. Corporate governance is viewed in the academic literature as an agency perspective. Different corporate governance mechanisms that may influence disclosure practices have been examined in previous studies. For example, the audit committee has been examined by Forker (1992). Agency

theory predicts that the existence of an audit committee reduces agency cost through monitoring the management's activities.

A debate has occurred over the independence of the audit committee (the Blue Ribbon Committee, 1999). The Blue Ribbon committee suggested that audit committee should have at least three members, with at least one of these members possessing accounting or financial management experience. PricewaterhouseCoopers (2000) recommended that audit committee performance should be of high quality when members are independent, and when they have significant governance expertise (Fama, 1980; Fama and Jensen, 1983). Empirically, O'Sullivan et al. (2008) found a positive relation between the independence of audit committee and disclosure of forward-looking information. Consequently, the above discussion results in the following hypothesis:

> *H8: There is a positive association between the level of forward-looking information and independence of audit committee.*

Ownership Structure

In the discussion of ownership structure, it is important to recognise that there are different types of investors exist in the capital market such as individuals, companies and banks, foreigners, professional investor bodies, and government. Each of these groups has different impact on disclosure. Thus, this study is limited to blockholding ownership. Agency theory suggested that substantial shareholders are expected to have both the power and the incentives to monitor managers' behaviours. Institutional shareholders can easily develop a strong relationship with the directors. In other words, firms with concentered ownership have less agency costs arising from shareholder/manager conflicts. By contrast, Byrd et al. (1992) highlighted that large shareholdings have stronger incentives to monitor managerial behaviour. Mckinnon and Dalimunthe (1993), Mitchell et al. (1995), Cahan and Hossain (1996) and Schadewitz and Blevins (1998) indicated a negative relationship between voluntary disclosure and blockholder ownership. Thus, it can be hypothesised that:

> *H9: There is a negative association between the level of forward-looking information and blockholding ownership.*

3.2. Institutional Factors

Analyst Following

Another important determinant which may explain variability in the extent of forward-looking disclosure is the number of analyst following the company. Healy and Palepu (2001) argued that financial analysts are viewed as strategy advisors to the company that they are analysing. Based on normative isomorphism in institutional theory, companies comply with suggestion recommended by external institutions such as professional bodies and consultants (DiMaggio and Powell, 1983). An institution might result from human activities, and it is expected to influence human activity; however, institutions do not necessarily reflect conscious human design (DiMaggio and Powell, 1991; Moll et al., 2006). Fogarty and Rogers (2005) argued that professions are dynamic bodies whose work requires a broader understanding, which is available in their output. Jung and Kwon (1988) argued that if investors acquire information from other independent sources, such as press releases or financial analysts, companies are less likely to provide additional information in their annual reports. Alternatively, firms with high analyst following may not need to disseminate information since they are less likely to be abandoned by the market, or they might provide disclosure about forward-looking information through press releases or through discussion with financial analysts. Empirical evidence concerning the association between FL information and analyst following has received mixed reactions. Walker and Tsalta (2001) and Athanasakou and Hussainey (2009) showed that forward-looking disclosure is positively related to a high number of analyst following the company. Based on the above arguments, it can be hypothesised that:

H10: There is a positive association between the level of forward-looking information and analyst following.

Leadership

Institutional theory suggests that the existence of a dominant firm with a high level of disclosure in a particular industry makes it a leader in the industry. McPeak and Tooley (2008) showed that the leader of Corporate Social Responsibility (CSR) reporting performs better financially than non-leader. Furthermore, they highlighted how, as the company produces more innovative ways to weave CSR into their business strategy, there is an increase in their competitive advantage and also improvement in their long-term financial outlook. Therefore, leader companies provide more information in order to protect their position. Melnik et al. (2005) pointed out that the measure of leadership is critical, because there is no clear definition of leadership. Scherer (1980) mentioned the importance of market share for each single firm without proposing any threshold for market leadership. Nevertheless, some econometrics has argued

that a measurement of leadership requires a firm to have at least half of the sales in the industry to be defined as a leader. In practice, a firm can still be a leader even if it has less than half of the sales of the market. This may happen if other firms in general and the second largest firm, in particular, are small by comparison to the leading firm (Melnik et al., 2005). The concept of leadership requires a quantitative measurement in order to distinguish between concentrated markets with the leading firm and a market where no firm has dominance (Melnik et al., 2005). Market dominance depends upon the company size, the number of firms in the industry, the size of other firms in the same industry, and the number of product units sold in the market. We hypothesise that:

> *H11: There is a positive association between the level of forward-looking information and leadership.*

It is worth noting that in the current study, leadership is measured by determining the market share for each company. The market share is measured by the ratio of firm sales to industry sales. Industry sales are employed using the Industry Classification Benchmark system, as given by the London Stock Exchange (LSE), and the classification of the top 500 UK listed firms by total market capitalization, as listed by the *Financial Times* UK 500 on 30 March 2007. Melnik et al.'s (2005) equation (1) is used to measure leadership:

$D = [1/2(1+1/N)]^2 - [1-1/2(1+1/N)-(N-2)/Q]^2$ ……………equation (1)

Where:

D = leader

Q: number of product units sold in the market

N = number of companies in the industry

However, if the number of units sold in the marker is very large, (N-2)/Q approaches zero; hence, the new equation is:

$D = 1/N$ …………………………………………………equation (2)

Equation (2) is used to determine the market share for the leader. That is, if the market shares are above 1/N for each industry, then the company is considered as a leader; otherwise it is considered to be a non-leader. A categorical variable is used to determine whether a company is a leader in the industry or not.

Change in OFR Regulation

It has been argued that corporate provision of information should be regulated to ensure that external users receive at least the minimum amount of information (Darus and Taylor, 2007). Companies must comply with government rules and regulations; otherwise, these companies will be punished for non-compliance. Based on institutional coercive isomorphism, external factors such as government regulation enforce organisations to adopt internal structures and procedures (DiMaggio and Powell, 1983). Organisations may view regulatory pressures as a force or persuasion to confirm expected behaviour (DiMaggio and Powell, 1983; Greening and Gray, 1994). By contrast, the perspective which is opposed to regulation argues that, due to competitive capital pressure, the provision of additional information by companies is more likely to attract investments at a lower cost. Johnson et al. (2001) examined the impact of the Private Securities Litigation Reform Act on the disclosure of earnings and sales forecasts for high technological firms. The results indicated that the Act increased the number of firms' issued forecasts. In regards to the change in FL regulations, the government issued statutory statement in April 2005 which introduced the OFR requirement. All listed companies are required to produce a statutory OFR for the reporting period beginning on or after 1 April 2005. Unfortunately, the government cancelled the mandatory disclosure on 12 January 2006 and issued a statement of best practice of OFR, which is intended to have persuasive rather mandatory force. This study focuses on 2004-2006 period, since this time presents an important period of changes in regulation that might affect the level of voluntary disclosure of FL information. Thus, consistently with institutional theory and previous studies, it can be hypothesised that:

> *H12: There is a positive association between the level of forward-looking information and the change in OFR regulation.*

4. Data and Methodology

4.1. Data and Variables

Similar to the data have been used by Abed et al. (2014), the current study employs the same dataset. The population consists of the top 500 UK listed firms by total market capitalization as listed by the *Financial Times* UK 500 on 30 March 2007. The final sample consists of 690 firm-observations. Similar to the method has been used by Al-Najjar and Abed (2014), Abed et al. (2014) and Abed at al. (2015), the extent of voluntary disclosure of forward-looking information for each company is based on the

automated content analysis received by that company. The dependent variable consists of the number of forward-looking text units in annual report narratives. computerised content analysis using QSR NVivo 8 software is chosen to perform coding for the large sample. It appears that using a computerised content analysis, while involving considerable set-up costs, has the potential to offer significant time savings when applied to a relatively large sample of narratives. Table 1 summarises the independent variables used in this study and the proxies used in the primary regression models.

INSERT TABLE 1 HERE

4.2. Research Design: The Extent of Forward-Looking Disclosure

The current study employs a pooled regression model to test the study hypotheses. The pooled Ordinary Least Squared (OLS) regression includes year-specific intercepts is used to reflect the fact that the population may have different distributions in different time periods; the intercepts are allowed to differ across years. This is accomplished by including dummy variables for all but one year. A pooling of data requires several assumptions to be valid; all pooled models discussed in the literature assume that explanatory variables are non-stochastic and errors are independent. The following model summarises the adopted approach in the empirical analysis in order to examine how firm characteristics affect the level of FL information.

Level of forward-looking disclosure = f (information asymmetry variables, institutional variables, and control variables)

As previously mentioned, a multivariate pooled OLS regression is used to examine the determinants of forward-looking information. The model controls for the time period by adding two year-end dichotomous variables. The first is (YearEnd 04) that takes the value of 1 for the 2004 year-end firm observations, and 0 for the 2005 and 2006 year-end firm observations. The second is (YearEnd05) that takes the value of 1 for the 2005 year-end firm observations, and 0 for the 2004 and 2006 year-end firm observations..

5. Results

The analysis of the voluntary disclosure of forward-looking information for the sample of 690 UK non-financial companies covers the narrative sections of the annual reports for the 2004-2006 period. Panel A in Table 2 provides the descriptive analysis for the number of voluntary disclosures of forward-looking text units (FLTUs) exported by NVivo software.

INSERT TABLE 2 HERE

It can be seen in this Table that, on average companies provide 80.33 text units related to forward-looking information, and the range is from a minimum of 16 to a maximum of 322 text units. Moreover, this Table reveals that FLTU is not normally distributed as indicated by skewness and kurtosis tests. The rule of thumb for a normality test based on skewness and kurtosis analysis indicates normality with a skewness of ± 1.96 and a kurtosis of ± 2 (Cooke, 1989), but the FLTU in the current study is found to have a skewness of 1.55 and a kurtosis of 3.19, which means that the data set is negatively skewed. This result is confirmed by a non-parametric Kolmogorov-Smirnov normality test (K-S), which is conducted to test the violation of the normality assumption. The value of K-S (Lilliefors) with a significance of < .200 indicates a reason to doubt normality.

When the dependent variable violates normality, data transformations steps are undertaken. This is performed by normalising the dependent variable using a natural logarithm. Panel B in Table 2 presents the descriptive analysis for the voluntary disclosure of forward-looking information after transformation of the dependent variable using the natural logarithm. Panel B in Table 2 shows that the transformation of forward-looking text units leads to a mean of 4.22 and a standard deviation of 0.57, with a skewness of -0.07 and a kurtosis of -0.21. This means that the problem of normality in terms of skewness and kurtosis no longer exists. This result is also supported by the Kolmogorov-Smirnov test. Table 3 provides a summary of descriptive statistics for the continuous independent variables used in the multivariate analysis. This Table reports the descriptive analysis for pooled data across the three-year sample period.

INSERT TABLE 3 HERE

Table 4 presents the Pearson correlations for the variables used in multivariate regression analysis. The rule of thumb for checking for a collinearity problem involves looking for such a problem when the correlation is more than 0.80 (Gujarati, 1995). No High correlation is found among the variables and hence multicolinearity is not of a concern in our models.

INSERT TABLE 4 HERE

In order to test whether the extent of voluntary disclosure of FL information among UK non-financial companies is significantly associated with variables identified under information asymmetry characteristics, institutional variables, and control variables, a pooled OLS regression analysis is performed using the Limdep 7 econometric software package. Four separate regression models are performed based on the untransformed model and on different forms of transformed models; this is done

using natural logarithm of the dependent variable[1] [2], normal scores, and ranking.[3] Table 5 provides a summary of the results of these regression analyses.

INSERT TABLE 5 HERE

The reported results of pooled OLS regressions in Table 5 indicate that different transformation models yield quite similar results in terms of both the significance of variables and the adjusted R^2. In the case of the standard OLS, untransformed model (1), this model is highly significant (F = 20.18 P-Value = 0.000) with an adjusted R^2 0.352. That is, the combination of independent variables explains 35.2 % of the variation in the voluntary disclosure of forward-looking information between companies. Blockholding of 5 % or more, competition rate, cross-listing, growth opportunities, and size are found to be highly significant at the 1% level. Analyst following and leadership are found to be significant at the 5%. The audit committee ratio is found to be significant at the 10% level. Therefore, the null hypotheses that the coefficients associated with these variables are not significantly different from zero are rejected.

Table 5 presents the results of multivariate pooled regression analysis examining the determinants of voluntary disclosure of FL information.[4] In terms of a proxy for growth opportunities, as predicted, BVMV (t = -3.460) is negative and significant, consistently with H1, which indicates that the inverse to BVMV is positively related to the disclosure of FL information. This result is also consistent with the arguments that growth firms have greater information asymmetry and more agency costs (Smith and Watts, 1992; Gaver and Gaver, 1993); hence, disclosure of additional information may reduce the level of information asymmetry. This finding is also consistent with previous studies (Cahan and Hossain, 1996; Hossain et al., 2005; Abad et al., 2008; Athansakaou and Hussainey, 2009).

With respect to the independence of the audit committee, as predicted, and consistently with H8, a positive and significant relationship between FL disclosures and the audit committee ratio is found to be consistent with agency theory, which predicts that the existence of an audit committee reduces agency cost. This result is also consistent with previous studies by Karamanous and Vafeas (2005) and O'Sullivan et al. (2008).

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[1] The normal score is performed for the dependent variable using natural logarithm.
[2] The regression results of normal scores using a natural logarithm and normal scores using Van dar Waerden reveal exactly the same results.
[3] Normal and rank scores are involved in the transformation of both the dependent and the continuous independent variables.
[4] The coefficient and P-value of the regression results relies on Model (1).

As for ownership structure, shareholding of 5% or more is found to be significant, as predicted, consistently with H9 and the agency theory prediction that substantial shareholders are expected to have close relationship with managers which help them to have full access to internal information. In other words, firms with more concentrated ownership are less likely to provide FL information, because they have low agency cost. Moreover, this result is consistent with the prior studies, such as those by Cahan and Hossain (1996) and O'Sullivan et al. (2008).

In terms of the competition rate, as predicted, positive and significant relationship between FL information and the competition rate is found to be consistent with economic theory and the "structure-conduct-performance hypothesis", which assumes that highly concentrated markets are less competitive than markets in which many small firms operate. The significance of the competition variable implies that companies belonging to a particular sector facing serious competition disclose more, rather than concealing information in order to reduce the risk of a competitive disadvantage. This result is inconsistent with those of Kent and Ung (2003), Abad et al. (2008), and Athansakaou and Hussainey (2009) who failed to find significant association between competition rate and the voluntary disclosure of forward-looking information.

However, leverage (t = -1.501) is negative and insignificant, inconsistently with H2 and inconsistently with O'Sullivan et al. (2008), Aljfri and Hussainey (2007), and Abad et al. (2008). A possible reason for this is because UK corporate debt is predominately private (Ball et al., 2000). Thus, private debt reduces information asymmetry between managers and lenders; in this case lenders are more likely to have a close relationship with managers, providing them with the required information without publishing such information in the annual reports; hence, this reduces agency costs (Richardson, 2000). Moreover, consistently with Cahan and Hossain (1996) and Kent and Ung (2003), the result demonstrates that there is no significant relationship between capital need and the disclosure of forward-looking information. However, this result is in contradiction to prior studies that have found a positive relationship between FL information and external finance (e.g., Clarkson et al., 1994; Frankel et al., 1995; Clarkson et al., 1999; Hossain et al., 2005; Bozzolan and Ipino, 2007). A possible reason for this is because companies with a need for external fund may disclose additional information on press releases, conference calls, interim reports, or other media without waiting until the announcement of their annual reports.

Additionally, firm performance (t = -0.664) is negative and insignificant consistently with Clarkson et al. (1999), but inconsistently with Celik et al. (2006), Bozzolan and Mazzola (2007), Aljifri and Hussainey (2007), and Athansakaou and Hussainey (2009), which indicates that companies with bad news try to disclose more information to reduce the litigation cost as well as to protect their reputation in the market. Moreover, this result is inconsistent with Cahan and Hossain (1996), who found a strong positive relationship between performance and FL information. In term of OCF, the result shows that there is a positive and insignificant association (t = 1.571). This result is consistent with Adhikari and Duru (2006), but inconsistent with Wasley and Wu (2006) who find a significant positive relationship. For earnings volatility (t = .335), while of the correct sign, is insignificant inconsistently with Miller and Piotroski (200) and Kent and Ung (2003). A possible reason for this is because sometimes a company with bad news tries to disclose information earlier in order to reduce the effects of litigation costs.

In terms of institutional variables, as predicted, leadership (t = 2.999) is positively and significantly consistent with institutional theory, which states the existence of dominant firm with high level of disclosure in a particular industry makes it a leader in that industry. Prior literature has theoretically argued concerning the importance of leadership in disclosures studies. For analyst following variable as predicted (t = 2.412) is positively and significantly consistent with normative isomorphism; institutional theory suggests that companies comply with the recommendation of external institutions such as professional bodies. This result is constant with the literature (e.g., Clarkson et al., 1999; Miller and Piotroski, 2000; Walker and Tsalta, 2001). For changes in OFR regulation (t = 0.163) is positively but insignificantly consistent with the mechanism of coercive isomorphism in institutional theory. A possible reason for this result is that, in the case of compulsory regulation, companies may be less likely to provide additional information in order to reduce the risk of litigation in the event of a failed prediction.

The results also show that company size is positively related to voluntary disclosure of FL information, consistently with previous studies (e.g., Clarkson et al., 1994; Cahan and Hossain, 1996; Clarkson et al., 1999; Miller and Piotroski, 2000; Johnson et al., 2001; Walker and Tsalta, 2001; Kent and Ung, 2003; Vanstraelen et al., 2003; Hossain et al., 2005; Celik et al., 2006; Bozzolan and Ipino, 2007; Bozzolan and Mazzola, 2007; Abad et al., 2008; Beretta and Bozzolan, 2008), but inconsistent with O'Sullivan et al. (2008). For cross-listing, as predicted, (t = 3.915) is positive and significant consistent with Vanstraelen et al. (2003), but it is inconsistent with Clarkson et al. (1999) and Abad et al. (2008).

6. Sensitivity Analyses

Additional regression models are performed using different proxies for independent variables in order to ensure that multivariate results are robust to a different combination of independent variable proxies. The regressions are repeated using alternative specifications for Competition Rate

Table 6 reports the results of multiple regression analysis using the ratio of fixed assets to total assets as proxy for price competition. The result shows a negative but insignificant relationship between the fixed assets ratio and voluntary disclosure of FL information. This result is consistent with proprietary cost theory. The regression result for both transformed and untransformed models reveal that leadership is no longer significant based on the new combination of independent variables. In terms of transformed model, analyst following is positively and significantly related to FL information.

INSERT TABLE 6 HERE

Finally, we use free float rather than blockholding of 5% or more, as a proxy for ownership and report the results in Table 7. For both the untransformed and the transformed models, the results reveal that free float is positively and significantly related to the extent of forward-looking information. The regression results for other variables reveal similar inferences to those obtained by the primary regression models.

INSERT TABLE7 HERE

7. Conclusion and Limitation of the Study

This study examines the determinants of FL disclosure for the 2004-2006 period. This time window incorporates pure voluntary disclosure in 2004, mandatory disclosure for the time period spanning 1 April 2005 to 12 January 2006, and another period of voluntary disclosure in 2006.

Previous studies of forward-looking information have concluded that companies provide additional information to reduce information asymmetry. This theoretical perspective considers forward-looking disclosures as part of a company's overall voluntary disclosure practices. Nevertheless, the unique features of forward-looking information suggest a trade-off beyond the typical factors considered by economic theories. Gray (1988), Cooke and Wallace (1990), and Adams et al. (1998) argued that regulations themselves, changes in regulations, and reporting practices are subject to both internal and

external factors. In the same context, DiMaggio and Powell (1983) highlighted that disclosure practices might be affected by coercive, mimetic, and normative isomorphism. Based on this discussion, this study proposes a multi-theoretical framework based on information asymmetry and institutional theories to identify potential new determinants of voluntary disclosure of forward-looking information.

The results document that proxies for information asymmetry characteristics and institutional variables are important factors in explaining the extent of forward-looking information. Specifically, the extent of FL disclosure is found to be positively and significantly related to growth opportunities, audit committee, and competition rate, but it is negatively and significantly related to blockholding of 5% or more. This seems to support information asymmetry theories which suggest that companies provide additional information to reduce information asymmetry and agency cost. Furthermore, the extent of FL disclosure is found to be positively and significantly related to leadership and analyst following. This seems to support institutional theory. Firm size and cross-listing are also found to be positively and significantly related to the extent of FL information.

The first limitation of the current study is that the extent of voluntary disclosure of FL information based on automated content analysis is limited to the list of forward-looking keywords presented in the study. One of the underlying assumptions of this methodology is that more voluntary disclosure may exist in the narratives, but it has not been included in the study. This study also limits narrative disclosure and ignores non-narrative forms of disclosure, such as tables, figures, and images. However, the disclosure scores used in this study imply that more disclosure is better. This may not be correct and future research may develop a new proxy for the quality of disclosure. Moreover, this study focuses on voluntary disclosure of forward-looking information in the annual report narratives, since annual reports are considered to be the best communication media. Despite the fact that the annual reports suffer from a lack of timelines, since many value relevant events are reflected in stock prices as soon as the information reaches the market while their influence on reported earnings often occurs with a time lag.

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Table 1 Summary of Independent Variables and their Measures

Independent Variables	Measures
Variables of the Study	
(a) Information Asymmetry Variables	
Growth opportunities	Firm i's equity capital and reserves at the end of t (DS 305) to market value at the end of t (DS MV).
Leverage	Firm i's total debt at the end of t (DS 1301) to total assets at the end of t (DS 392).
Performance	Firm i's published after tax profit at the end of t (DS 623) divided by total assets at the end of t (DS 392).
Earnings volatility	Firm i's published after tax profit at the end of t (DS 623) minus firm i's published after tax profit at the end of t-1 (DS 623) divided the difference by firm i's published after tax profit at the end of t-1 (DS 623).
Operating cash flow to lagged total assets	Firm i's cash in operating activities at the end of t (DS 1015) divided by total assets at the end of t-1 (DS 392).
Capital need	Firm i's equity capital and reserves at the end of t (DS 305) minus firm i's equity capital and reserves at the end of t-1 (DS 305), the difference deflated by total assets at the end of t (DS 392)
Competition rate	Firm i's four sales concentration ratio measured by total sales of the four largest firms in the industry at the end of t (DS 104) divided by the total of industry sales at the end of t (DS 104). The distinction between industries based on the Industry Classification Benchmark system is given by the London Stock Exchange (LSE).
Audit committee	The percentage of independent non-executive directors on the audit committee.
Blockholding of 5% or more	The percentage of total shares in issue held strategically at the end of t (DS NOSHST).
Institutional Variables	
Analyst following	The number of analyst following the company in FACTSET Excel Connect Database at the end of t.
Leadership	A dichotomous variable equal to 1 if the firm i market shares is above 1/N (N= number of companies in the industry), and 0 otherwise
Change in OFR Reg.	A dichotomous variable equal to 1 if the firm i year-ends during changes in OFR regulation (1 April 2005-12 January 2006), and 0 otherwise.
Firm specific Variables	
Company size	The natural logarithm of total sales at the end of t (DS 104).
Cross-listing	A dichotomous variable equal to 1 if the firm i is cross-listing on the US NYSE or NASDAQ, and 0 otherwise.
Year-end 2004	A dichotomous variable equals 1 for the 2004 year-end firm observations, and 0 otherwise.
Year-end 2005	A dichotomous variable equals 1 for the 2005 year-end firm observations, and 0 otherwise

Table 2 Descriptive Analyses of the Extent of FLTUs before and after Transformation

	Panel A	Panel B
Descriptive analysis	FLTUs	LN FLTUs
Mean	80.33	4.22
Standard Deviation	48.80	0.57
Median	68.00	4.22
Minimum	16.00	2.77
Maximum	322.00	5.77
Kurtosis	3.19	-0.21
SE Kurtosis	0.205	0.21
Skewness	1.55	-0.07
SE Skewness	0.10	0.10
Kolmogorov-Smirnov a (Lilliefors)	0.12	0.03
K-S Significance	0.000	0.200*

FLTUs = forward-looking text units; LN FLTUs = natural logarithm of forward-looking text units.

[a]. Lilliefors Significance Correction.
* This is a lower bound of the true significance

Table 3 Descriptive Analysis: Continuous Variables

Variables	Mean	Median	Std. Deviation
BVMV	.3768	.3387	.2989
LEV	.2631	.2132	.3546
ROA	.0646	.0564	.1009
COMP	.4369	.3083	.2398
AUDCOM	.9609	1.000	.1237
EV	.5433	.1636	6.310
OCF	.1238	.1065	.1446
CAPNEED	.0300	.0321	.2083
NOSHST	40.13	42.00	21.06
ANFL	12.56	11.00	10.91
Size	13.50	13.55	1.880

Where BVMV = growth opportunities; LEV = leverage; ROA = performance; COMP = competition rate; AUDCOM = audit committee ratio; EV = earnings volatility; OCF = operating cash flow to lagged total asset; CAPNEED = capital need; NOSHST = blockholding of 5% or more; ANFL = analyst following; Size = ln sales

Table 4 Pearson Correlations: Pooled Data

	BVMV	LEV	ROA	EV	OCF	CAPNEED	NOSHST	ANFL	LEAD	REG	AUDCOM	Size	CrossList	COMP
BVMV	1	-.134** (.000)	-.127** (.001)	.030 (.451)	-.157** (.000)	.127** (.001)	-.020 (.609)	.007 (.856)	-.029 (.446)	.022 (.570)	.078* (.042)	.081* (.033)	-.004 (.920)	.040 (.300)
LEV	-.134** (.000)	1	.191** (.000)	.009 (.825)	.330* (.000)	-.171** (.000)	-.064 (.095)	.063 (.111)	.024 (.525)	-.018 (.641)	-.018 (.640)	.188** (.000)	.146** (.000)	.101** (.008)
ROA	-.127** (.001)	.191** (.000)	1	.028 (.493)	.631** (.000)	.046 (.224)	-.004 (.919)	-.088* (.025)	.022 (.561)	.026 (.492)	-.006 (.885)	.183** (.000)	.079* (.037)	-.038 (.313)
EV	.030 (.451)	.009 (.825)	.028 (.493)	1	.018 (.645)	.083* (.039)		-.033 (.434)	-.054 (.179)	-.038 (.343)	-.019 (.639)	.004 (.912)	-.039 (.333)	.002 (.966)
OCF	-.157** (.000)	.330** (.000)	.631** (.000)	.018 (.645)	1	.041 (.280)	.022 (-.560)	-.076 (.054)	.019 (.625)	-.019 (.618)	-.044 (.255)	.150** (.000)	.121** (.002)	.082* (.031)
CAPNEED	.127** (.001)	-.171** (.000)	.046 (.224)	.083* (.039)	.041 (.280)	1	.053 (.170)	-.048 (.223)	-.044 (.253)	-.026 (.491)	-.089* (.021)	-.078* (.040)	.007 (.851)	.054 (.161)
NOSHST	.021 (.589)	-.064 (.095)	-.004 (.919)	-.017 (.683)	.022 (.560)	.053 (.170)	1	-.054 (.171)	-.112** (.003)	.267** (.000)	-.059 (.125)	-.094* (.014)	-.070 (.066)	-.103** (.007)
ANFL	.007 (.856)	.063 (.111)	-.088* (.025)	-.033 (.434)	-.076 (.054)	-.048 (.223)	.055 (.166)	1	.203** (.000)	-.044 (.269)	.091* (.021)	.112** (.004)	.121** (.002)	.134** (.001)
LEAD	-.029 (.446)	-.054 (.179)	.022 (.561)	.024 (.525)	.019 (.625)	-.044 (.253)	-.112** (.003)	.203** (.000)	1	-.009 (.818)	.107** (.005)	.581** (.000)	.231** (.000)	-.075* (.049)
REG	.022 (.570)	-.018 (.641)	.026 (.492)	-.038 (.343)	-.019 (.618)	-.026 (.491)	-.267** (.000)	-.044 (.269)	-.009 (.818)	1	.022 (.564)	-.019 (.627)	-.048 (.203)	-.062 (.106)
AUDCOM	.078* (.042)	-.018 (.640)	-.006 (.885)	-.019 (.639)	-.044 (.255)	-.089* (.021)	.059 (.124)	.091* (.021)	.107** (.005)	.022 (.564)	1	.055 (.151)	.071 (.064)	.084* (.028)
Size	.081* (.033)	.188** (.000)	.183** (.000)	.004 (.912)	.150** (.000)	-.078* (.040)	-.094* (.014)	.112** (.004)	.581** (.000)	-.019 (.627)	.055 (.151)	1	.178** (.000)	-.067 (.076)
CrossList	-.004 (.920)	.146** (.000)	.079* (.037)	-.039 (.333)	.121** (.002)	.007 (.851)	-.071 (.065)	.121** (.002)	.231** (.000)	-.048 (.203)	.071 (.064)	.178** (.000)	1	.213** (.000)
COMP	.040 (.300)	.101** (.008)	-.038 (.313)	.002 (.966)	.082* (.031)	.054 (.161)	-.103** (.007)	.134** (.001)	-.075* (.049)	-.062 (.106)	.084* (.028)	-.067 (.076)	.213** (.000)	1

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 7.6 presents Pearson correlation for regression variables examining the extent of voluntary disclosure of forward-looking information. The correlation matrix uses a sample of 690 firm-years observations. P-values are given in parentheses. Variables definitions: BVMV = growth opportunities; LEV = leverage; ROA = performance; EV = earnings volatility; OCF = operating cash flow; CAPNEED = capital need; NOSHST = blockholding of 5% or more; ANFL = analyst following; LEAD = leader in the industry; REG = change in OFR regulation; AUDCOM = audit committee ratio; Size = Ln sales; CrossList = cross-listing; COMP = competition rate

Table 5 Results of Pooled OLS Regression Analyses of Determinants of Voluntary Disclosures of FL Information

Independent variables	Untransformed (1)	Transformed (dep) (2)	Normal scores (3)	Ranked (4)
Intercept	-35.020	2.976	-0.056	226.450
	-1.438	9.759***	-0.717	5.048***
BVMV	-21.760	-0.274	-0.157	-0.174
	-3.460***	-3.513***	-3.889***	-4.193***
LEV	-9.867	-0.035	-0.026	-0.032
	-1.501	-0.449	-0.670	-0.808
ROA	-14.24	-0.327	-0.054	-0.054
	-0.664	-1.178	-1.206	-1.153
EV	0.075	0.001	-0.171	-0.013
	0.335	0.260	-0.441	-0.297
OCF	26.020	0.204	0.014	0.018
	1.571	0.981	0.325	0.395
CAPNEED	-6.601	-0.066	0.015	0.026
	-1.262	-1.000	0.409	0.675
NOSHST	-0.373	-.004	-0.157	-0.132
	-3.577***	-2.961**	-3.154**	-2.445**
ANFL	0.587	0.004	0.104	0.075
	2.412**	1.482	2.273**	1.557
LEAD	15.070	0.195	0.136	23.160
	2.999**	3.285***	1.277	1.002
REG	0.956	1.366	0.932	15.690
	0.163	0.172	0.693	0.578
AUDCOM	19.160	0.439	0.156	0.196
	1.927*	2.733**	2.638**	3.004**
Size	6.236	0.059	0.283	0.289
	3.826***	3.099**	5.031***	4.977***
CrossList	28.570	0.238	0.323	48.22
	3.915***	3.253**	2.728**	2.074**
COMP	49.390	0.457	0.171	0.144
	5.751***	4.622***	4.106***	3.717***
YearEnd04	3.257	0.019	0.126	20.160
	0.677	0.295	1.146	0.899
YearEnd05	0.263	-0.003	-0.007	-11.930
	0.050	-0.377	-0.059	-0.464
Adjusted R^2	0.352	0.273	0.288	0.256
Model F Test	20.18 P-value = .000	14.28 P-value = .000	15.31 P-value = .000	13.16 P-value = .000

This Table presents the results of pooled OLS regression by examining the determinants of FL information. The above results are corrected for heteroscedasticity using White's heteroscedasticity-corrected variances and standard errors provided by LIMDEP; Model (1) Regression using untransformed data; Model (2) Regression using a transformed dependent variable only; Model (3) Regression using normal scores (van der Warden) for the dependent and independent variables; Model (4) Regression using ranked data; *** Significant at the 1% level ** Significant at the 5% level* Significant at the 10% level

Table 6 The Results of Pooled OLS Regression Analysis with Competition Rate

	Untransformed		Transformed	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	-58.443	-2.166	2.641	7.878***
BVMV	-23.992	-3.213**	-0.274	-2.969**
LEV	-12.831	-1.321	-0.015	-0.131
ROA	-22.648	-1.016	-0.415	-1.396
EV	0.058	0.247	0.000	0.111
OCF	22.934	1.078	0.221	0.808
CAPNEED	1.582	0.230	0.021	0.242
NOSHST	-0.402	-3.800***	-0.004	-3.106**
ANFL	0.736	2.593**	0.006	1.742*
LEAD	5.867	1.102	0.091	1.468
REG	-0.726	-0.123	0.052	0.661
AUDCOM	26.724	2.473**	0.512	3.132**
Size	9.116	4.827***	0.094	4.250***
CrossList	30.847	4.080***	0.242	3.335**
COMP	6.679	0.789	-0.001	-0.014
YearEnd04	3.020	0.621	0.020	0.308
YearEnd05	0.354	0.064	-0.026	-0.345
Adjusted R2	0.314		0.255	
Model F Test	17.10 P-Value = .000		13.02 P-Value = .000	

*** Significant at the 1% level; ** Significant at the 5% level; * Significant at the 10% level

Table 7 The Results of Pooled OLS Regression Analysis with Free Float

	Untransformed		Transformed	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	-71.731	-2.889***	2.568	8.375***
BVMV	-21.777	-3.464***	-0.274	-3.519***
LEV	-9.827	-1.491	-0.034	-0.442
ROA	-14.287	-0.666	-0.328	-1.179
EV	0.076	0.337	0.001	0.262
OCF	25.977	1.568	0.203	0.977
CAPNEED	-6.580	-1.257	-0.066	-0.996
NOSHFF	0.366	3.506***	0.0041	2.891**
ANFL	0.586	2.409**	0.004	1.480
LEAD	15.084	3.002***	0.196	3.288***
REG	0.941	0.160	1.363	0.171
AUDCOM	19.219	1.934*	0.440	2.738**
Size	6.235	3.822***	0.059	3.096**
CrossList	28.593	3.919***	0.238	3.257**
COMP	49.353	5.745***	0.457	4.618***
YearEnd04	3.116	0.649	0.017	0.265
YearEnd05	-0.451	-0.009	-0.031	-0.433
Adjusted R2	.351		.273	
Model F Test	20.14 P-value = .000		15.34 P-value =.000	

*** Significant at the 1% level; ** Significant at the 5% level; * Significant at the 10% level