View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Lancaster E-Prints

The effects of corporate governance on information disclosure, timeliness and market participants' expectations.

Wendy Beekes, Philip Brown, Germaine Chin and Qiyu Zhang*

This version: 1st August 2012

* Wendy Beekes is from Lancaster University, Philip Brown is from the Universities of New South Wales and Western Australia, Germaine Chin is from the University of Western Australia and Qiyu Zhang is from Lancaster University.

Address for correspondence:

Dr Wendy Beekes
Department of Accounting and Finance
Management School,
Lancaster University,
Lancashire
LA1 4YX

Email: w.beekes@lancaster.ac.uk
Tel: 44 (0) 1524 593623
Fax: 44 (0) 1524 847321

ACKNOWLEDGEMENTS

We are indebted to David Scott for his assistance in accessing the SEDAR website. We thank Steve Young, Ken Peasnell, Kwok Tong Soo for useful comments. This is a heavily revised version of the paper entitled 'Do Better-Governed Firms Make More Informative Disclosures? Canadian Evidence.' Earlier versions of this paper were presented at the Accounting and Finance Association of Australia and New Zealand conference, the Centre for Corporate Governance Research International Corporate Governance conference, the British Accounting Association Corporate Governance Special Interest Group Conference and the European Accounting Association Annual Congress. The authors would also like to acknowledge funding from the Leverhulme Trust (Grant reference: F/00 185/W - Corporate governance, disclosure policies and the timeliness of price discovery).

The effects of corporate governance on information disclosure, timeliness and market participants' expectations.

Abstract

Using a sample of Canadian firms for the period 2002-2007, we examine whether Corporate Governance (CG) has a significant influence on the frequency of firms' disclosures, the timeliness of price discovery or on market participants' (analysts') behavior in Canada. Our models use both aggregate and underlying measures of CG to help identify which particular aspects of CG are more influential. Our results suggest only certain components of CG are associated with the number of releases to the stock market and the timeliness of information discovery in firm's stock price. With regard to analysts' earnings forecasts evidence suggests better CG results in more informative disclosures; the aggregate CG measure is associated with greater forecast accuracy, lower dispersion in forecasts and greater analyst following. Our results confirm CG can play a significant role in determining the efficiency of a country's equity market.

JEL: G30; G38; M40.

Keywords: Corporate governance; Disclosure frequency; Analysts' forecasts; Price discovery; Timeliness

1. Introduction

A common response to Corporate Governance (CG) failure (e.g. BCCI in the UK, Enron in the USA) has been to increase disclosure requirements, typically accompanied by greater and more stringent CG expectations through new codes of good practice. CG refers to the structures and systems in place (both within and external to the firm) to reduce agency problems and align managers' interests with shareholders (Armstrong, Guay and Weber, 2010). How a firm is governed and monitored should therefore have an impact on its transparency and level of disclosure as potentially increased disclosure could be associated with a lower cost of capital (Hermalin and Weisbach, 2012). This paper seeks to provide further insight into the relationship between a firm's CG and the informativeness of disclosures to the market in Canada.

Our study builds substantially on preliminary work completed for Australian firms by Beekes and Brown (2006) by using a panel of data and improved estimation methods which provide more robust results. Canada is particularly appropriate to carry out our study as CG guidelines are similar to those adopted in Australia, in that they require compliance with the CG best practice recommendations or disclosure where these have not been followed, along with an explanation of why this is the case (Collett and Hrasky, 2005). Also the industry composition of listed Canadian firms includes many mining firms, similar to Australia, so incentives for firm disclosure should be similar in Canada. Also full and transparent continuous disclosure is expected by the Toronto Stock Exchange (Toronto Stock Exchange, 2004a).

Our key research question is 'does a firm's CG impact on the information flows to the market and are these information flows more informative?' We use a number of approaches to answer this question. Firstly we examine the frequency of corporate disclosures to the market with the expectation that firms with better[1] CG will release more information. However, acknowledging that this is not the only source of information about performance we examine the information content of a firm's stock price to investigate whether CG is associated with the speed with which value relevant information is integrated into share prices. The expectation is that firms with better CG will have more timely releases of information and thereby faster price discovery. Also, if information released by a firm with better CG is more credible then CG will impact on market participants' (i.e. analysts') beliefs about the firm's future performance. For this we examine the bias and accuracy in analysts' earnings forecasts, the dispersion in analyst forecasts (a measure of analysts' disagreement), and the number of analysts tracking the firm. We expect firms with better CG will be associated with greater analyst following and forecasts that are less optimistically biased, have greater accuracy with lower disagreement in forecasts across different analysts.

Using a sample of S&P/TSX composite index Canadian firms between 2002 and 2007, we confirm that certain elements of CG are important for firm's disclosure. Specifically we find that the structure of the board of directors and its committees, along with the balance in holding and voting rights on share capital and the board's decision output all positively influence the quantity of disclosure (as proxied by the number of documents released). Contrary to prior research results from Beekes and Brown (2006), we find little evidence to suggest that the timeliness of price discovery

is affected by CG in Canada. With regard to analyst earnings forecast properties, we find greater accuracy and greater consensus in forecasts for firms with better CG, whereas Beekes and Brown (2006) find better CG is associated with greater disagreement for their sample of Australian firms. Also Canadian firms with better CG do attract a larger following of analysts.

We contribute to the existing literature in several ways. First, we use a panel of data and fixed effects panel estimation methods to re-examine prior results in Beekes and Brown (2006) which was conducted using one year of CG data for Australian firms and Ordinary Least Squares Methods. Fixed effects panel methods used in this study have the advantage of enabling us to control for unobserved time invariant firm fixed effects and potentially offer more robust results. Second, using an index of CG developed by the Clarkson Centre for Business Ethics and Board Effectiveness we examine aggregate and specific aspects of CG. The CG indices are described in detail below and measure board independence, directors' ownership, board and board committee structure and voting rights, performance evaluation systems and board decision output. They are summarized in an overall index of CG. We are thereby able to examine particular components of CG to investigate which are more influential. Third, we examine Canada which is of particular interest due to the significant number of resource and financial firms, which represent a large proportion of the S&P/TSX composite index, and the large number of firms with concentrated ownership structures.

The paper is organized as follows: Section 2 discusses related literature and develops the hypotheses. This is followed by section 3 which describes the research method and data. Section 4 discusses our results and the final section concludes the paper.

2. Hypothesis Development

2.1 Corporate Governance in Canada

Until 2005, companies in Canada were required to disclose their compliance with 14 CG guidelines under Section 474 of the Toronto Stock Exchange Company Manual (Toronto Stock Exchange, 2003; 2004b). The CG guidance amongst other aspects indicates that (i) the board should be of an appropriate size and comprise a majority of independent directors, (ii) board committees (audit, compensation and nomination) should have exclusively outside director membership (and of these there should be a majority of independent outside directors), (iii) there should be a separate CEO and independent Chairman (or lead independent director) and (iv) there should be a policy of offering continuing education for directors (Toronto Stock Exchange, 2004a). This is comparable with CG guidance found in other countries (e.g. Australia and UK) and is adopted on a 'comply or explain' basis. In 2005, some minor changes were made to the guidance including clarifying the definition of independence of directors, and CG guidance is now under Section 472 of the Toronto Stock Exchange Company Manual.[2]

Given the similarity of CG guidance in Canada with many other countries, it is perhaps surprising that there has been relatively little research on CG in Canada; prior research on CG has tended to focus on the US. However Canada is of interest in its own right given the different sector composition of the stock market compared with

other countries, the level of cross-listing of Canadian firms on the major stock exchanges in the U.S.A., and the impact of ownership concentration. The evidence to date on the impact of CG in Canada has been mixed: Jog and Dutta (2004) find no evidence to suggest a link between CG and a firm's share market performance (as measured by returns, after controlling for industry and the market to book ratio). Wheeler and Davies (2006) find little evidence that CG is linked to changes in firm value for the largest Canadian firms on Toronto Stock Exchange. However, for a sub-sample of firms which increased their CG ranking during their sample period, they found a significant positive association with long-term changes in market capitalization. Klein, Shapiro and Young (2005) find evidence of a positive link between firm valuation (as measured by Tobin's Q) and overall CG.

Bujaki and McConomy (2002) study CG disclosures of TSE 300 firms and found that very few had adopted all of the CG best practice guidelines and there was a large variation in disclosure practices. They did however find a positive association between CG and disclosure for larger firms, highly levered firms and firms with more outside directors. We seek to provide further evidence on the link between CG and disclosure in Canada which, to our knowledge, has not yet fully been investigated in the literature.

2.2 Frequency and Timeliness of Disclosure

Frequent disclosure of information to the stock market is important to keep investors informed of firm performance and upcoming developments. Prior evidence has found that monitoring provided by CG is positively associated with firm disclosure levels (Beekes and Brown, 2006; Ajinkya, Bhojraj and Sengupta, 2005; Li, Mangena and

Pike, 2012) and poorly governed firms are associated with lower disclosure levels (Bassett, Koh and Tutticci, 2007; Ettredge, Johnstone, Stone and Wang, 2011). The Toronto Stock Exchange envisages a setting where "everyone investing in securities has equal access to information that may affect their investment decisions" (Toronto Stock Exchange, 2004a, 1) and "material announcements are factual and balanced." Therefore "unfavorable news must be disclosed just as promptly and completely as favorable news" (Toronto Stock Exchange, 2004a, 5). Clearly, compliance with the disclosure guidelines is important for firms and we would anticipate firms with better CG would be likely to disclose more information. Based upon this, we predict:

> *H_{1A}: Firms with better CG will be associated with greater disclosure of information to the stock market.*
>
> *H_{1B}: Firms with better CG will be associated with greater balance in disclosure (i.e. disclose both bad and good news) to the market.*

Timely disclosure of information is a requirement of listing and in addition to the guidance provided in National Policy 51-201 *Disclosure Standards*, the Toronto Stock Exchange also has a policy statement on the timeliness of firms' disclosures (Toronto Stock Exchange, 2004a). "Timeliness" in our paper refers to the speed with which value relevant information is incorporated into share prices. Managers are likely to wish to disclose impending bad news on a timely basis for fear of potential litigation of reputation costs if disclosures are not timely (Skinner, 1994). Prior research has shown Australian firms with better CG have value relevant information reflected on a more timely basis in their prices (Beekes and Brown, 2006). We predict that Canadian firms with higher CGQ are more forthcoming and balanced in

their disclosures (i.e. both good and bad news will have comparable timeliness), consistent with the CG guidelines, and are as a consequence priced more efficiently in the market, i.e., in a timelier fashion:

> *H_{2A}: Firms with better CG will be associated with more timely price discovery.*
>
> *H_{2B}: Firms with better CG will be associated with more balance in disclosures and good news will have comparable timeliness to bad news.*

2.3 Analyst Following and Analyst Forecast Properties

The level of disclosure by the firm and the increased credibility of disclosures by firms with better CG are likely to impact on market participants' (analysts') expectations. Prior literature has shown that if there is greater information disclosure, more institutional investors and analysts may be attracted to the firm (Lang and Lundholm, 1996; Botosan, 1997; Healy, Hutton and Palepu, 1999). The quantity of disclosure is positively related to analysts' earnings forecast accuracy (Hope, 2003; Vanstraelen, Zarzeski and Robb, 2003). In addition, the quality of these disclosures is important for the precision of forecasts (Byard and Shaw, 2003). There is already a building literature linking CG and forecast accuracy and results from Beekes and Brown (2006) and Byard, Li and Weintrop (2006) show CG is positively associated with analyst forecast accuracy.

However, evidence on the impact of information quality and quantity on the dispersion in forecasts is at best inconclusive; consensus in analyst forecasts may decline around earnings announcements as this provides analysts with incentives to

generate their own information (Barron, Byard and Kim. 2002; Barron, Harris and Stanford, 2005). Lang and Lundholm (1996) show that firms with more informative disclosure policies have less dispersed analyst forecasts. Nonetheless Australian firms with higher CG have been found to have greater dispersion (disagreement) in analysts' earnings forecasts (Beekes and Brown, 2006). Due to the conflict in prior evidence, we offer no hypothesis for the level of dispersion in forecasts.

Based upon the discussion above, we predict the following:

H_{3A}: Firms with better CG are associated with less optimistically biased forecasts

H_{3B}: Firms with better CG are associated with more accurate forecasts

H_{3C}: Firms with better CG are associated with greater analyst following

3. Data and Method

3.1 Sample and Data

Our sample period is from January 2002 to December 2007 as this predates the 2008 financial crisis and our CG measure has comparable underlying CG variable measures during this period. The firms included in our study are included on the S&P/TSX Composite Index (which is the headline index for Canadian firms) and rated on the Board Shareholder Confidence Index Report (BSCI)[3]. The BSCI reports contain CG ratings for firms on an annual basis. We use two datasets in our analysis: (i) Documents and Timeliness, which are on an annual basis and (ii) Analysts' forecast properties and following, which are on a monthly basis.

For the frequency of disclosure and timeliness data, the number of documents released is collected from the System for Electronic Document Analysis and Retrieval (SEDAR)[4], and daily share prices, returns and market index data are from Datastream. The date of the annual earnings announcement is sourced from Bloomberg, Compustat, Institutional Brokers' Estimate System (I/B/E/S), Reuters and Worldscope. Where there is a conflict in the announcement dates from these five sources, we take the earliest plausible date. Other financial and industrial sector data is obtained from Worldscope. The final sample for the frequency of disclosure and timeliness models includes 1,079 firm-year observations.[5]

For the analyst forecast and following models, we collect from I/B/E/S monthly forecasts for annual Earnings Per Share where at least 4 analysts contribute their forecasts for a horizon of between 1 and 11 months. Data for market values are sourced from Datastream, and financial data and industry classifications are from Worldscope. Firms traded on the Canadian option market are sourced from the Montreal stock exchange website. The final sample is 7,149 firm-month observations for the analyst models.[6]

3.2 Measuring Corporate Governance

We use the 2003 – 2008 annual BSCI reports to measure CG.[7] In addition to examining structures of CG such as the level of board and committee independence, the separation of the CEO and Chairman of the Board typical of other CG datasets, this dataset specifically controls for family ownership structures which result in differing holding and voting rights and is therefore particularly appropriate for a study of Canadian companies. In our analysis we assume that the current year CG report

relates to governance in place in the prior financial year and we match this data to the same period of financial data. The BSCI reports include an overall measure of CG (Total) where each company is ranked in the report from AAA+ (highest) to C (lowest), whereby AAA+ represents highest-quality CG structures and C represents the other extreme. We use the actual numeric deductions from the 100 points awarded (for 'perfect' CG) used in the BSCI as detailed in the glossary which accompanies the reports. This creates a non-linear scale increasing in CG quality.[8] In addition to an overall measure of CG, there are five underlying measures of CG which we use in our analysis. These measures are director independence (Indep), directors' stock ownership (Own), board and committee structure and share voting rights (Structure), individual and full board evaluation systems (System) and board decision output (Output).

Indep includes an evaluation of relationships between directors and management (i.e. whether they are affiliated with management), and the relationships between individual directors through board interlocks as well as how many directorships each individual director holds. Own evaluates the share ownership of directors relative to the size of their annual retainer. Structure examines the separation of CEO and Chairman roles, the independence of the audit and compensation committees, and the difference between voting and ownership rights of the share capital (often family owned firms retain control by holding just a few shares, due to different voting rights attached to their shares, Ben-Amar and André, 2006). System is concerned with the performance evaluation of the board of directors, as well as individual directors' performance assessment. Output examines the level of options granted, re-pricing of options and the increase in CEO compensation following a period of poor

performance. In addition, there is consideration of policies which are deemed not to be in shareholders' best interests such as the provision of loans and pensions to directors. For further details of the measurement of CG, see the Appendix. All measures of CG are constructed to be increasing in CG quality and therefore our hypotheses do not offer any specific predictions for the components of CG.

3.3 Frequency of Disclosure

In equation (1) below, the main coefficient of interest is CG. However, we also control for other factors which could influence firm disclosure. We control for firms with good news as they may be more likely to release information Lev and Penman (1990), and firm size (Size) since larger firms report more frequently than their smaller counterparts (Dye, 2001; Lang and Lundholm, 1993). In addition we control for volatility and leverage (Lev) since firms that are riskier because of their with more volatile performance or high leverage, may wish to keep market participants informed on a more regular basis by releasing a greater number of documents. Prior evidence from Ettredge, Johnstone, Stone and Wang (2011) suggests that omissions of firm disclosure are more likely when there is bad news than good news. Given this, and the Toronto Stock Exchange policy requesting balanced disclosure, we also test the expectation that firms with better CG may be more balanced in their disclosures and are more conservative in releasing information i.e. they release fewer documents relative to other firms when there is good news. We do this by interacting CG with the variable for good news performance (Goodnews·CG), see equation 1 below.

To control for time invariant firm fixed effects, we use fixed effects panel data estimation methods for our models. The model used to investigate the frequency of disclosure is:

$$Log\ Docs_{it} = \beta_0 + \beta_1 CG_{it} + \beta_2 GoodNews_{it} + \beta_3 Size_{it} + \beta_4 Volatility_{it} + \beta_5 Lev_{it} + \beta_6 GoodNews{\cdot}CG_{it} + \gamma_j + \lambda_t + \varepsilon_{it} \quad (1)$$

where:

Log Docs is the natural log of the number of documents released by the firm over the year ending 14 days after its annual earnings announcement date; CG is a measure of Corporate Governance; Good News is a Dummy variable which takes the value of one when the company's share price outperforms the market over the year and zero otherwise; Size is the natural log of total assets at the year-end; Volatility is the volatility in daily stock returns over the 90 days before the year's start; Lev is the firm's year-end leverage measured as total debt to total assets; Goodnews·CG is the product of Goodnews and CG; λ_t is a vector of year indicator variables; γ_j is a vector of firm fixed effects; and ε is the error term. We expect the coefficient on CG to be positive and the coefficient on the interaction term $GoodNews{\cdot}CG$ to be negative.

3.4 Timeliness of Price Discovery

We use the metric developed by Beekes and Brown (2006) to examine the timeliness of price discovery. Their metric traces the share price over 365 days ending 14 days after the firm's annual earnings announcement. Specifically, timeliness is defined as:

$$Timeliness = \frac{\sum_{t=-365}^{t=-1} |\ln(P_0) - \ln(P_t)|}{365} \quad (2)$$

where P_t is the daily market adjusted share price and day 0 is 14 days after the annual earnings announcement date.

The metric essentially measures how quickly the stock price reaches its terminal value (i.e. price on day 0); firms which take less time to adjust would have a timeliness value near to 0 (i.e. smaller values of timeliness are associated with more timely price discovery). Firms which take longer to release performance information throughout the year would have a greater value of timeliness, around 1 (i.e. are less timely). At the individual firm level the metric could be influenced by idiosyncratic share return volatility and to acknowledge this we use a measure of timeliness which is deflated by one plus the absolute rate of return on the share over period used to calculate the share's timeliness measure denoted Timeliness Deflated.[9] However, if companies release more timely information, the metric should capture this feature, insofar as it feeds into stock prices (Beekes and Brown, 2006).

Again we use fixed effects panel data methods to estimate our models. The model used to investigate the timeliness of price discovery is:

$$Timeliness\ Deflated_{it} = \beta_0 + \beta_1 CG_{it} + \beta_2 GoodNews_{it} + \beta_3 Size_{it} + \beta_4 Volatility_{it} + \beta_5 Lev_{it} + \beta_6 GoodNews{\cdot}CG_{it} + \gamma_j + \lambda_t + \varepsilon_{it} \quad (3)$$

Variables are as previously defined.

If firms with better CG have more timely price discovery, we would expect a negative coefficient on CG and if they are more balanced with respect to good news timeliness, the interaction term, $GoodNews{\cdot}CG$, will be positive (i.e. suggesting lower timeliness of good news relative to other firms). The models estimated are as described for the document models, although the dependent variable used is Timeliness Deflated.

3.5 Analyst Earnings Forecast Properties and Analyst Following

Firms with better CG may be perceived as releasing more credible disclosures. Therefore to investigate whether market participants (proxied by analysts) have superior knowledge about a firm with better CG due to their openness and greater transparency, we investigate the properties of analyst forecasts. We examine the bias (i.e. sign of forecast error) which can be positive (optimistic) or negative (pessimistic), accuracy (i.e. the absolute forecast error) and the level of dispersion (disagreement). We use the I/B/E/S consensus forecasts to calculate our measures of forecast properties. In addition, we evaluate whether analysts are more likely to track firms with better CG.

Equations 4a to 4d below are based upon Beekes and Brown (2006). In each model our primary interest is in the coefficient for CG. We control for firm size (Size) as analysts tend to make more accurate forecasts and disagree less often about the future earnings of larger companies. In addition, larger firms generally attract a greater analyst following (Bhushan, 1989). We control for the previous year's forecast error over the same forecast horizon (PrevFE) in the Bias model and its absolute value (ABS[PrevFE]) in the accuracy, disagreement and following models as prior year forecasting 'success' or otherwise may influence this year's forecasts (Michail, Walther and Willis, 1997). Our models also control for firms which have more volatile performance proxied by return volatility (Volatility) as it is more challenging to make future earnings predictions for such firms. In addition, we control for the length of the forecast horizon i.e. length of time in months until the earnings announcement (Horizon) as forecasts tend to improve nearer to the date of the earnings release because of the progressive release of information throughout the

year. We also control for firms traded on the options market (Option), which can provide incentives for analysts to uncover news about a particular firm (Beekes and Brown, 2006).

We include variables for analyst following and disagreement in the Bias and Accuracy models as they could indicate circumstances that reduce the level of bias and increase accuracy in forecasting. We also control for analyst following in the Disagreement model as greater analyst following could result in more consistent forecasts. However, it must be acknowledged that even when presented with the same disclosures, analysts may weight or interpret the information differently or generate additional private information, potentially resulting in greater divergence in beliefs (Barron *et al.* 2005; Kandel and Pearson, 1995; Bamber *et al*., 1999). Therefore it is entirely possible to have greater optimistic or pessimistic bias and less accuracy in forecasting, accompanied by increased disagreement in forecasts where there is greater analyst following.

$$Bias_{it} = \beta_0^a + \beta_1^a CG_{it} + \beta_2^a Log\ Following_{it} + \beta_3^a Disagreement_{it} + \beta_4^a Size_{it} + \beta_5^a PrevFE_{it} + \beta_6^a Volatility_{it} + \beta_7^a Horizon_{it} + \beta_8^a Option_{it} + \gamma_j + \lambda_t + \varepsilon \quad (4a)$$

$$Accuracy_{it} = \beta_0^b + \beta_1^b CG_{it} + \beta_2^b Log\ Following_{it} + \beta_3^b Disagreement_{it} + \beta_4^b Size_{it} + \beta_5^b ABS(PrevFE)_{it} + \beta_6^b Volatility_{it} + \beta_7^b Horizon_{it} + \beta_8^b Option_{it} + \gamma_j + \lambda_t + \varepsilon \quad (4b)$$

$$Disagreement_{it} = \beta_0^c + \beta_1^c CG_{it} + \beta_2^c Log\ Following_{it} + \beta_3^c Size_{it} + \beta_4^c ABS(PrevFE)_{it} + \beta_5^c Volatility_{it} + \beta_6^c Horizon_{it} + \beta_7^c Option_{it} + \gamma_j + \lambda_t + \varepsilon \quad (4c)$$

$$Log\ Following_{it} = \beta_0^d + \beta_1^d CG_{it} + \beta_2^d Size_{it} + \beta_3^d ABS(PrevFE)_{it} + \beta_4^d Volatility_{it}$$

$$+\beta_5^d Horizon + \beta_6^d Option + \gamma_j + \lambda_t + \varepsilon \quad (4d)$$

where:

Bias is the signed Forecast Error (FE). Forecast Error (FE) is defined as the mean forecast EPS less EPS as reported by I/B/E/S, deflated by the base share price (i.e. share price a year before the announcement month); Accuracy is the absolute value of the FE, deflated by the base price; Disagreement is the level of disagreement in forecasts measured by the standard deviation across analysts' forecasts for that firm-month, deflated by the base price; Log Following is the natural log of the number of analysts contributing to the consensus forecast; Size is firm size proxied by the natural log of the firm's year-end total assets; PrevFE is the prior year FE for the same firm and same forecast horizon, deflated by the previous year's base price; ABSPrevFE is the absolute value of PrevFE, deflated by the previous year's base price; Volatility is calculated from daily returns in the 90 days ended the day before the I/B/E/S forecast date; Option is a dummy variable coded 1 for firms with exchange-traded options, and 0 otherwise; Horizon is the forecast horizon, measured by the number of months from the forecast date until the company makes its annual earnings announcement to the Toronto Stock Exchange; and CG is as previously defined.

We expect a negative coefficient on CG in the Bias and Accuracy models and a positive coefficient on CG in the analyst Following models. We have no prediction for the sign of the CG coefficient in the Disagreement models.

4. Results

4.1 Descriptive Statistics

XX TABLES 1 & 2 XX

Descriptive statistics for our variables are presented in panel A of Table 1 for the frequency of disclosure and timeliness models. Companies in the sample released between 5 and 338 documents per year (Docs). Timeliness ranges from 0.02 to 2.11, with an average of 0.19. Timeliness deflated ranges from 0.02 to 0.67. Our aggregate measure of CG (Total) has an average value of 0.62 ranging from 0.25 to 1.00. Panel B of Table 1 shows the industrial sector distribution of our sample. Almost 30 per cent of our sample is from the Mining sector, 28 per cent from Manufacturing, 14 per cent from the Finance, Insurance and Real Estate sector and 14 per cent from the Transportation, Communications, Electric, Gas and Sanitary Services sector. All remaining sectors (Agriculture, Forestry and Fishing, Construction, Retail Trade, Services, and Wholesale Trade) each constitute less than 10 per cent of the sample.[10] The sector composition of our sample reflects the underlying importance of natural resource and financial companies in Canada and is therefore different from some countries (e.g. UK, USA) in this respect. We can observe that the Services and Wholesale Trade sectors have the greatest overall mean Total, although we have no prior expectations for this.

Table 2 shows the correlations for the frequency of disclosure and timeliness models. The number of documents released (Docs) is positively related with CG (Total) and firm size (Size). There are some differences in direction of the correlation for the individual components of CG (Indep, Own, Structure, System, Output) and Docs. The two timeliness metrics, timeliness and timeliness deflated are strongly correlated (r = 0.92). All measures of CG and Size are negatively correlated with both measures of timeliness.

XX TABLES 3 & 4 XX

Tables 3 panel A shows the descriptive statistics for the variables included in the analyst models and panel B shows the distribution of observations by sector and the mean sector CG for all CG variables. There is a small optimistic Bias in analyst forecasts relative to actual Earnings Per Share, with the mean Bias being about 0.3 per cent of the base share price. The absolute value of the forecast error (Accuracy) was on average 1.4 per cent of the base price. On average 9.6 analysts contributed to the I/B/E/S consensus forecast (Following). The mean value for Total is 0.65, although this ranges between 0.25 and 1.00, suggesting there are some significant differences in CG practices across firms in our sample. The Mining and Manufacturing sectors each represent 24 per cent of our sample, the Transportation, Communications, Electric, Gas and Sanitary Services sector in aggregate represent 19 per cent and the Finance, Insurance and Real Estate sector in aggregate represent 18 per cent (see Panel B, Table 3). All other industrial sectors each represent less than 10 per cent. The highest composite CG is in the Wholesale Trade sector.

Table 4 shows the correlations for the variables included in the analyst models. Bias and Accuracy are positively correlated (r = 0.40) (See Table 4). In addition, while Total is negatively correlated with Bias, Accuracy and Disagreement, it is positively correlated with Following. Some individual components of CG differ in the direction of correlation from Total and we will examine this further in multivariate analysis.

4.2 Frequency of Disclosure and Timeliness models

XX TABLE 5 XX

Table 5 reports the firm fixed effects panel regression results for the frequency of disclosure and timeliness models estimated with standard errors are clustered by firm to control for heteroskedasticity and within firm correlation in the residuals. All continuous regressors are standardized to have mean zero and standard deviation of one and for dummy variables, the mean value is subtracted, so that the constant term is the mean of the dependent variable.[11] Columns (1) – (3) report the results for the frequency of disclosure models and columns (4) – (6) report the results for the timeliness models.

From hypothesis H_{1A}, we predict firms with better CG will release more documents to the stock exchange. However in model (1) we do not find support for this hypothesis as Total is insignificant (Table 5, column 1). Inclusion of an interaction term between good news and CG in model (2) to test hypothesis H_{1B} signals that better governed firms are more conservative in releasing documents to the market when there is good news relative to other firms, as shown by the negative and significant coefficient on Goodnews·Total (Table 5, column 2). To understand which element of CG is driving our results, we re-estimate our model including all CG components and interact all CG components with good news. Our results (Table 5, column 3) show Structure and Output are positively associated with the quantity of disclosure. This is consistent with our expectation as firms rated highly on Structure and Output have more independent boards and board committees, with shareholders being in a position to vote on firm's activities (and to pressure the firm to disclose more information), along with appropriate share option and compensation packages for directors. The interaction terms show there is a lower disclosure for firms with good news which

have better systems and output. Our control variables are generally of the expected sign in all frequency of disclosure models.

Our models for timeliness use Timeliness Deflated as the dependent variable as an attempt to control for idiosyncratic share volatility which inflates the raw timeliness measure (Beekes and Brown, 2006). In addition, we also control for the firm's volatility in the regression. Recall, when value relevant information is incorporated into share prices more quickly, the timeliness metric is closer to zero. We expect firms with better CG to have more timely price discovery under hypothesis H_{2A}. We find no evidence to support our hypothesis in columns (4) or (5) using Total as our measure of CG. In the model using components of CG, only the interaction between Goodnews and Indep is negative and significant at 10 per cent, suggesting greater timeliness of good news when there is a more independent board inconsistent with hypothesis H_{2B} (Table 5, column 6). Our control variables are generally of the expected sign in all timeliness models. Overall our results suggest CG has little relationship with the timeliness of prices in Canada.

To test the robustness of our results, we complete a number of subsequent analyses. Firstly, to check for the influence of outliers on our results, we winsorize the continuous variables at the top and bottom 2.5 per cent of the distribution and re-estimate our results (not reported). We find results consistent to those reported above. Next, we estimate our models using different measures of firm size (natural log of market capitalisation at the year end and natural log of sales revenue) and results (not tabulated) are broadly consistent with those reported above, although there are some minor differences in significance in some coefficients. In addition, we re-code our

governance variable by converting the letter grade to a numeric scoring system, with 6 corresponding to AAA+ and 1 to C and re-estimate the models. The results (not tabulated) are generally consistent with those reported above. We also estimate the frequency of disclosure models using the raw document count as the dependent variable and Fixed Effects Poisson estimation methods and obtain consistent results. In addition, rather than using Timeliness Deflated we use the raw timeliness measure rather than Timeliness Deflated as the dependent variable and find comparable results.

Since our measure of disclosure does not take into account the importance or price sensitivity of the disclosure, we create a variable analogous to timeliness of prices for the documents released during the year ending 14 days after the earnings announcement. To do this we create a daily time series which has a value of 1 when at least one document was released and is zero otherwise. This daily time series is then converted into a cumulative time series. The timeliness of documents is then calculated as:

$$Timeliness\ of\ Documents = \sum_{t=-365}^{t=-1}(CD_t - CD_0)\,/(CD_0 - CD_{-366}) \qquad (5)$$

Where CD_t denotes the cumulative document count at the end of day *t*.

As Beekes and Brown (2007, p.17), "we then weight that document-day by the absolute value of the stock's log return that day, which reflects the price sensitivity of the documents. The daily time series of returns (which are zero on days when there is not any information released to the market) are cumulated so that all days in the series have a cumulative value." We then calculate the timeliness metric based upon this stream of returns. As Timeliness, smaller values of the Timeliness of Documents represent more timely disclosures.

Our results (not tabulated) show lower Timeliness of Documents for better-governed firms using Total. Using the components of CG, Output is associated with lower timeliness overall, but with respect to good news, Indep is associated with lower timeliness, and Own and System are associated with greater timeliness. This would suggest that firms trade off better CG against greater information timeliness except when it comes to good news, where less conservative tendencies can emerge.

We also check the robustness of our results to the sample used. The resource sector in Canada has specific disclosure requirements provided in *National Instrument 43-101 Standards of Disclosure for Mineral Projects* and the Toronto Stock Exchange provides specific disclosure guidance for mineral companies, which could have a bearing on our results (Toronto Stock Exchange, 2004c). However, two sample tests confirm that the Mining sector does not release more documents on average compared with the other sectors in our study (84 documents in mining versus 81 documents in other sectors on average, p= 0.2581)[12], although it does differ in terms of timeliness. The mining sector has less timely price discovery than other sectors (0.162 in Mining versus 0.119 in other sectors, p=0.001), as may be expected due to a desire to verify resource discoveries before release of information to the market. We also find evidence to suggest CG on average is statistically better in other sectors (0.561 in Mining versus 0.641 in other sectors, p= 0.005); the improvement in CG scores is driven by significant differences in Independence, System and Output. A large proportion (29 per cent) of the sample is from the Mining sector. Acknowledging these differences we exclude this sector from our estimations and re-estimate our

models on the remaining 757 observations. The results are comparable to those reported in Table 5.[13]

We collect data on US cross-listings for our sample from the Securities and Exchange Commission and the Bank of New York. Just over a third (37 per cent) of our sample is cross-listed on a major US exchange which could provide additional incentives for disclosure and timeliness. Two sample tests confirm that the cross-listed firms release significantly more documents on average than other firms (98 documents by cross-listed firms versus 72 documents by other firms, p= 0.001) as expected due to additional requirements from US exchanges when listing. There is also some evidence that price discovery is more timely (0.126 for cross-listed firms versus 0.136 for other firms, p= 0.075). Cross-listed Canadian firms also have better governance on average (0.688 for cross-listed firms versus 0.576 for other firms, p=0.001) which is driven by significant differences in all underlying aspects.[14] To rule out the potential impact of cross-listing on our results, we exclude such firms (leaving 682 observations remaining) and re-estimate of our models. We find broadly comparable results; of note however is for the frequency of disclosure models the coefficients on Output and Goodnews·Output increase in significance, and for the timeliness models, the coefficient on Goodnews·Output is negative and now significant at 10 per cent.[15]

In summary, boards with better structure and better output have greater disclosure overall in terms of the numbers of documents released, and firms with a better performance evaluation system or better decision output are more balanced in disclosures relating to 'good news' (i.e. they are more conservative in disclosure), consistent with our hypotheses. There is little relationship between CG and timeliness

of prices, although greater board independence is associated with a less conservative approach to information timeliness as reflected in the timeliness of prices when there is good news.

4.3 Analyst Models

XX TABLE 6 XX

The analyst models were estimated by firm fixed effects panel regressions with standard errors clustered by firm-year to control for heteroskedasticity and within firm-year correlation in the residuals. The results are shown in Table 6. All regressors are standardized as previously.

We expect firms with better CG will be associated with less optimistically biased forecasts which are more accurate and such firms will have greater analyst following. Our results for Bias (Table 6, columns 1 and 2) show no significant association with Total, but in the component model, Output is positive and significant, indicating analysts make more optimistic forecasts for firms with better Output, inconsistent with hypothesis H_{3A}. Accuracy (Table 6, columns 3 and 4) is greater with Total, as expected from hypothesis H_{3B}. In the component model, Indep is negative and significant, implying more independent boards are associated with greater Accuracy in analyst earnings forecasts, perhaps because such firms would be considered to be monitored more by independent directors, resulting in greater credibility in disclosure. Disagreement is lower for firms with better overall CG (column 5, Table 6) and this is largely due to better Output (column 6, Table 6). We find a significantly positive association between analyst Following and Total consistent with hypothesis H_{3C}, but no relationship for the components of CG (columns 7 and 8, Table 6). The control

variables are either largely in line with expectations or statistically insignificant, although it is noteworthy that in this sample greater analyst following is associated with more accurate forecasts and less disagreement.

To investigate the robustness of our results, we first winsorize the top and bottom 2.5 percent of the distribution for continuous variables and re-estimate the models. The results (not tabulated) for Total are consistent with those reported in Table 6. However, for the components of CG, some differences in significance are apparent, but the results are largely comparable, except for Own and System being associated with a more pessimistic bias.[16] Next we investigate the sensitivity of our results to alternative measures of firm size (natural log of year-end market capitalisation, natural log of total revenue) and find the results (not tabulated) are comparable to those reported in Table 6. Using the fixed effects Poisson estimation method for the analyst Following model (i.e. using the count of the number of analysts tracking the firm as the dependent variable), we observe comparable results.

We investigate the sensitivity of our results to the composition of the sample. Two sample tests show that the analyst earnings forecast properties and analyst following are statistically different for the Mining sector compared with the rest of the sample (p=0.001).[17] Exclusion of the Mining sector from the sample leaves 5,419 observations and results (not tabulated) are broadly consistent with those previously reported. Two sample tests show that all of the analyst earnings forecast properties and analyst following are statistically different for cross-listed companies compared with the rest of the sample (p=0.003 or better).[18] We exclude observations for cross listed sample firms which leaves 5,075 observations. Results (not tabulated) are

largely comparable with those previously reported except for the Following model, where Total is insignificant, although Indep is positive and significant at 5 per cent.

4.4 Endogeneity

To take account of potential endogeneity in CG, we re-compute our analysis using fixed effects instrumental variables methods. This requires us to identify instrumental variables which are contemporaneously uncorrelated with the error, but highly correlated with the regressor for which they serve as instruments (Kennedy, 2003, p.159). Selecting an appropriate instrument for CG is not without its challenges. Although some prior research has used prior year CG as an instrument for current year CG, this procedure may be inappropriate given the inertia (or stickiness) in CG structures in adjacent years (Brown, Beekes and Verhoeven, 2011). We use two instruments for firm CG in our models: average sector level of CG excluding the observation in question from the calculation, and the average year level of CG excluding the observation in question for the calculation. Interaction variables between good news and CG are also instrumented using an interaction between good news and the two chosen CG instruments. These instruments provide a benchmark of CG quality which firms may strive to attain; and although we do not expect a direct relationship between the error term in our models and the average industry CG or the average annual CG, we expect there are similar CG expectations for firms in the same industry and in the same year.

Our results (not tabulated) show that endogeneity is not a key concern; none of the frequency of disclosure and timeliness models and only the component model for Disagreement has a significant *p*-value in tests for endogeneity. Our instruments are

relatively robust according to the Hansen test. The results are comparable to those previously reported, and although the significance of some of the components of CG is sensitive to this estimation method, our conclusions are unchanged.

5. Conclusions

We investigate the influence of CG on the flow of information to the market in Canada for S&P/TSX Composite Index firms between 2002 and 2007. We use the Board Shareholder Confidence Index as our measure of CG. Our fixed effects models examine the overall aggregate CG for a firm, as well as underlying aspects such as the independence directors of the board, directors' share ownership, the presence of a separate CEO and Chairman and independent board committees, and comparability in share capital voting and ownership rights, director performance evaluation systems and the output from board decisions. We take a three-pronged approach to triangulate our findings and provide different insights into the relationship between CG and information flows.

This study uses a panel of CG data enabling fixed effects regression methods to be employed. Unlike Beekes and Brown (2006) who find greater disclosure and more timely price discovery for firms with better CG, we find aggregate CG has little relationship with disclosure frequency or timeliness of price discovery. However, this aggregate measure of CG masks the fact that individual CG aspects can 'pull in different directions'. Firms with better structure and board decision output with regard to director compensation are found to release more information. Also firms with more independent boards show less conservative tendencies to with regard to the timeliness of information disclosures when there is good news.

With regard to analyst following, we find a positive association between aggregate CG and the number of analysts following the firm. Consequently, analysts' earnings forecasts are more accurate and there is less dispersion (i.e. lower disagreement) in them. This is contrary to results from Beekes and Brown (2006) who find greater disagreement in analysts' forecasts for better-governed firms. Individual governance aspects show more independent boards are associated with greater forecast accuracy, but earnings forecasts firms with better board decision output are optimistic suggesting analysts overweight the credibility of information provided.

We attribute the differences between our study for Canada and Beekes and Brown's (2006) results for Australian companies to our better data and use of more robust estimation methods. We use a panel of CG data enabling panel data methods to be employed, whereas Beekes and Brown (2006) only use one year of CG data expecting this to be representative for their entire sample period. Our results are relatively robust to a number of alternative specifications and in particular, our tests indicate endogeneity is not a major problem in our study.

Our work contributes to a growing literature on CG and disclosure. Future work could investigate this idea in a cross country analysis to determine whether CG works similarly in countries with different legal frameworks and levels of investor protection. There could also be examination of whether the link between information disclosures and CG translates into more favourable cost of capital. However we leave these questions to future research.

Notes

[1] By 'better' we refer to the firm being more highly rated on the Board Shareholder Confidence Index measure of CG.

[2] CG guidelines are now provided in *National Policy 58-201 Corporate Governance* available on the internet at http://www.tmx.com/en/pdf/NP58-201_CGGuidelines_Apr15-05.pdf and guidelines for disclosure *Guidelines National Instrument 58-101 Disclosure of Corporate Governance Practices*. Companies are also provided with guidance by the Toronto Stock Exchange as to what represents good CG disclosure (Toronto Stock Exchange, 2006).

[3] The BSCI data is publicly available from the Clarkson Centre for Business Ethics and Board Effectiveness webpage http://www.rotman.utoronto.ca/ccbe/details.aspx?ContentID=211

[4] Mandatory corporate filings in the form of press releases, annual reports and financial statements are released via SEDAR in accordance with National Instrument 13-101. Therefore this could imply price sensitivity, as determined by Canadian securities authorities. Beekes and Brown (2006) focused on documents classified by the Australian Stock Exchange as price sensitive. However, they reported their results were not sensitive to the inclusion of both price and non-price sensitive documents in their models. Thus, the fact that some releases on SEDAR would not be price sensitive should be less concern.

[5] The 1,079 observations relates to 245 unique firms covered by the BSCI over our sample period. This is broken down across our sample period as follows: 2002: 166 firms, 2003: 182 firms, 2004: 183 firms, 2005: 191 firms, 2006: 186 firms; and 2007: 171 firms.

[6] In our sample, a firm may appear up to 11 times per firm-financial year as the data is on a monthly basis and there are 167 unique firms included in our sample. Observations across our sample period in calendar years is as follows: 2002: 1,000 observations, 2003: 1,181 observations, 2004: 1,204 observations, 2005: 1,193 observations; 2006: 1,310 observations and 2007: 1,261 observations. There are a relatively large number of cases where the same firm appears in our sample across a number of years.

[7] As in Aggarwal *et al.* (2011), where CG data is missing for a particular firm year, we forward and back-fill values of CG by 1 year to create a more complete panel of data for analysis. This procedure is justified by the stickiness in CG measures (Brown, Beekes, Verhoeven, 2011).

[8] In robustness testing, we transformed the letter grade to a numeric scoring system for data analysis, with 6 corresponding to AAA+ and 1 to C, and recalculate our results.

[9] We also run our models using the raw timeliness metric in sensitivity analysis and results are comparably similar.

[10] Due to the small number of observations for the Agriculture, Forestry and Fishing (N=6), and the Construction (N=2) sectors, we exclude these 8 observations from our models and find our results are unchanged.

[11] For interaction variables, first we normalise the continuous variable as described. Then we take the product of the dummy variable and the normalised continuous variable and subtract the mean of this new variable.

[12] This result is not entirely unexpected for the Mining sector. As Hermalin and Weisbach (2012) acknowledge that disclosure can be costly for firms and it could also give rival firms information about their competitive advance, providing disincentives for disclosure.

[13] We also run our models solely for the Mining sector (N=322) and find CG is insignificant in all frequency of disclosure models, but in the timeliness models Output is negative and significant at 10 per cent. Therefore CG appears to impact only on timeliness where there are additional requirements for disclosure, as in the Mining sector in Canada.

[14] This is to be expected as firms cross-listed on the US are required to follow more detailed stock exchange regulatory rules particularly post the Sarbanes-Oxley Act (2002).

[15] We run our results solely for cross-listed firms (N=397) and find the interaction between Goodnews and Total is negative and significant at 10 per cent for the frequency of disclosure models. In the timeliness models, we find Indep is positive and significant at 5 per cent and the interaction between

Indep and Goodnews is negative and significant at 5 per cent. Therefore for cross-listed firms timeliness is lower (greater) for bad (good) news where there is a more independent board. This perhaps suggests that there is a substitution relationship between timeliness and CG when a firm is cross-listed.

[16] The primary differences from results reported in Table 6 are as follows: Indep is insignificant in all analyst models implying directors' independence is unimportant in relation to analysts' forecasts and following. Own and System are associated with a pessimistic bias as predicted from hypothesis H_{3A}. Structure is associated with less disagreement, and Output is associated with more optimistic forecasts only.

[17] Estimation of results of the analyst models for Mining firms only (N=1,730) we find Own is associated with less forecast optimism, and independence is associated with greater analysts following but Structure is associated with fewer analysts tracking the firm.

[18] Estimating results for cross-listed firms only (N=2,074), we find Structure is associated with more optimistic forecasts and greater analyst following suggesting analysts may over weight information credibility for firms with better board and share capital structures. System is found to be associated with greater accuracy and lower disagreement. We also find evidence of greater disagreement with Output.

References

Aggarwal, R., Erel, I. Ferreira, M., Matos, P., (2011). Does governance travel around the world? Evidence from Institutional Investors. *Journal of Financial Economics*, 100(1), 154-181.

Ajinkya, B., Bhojraj, S., Sengupta, P., (2005). The association between outside directors, institutional investors and the properties of management earnings forecasts. *Journal of Accounting Research,* 43(3), 343-376.

Armstrong, C.S., Guay, W.R.,Weber, J.P., (2010). The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting and Economics*, 50, 179-234.

Bamber, L. S., Barron, O. E., Stober, T. L. (1999). Differential interpretations and trading volume. *The Journal of Financial and Quantitative Analysis,* 34(3), 369–386.

Barron, O. E., Byard, D., Kim, O., (2002). Changes in analysts' information around earnings announcements. *The Accounting Review*, 77(4), 821-846.

Barron, O. E., Harris, D. G., Stanford, M., (2005). Evidence that investors trade on private event-period information around earnings announcements. *The Accounting Review*, 80(2), 403-421.

Bassett, M., Koh, P-S., Tutticci, I. (2007). The association between employee stock option disclosures and corporate governance: Evidence from an enhanced disclosure regime. *The British Accounting Review*, 39(4), 303-322.

Beekes, W., Brown, P., (2006). Do better-governed Australian firms make more informative disclosures? *Journal of Business Finance and Accounting*, 33(3&4), 422-450.

Beekes, W., Brown, P., (2007). On the timeliness of price discovery. Available on the internet at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=938982 accessed 31.7.2012.

Ben-Amar, W., André, P., (2006). Separation of ownership from control and acquiring firm performance: The case of family ownership in Canada. *Journal of Business Finance and Accounting*, 33(3&4), 517-543.

Bhushan, R., (1989). Firm characteristics and analyst following. *Journal of Accounting and Economics,* 11(2-3), 255-274.

Botosan, C., (1997). Disclosure level and the cost of equity capital. *The Accounting Review*, 72(3), 323-349.

Brown, P., Beekes, W., Verhoeven, P., (2011). Corporate governance, accounting and finance: A review. *Accounting and Finance*, 51, 96-172.

Bujaki, M., McConomy, B.J. (2002). Corporate governance: Factors influencing voluntary disclosure by publicly traded Canadian firms. *Canadian Accounting Perspectives*, 1(2), 105-139.

Byard, D. Li, Y., Weintrop, J., (2006). Corporate Governance and the Quality of Financial Analysts' Information. *Journal of Accounting and Public Policy*, 25(5), 609 - 625.

Byard, D., Shaw, K. W., (2003). Corporate Disclosure Quality and Properties of Analysts' Information Environment. *Journal of Accounting, Auditing and Finance*, 18(3), 355 - 378.

Clarkson Centre for Business Ethics and Board Effectiveness, (2005). Board Shareholder Confidence Index. Glossary of Terms. Joseph L. Rotman School of Management, Toronto. Available on the internet at: http://www.rotman.utoronto.ca/ccbe/details.aspx?ContentID=211 accessed 31.7.2012

Collett, P., Hrasky, S., (2005). Voluntary disclosure of corporate governance practices by listed Australian companies. *Corporate Governance: An International Review,* 13(2), 188-196.

Dye, R.A., (2001). An evaluation of 'Essays on Disclosure' and the disclosure literature in accounting. *Journal of Accounting and Economics,* 32(1-3), 181-235.

Ettredge, M., Johnstone, K., Stone, M., Wang, Q., (2011). The effects of firm size, corporate governance quality and bad news on disclosure compliance. *Review of Accounting Studies,* 16, 866-889.

Healy, P.M., Hutton, A.P., Palepu, K.G., (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research,* 16(3), 485-520.

Hermalin, B.E., Weisbach, M.S., (2012). Information disclosure and corporate governance, *The Journal of Finance*, 67(1), 195-233.

Hope, O.K., (2003). Disclosure practices, enforcement of accounting standards and analysts' forecast accuracy: An international study. *Journal of Accounting Research,* 41(2), 235-272.

Jog, V., Dutta, S. (2004). Corporate performance, performance and CEO pay, (Working Paper, Carleton University), Available on the internet at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=507502 accessed 31.7.2012

Kandel, E., Pearson, N.D., (1995). Differential interpretation of public signals and trade in speculative markets. *Journal of Political Economy,* 103(4), 831–872.

Kennedy, P., 2003, *A Guide to Econometrics, 5th Ed.* (Blackwell Publishing, Oxford, UK).

Klein, P., Shapiro, D., Young, J., (2005). Corporate governance, family ownership and firm value: Canadian evidence, *Corporate Governance: An International Review*, 13(6), 769-784.

Lang, M.H., Lundholm, R.J. (1993). Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research,* 31(2): 246-271.

Lang, M.H., Lundholm, R.J., (1996). Corporate disclosure policy and analyst behavior. *The Accounting Review*, 71(4), 467-492.

Lev, B., S. Penman, (1990). Voluntary forecast disclosure, nondisclosure, and stock prices. *Journal of Accounting and Research*, 28(1), 49–76.

Li, J., Mangena, M., Pike, R. (2012). The effect of audit committee characteristics on intellectual capital disclosure. *The British Accounting Review,* 44, 98-110.

Michail, M.B. Walther, B.R., Willis, R.H. (1997). Do security analysts improve their performance with experience? *Journal of Accounting Research*, 35, 131-157.

Skinner, D.J., (1994), Why firms voluntarily disclose bad news. *Journal of Accounting Research*, 32(1), 38-60.

Toronto Stock Exchange, (2003). *Corporate Governance: A Guide to Good Disclosure.*

Toronto Stock Exchange, (2004a). *Policy Statement on Timely Disclosure, June 2004.* Toronto Stock Exchange**,** Toronto. Available on the internet at http://www.tmx.com/en/pdf/PolicyStatementOnTimelyDisclosure.pdf accessed 31.7.2012.

Toronto Stock Exchange, (2004b). Toronto Stock Exchange Company Manual. Toronto Stock Exchange, Toronto.

Toronto Stock Exchange, (2004c). *Disclosure standards for companies engaged in mineral exploration, development & production (June 2004)* Available on the internet at http://www.tmx.com/en/pdf/TSX_DisclosureStandardsMineralExploration.pdf accessed 31.7.2012.

Toronto Stock Exchange, (2006). *Corporate Governance: Guide to good disclosure* Available on the internet at http://www.tmx.com/en/pdf/TSXGuideToGoodDisclosure.pdf accessed 31.7.2012.

Vanstraelen, A., Zarzeski, M.T., Robb, S.W.G., (2003). Corporate non-financial disclosure practices and financial analyst forecast ability across three European countries. *Journal of International Financial Management and Accounting,* 14(3), 249-278.

Wheeler, D., Davies, R., (2006). Why corporate governance rankings do not predict future value: Evidence from Toronto Stock Exchange listings 2002-2005. In Benn, S. and Dunphy, D. (Eds.) *Corporate governance and sustainability: Challenges for theory and practice.* London: Routledge.

Appendix
Board Shareholder Confidence Index (BSCI)

The CG indices, described in detail below measure: (i) board independence, (ii) directors' ownership, (iii) board and board committee structure and voting rights, (iv) performance evaluation systems and (v) board decision output. These five underlying measures are summarized in an overall index of CG. For each of the variables, we assume the firm starts with 100 points, from which deductions are made for aspects not meeting the expected standard of CG. Each governance values used in the models of this study is rescaled so that it lies between 0 and 1. Values for the variables included in the study are shown below:

Independence (Indep):

Director independence evaluates the relationships between the directors and management, as well as the relationships between individual directors on the board to determine independence (Clarkson Centre for Business Ethics and Board Effectiveness, 2005). The measure includes independence from management, the presence of interlocking board memberships and the 'busyness' of directors.

(i) Affiliated directors: A director is considered affiliated with management if they are a(n): "(i) Employee of the company (currently or within three years); (ii) Executive of any affiliated company; (iii) Director or Director's firm provides legal, auditing, or consulting services to the company (within the last 3 years); (iv) Kinship to CEO or Chair (if Chair holds >10% of company's shares) or (v) Any other significant relationship deemed material that does not fall under the above categories." (Clarkson Centre for Business Ethics and Board Effectiveness, 2005, p.1). It is expected that two-thirds of the board will be independent, otherwise deductions are made. Deductions are as follows based upon the percentage of independent directors: (i) Less than 30% = - 15; (ii) 30% - 50% = -10 (iii) 50% - 60% = -5; (iv) 60% - 66.7% = -3. There is no deduction if greater than two thirds of the board is independent.

(ii) Board Interlocks: A deduction of 5 is made if there is greater than one board interlock (i.e. directors being members of more than one board of directors at the same time as another director of the company).

(iii) Busyness of Directors: There is a deduction of 5 (per board member as appropriate) if any board member holds greater than 5 board memberships at any one time.

The overall deductions for independence are based upon the three components and letter grades are awarded as follows:

Independence Total Deductions	Letter Grade Awarded	Indep
No Deduction	AAA	1.00
-3	AA	0.97
-5	A	0.95
-8	B	0.92
More than -10	C	0.90

Directors' Ownership (Own)*:

This measure examines the average level of directors' stock ownership (for third of board with lowest ownership of shares) compared with size of directors' annual retainer. Note: The retained includes any deferred shares. Deductions are made if the multiple is less than four times. The table below shows the deductions made below and the letter grade awarded.

Ownership Multiple	Deduction	Letter Grade Awarded	Own
4 or more	No deduction	AAA	1.00
3-4	-3	AA	0.97
2-3	-5	A	0.95
1-2	-10	B	0.90
<1	-15	C	0.85

*Note this was amended in 2007 to also include cases where the director has no annual retainer. In addition to the above, where there is no retainer no deductions are made if the director owns at least $30,000 of shares. Between $25,000 and $25,999 of share ownership, a deduction of 3 is made. Between $20,000 and $24,999 of share ownership, a deduction of 5 is made, between $10,000 and $19,999 of share ownership a deduction of 10 is made and less than $10,000 of share ownership, there is a deduction of 15.

Structure

This measure examines the separation of Chair and CEO, the level of independence of audit and compensation committee members and ratio of voting to ownership rights on share classes.

(i) CEO/Chair Duality: If the same person takes the role of CEO and Chair, there is a deduction of 10. If there is a split in roles, but the chair is affiliated, the deduction is 7. If there is no split in CEO and Chair roles, or if there is a split and the Chair is affiliated but a lead director is appointed in both cases, a deduction of 5 is made.

(ii) Audit and Compensation Committee Composition: There is a presumption that the audit and compensation board committees should comprise independent directors. For each committee where there is not full independence, there is a deduction of 10.

(iii) Share Voting Structures: This evaluates the links between voting and ownership rights. Deductions are made if the voting rights are disproportionate to the ownership rights on shares. The deductions are as follows: if <20% of Equity Controls >80% of Votes, the deduction is 30. If 40% or Less Equity Controls 60% or More Votes, the deduction is 20. If <50% of Equity controls >50% of Votes, the deduction is 15. There is no deduction if the voting rights equal the ownership rights, or if there is no dual class share structure in place.

The overall grading of Structure based on the three above elements is as follows:

Structure Deduction	Letter Grade Awarded	Structure
No Deduction	AAA	1.00
-5	AA	0.95
-10	A	0.90
-20	B	0.80
-25 or greater	C	0.75

System

This aspect looks at the evaluation process for boards as a whole and individual directors. If there is no process in place for the performance evaluation of the board as a whole, there is a deduction of 10. If there is no performance evaluation process in place for individual directors, there is a deduction of 5.

System Deduction	Letter Grade Awarded	System
No Deduction	AAA	1.00
-5	AA	0.95
-10	A	0.90
-15	B	0.85

Output

This element evaluates board decision output and examines whether options granted to executives result in a significant dilution to the share capital. It also examines whether there has been any option re-pricing and the CEO's compensation relative to the share price. From 2005, there was inclusion of whether there is an evergreen option plan, loans made to directors and pension plans for directors.

(i) Options & Dilution: Following guidance from the Toronto Stock Exchange, a deduction of 10 is made if options granted are greater than 10 percent of the outstanding shares as this would represent a significant dilution. A deduction of 5 is also made if grants to the CEO are greater than 5 per cent of outstanding shares.

(ii) Option Re-pricing: A deduction of 20 is made if there has been re-pricing of options in the last three years. This is considered to represent a change in performance target for directors in relation to events and is not consistent with encouraging good performance.

(iii) CEO Compensation: Due to concern over 'reward for failure to perform', a deduction of 15 is made in situations when the share price decreases by 25 per cent, but the CEOs total compensation increases by 25 per cent in the following year.

(iv) Evergreen Options: Evergreen option plans allow granting of options up to a certain percentage dilution without further shareholder approval. This is considered not in the interests of shareholders and a deduction of 5 is made if such an agreement is in place.

(v) Loans: Loans to directors and executives are considered to be an inappropriate use of funds. There is a deduction of 15 if there are outstanding interest free loans, a deduction of 10 if outstanding loans are interest bearing, but a deduction of only 5 if the firm has outstanding loans, but has discontinued this practice.

(vi) Director pensions: There is also a deduction of 10 if directors receive pensions as this is considered to be a conflict with shareholders' best interests.

Based upon the six items above, the deductions are made and the overall letter grade is awarded:

Output Deduction	Letter Grade Awarded	Output
No Deduction	AAA	1.00
-5	AA	0.95
-10	A	0.90
-20	B	0.80
-30		0.70

Total aggregate Corporate Governance (Total):

An aggregate measure is then awarded based upon the number of deductions for the five underlying measures.

Total Overall Score after deductions	Letter Grade Awarded	Total
100	AAA+	1.00
95	AAA	0.95
90	AA	0.90
75	A	0.75
50	B	0.50
<50	C	0.25

Full details and glossary for the BSCI on an annual basis is available from http://www.rotman.utoronto.ca/ccbe/details.aspx?ContentID=211

Table 1

PANEL A: Descriptive Statistics for the Variables in the Frequency of Disclosure and Timeliness Models

	Mean	Std. Dev.	Median	Min	Max
Docs	81.635	38.848	74	5	338
Log Docs	4.294	0.482	4.304	1.609	5.823
Timeliness	0.190	0.184	0.135	0.019	2.111
Timeliness Deflated	0.132	0.086	0.112	0.019	0.665
Size	7.623	1.897	7.405	2.245	13.303
Good news	0.487	0.500	0	0	1
Volatility	0.019	0.011	0.016	0.001	0.139
Lev	0.202	0.158	0.189	0	0.771
Indep	0.970	0.033	0.970	0.900	1
Own	0.966	0.051	1	0.850	1
Structure	0.907	0.094	0.950	0.750	1
System	0.926	0.071	0.950	0.850	1
Output	0.947	0.075	1	0.700	1
Total	0.617	0.244	0.500	0.250	1

PANEL B: Descriptive Statistics by Industrial Sector

Standard Industrial Classification: Industrial Sector	No. of observations	% of sample	Mean Indep	Mean Own	Mean Structure	Mean System	Mean Output	Mean Total
Agriculture, Forestry and Fishing	6	0.56	0.97	1.00	0.87	0.89	0.95	0.54
Construction	2	0.19	0.92	0.95	0.75	0.85	0.9	0.25
Finance, Insurance and Real Estate	151	13.99	0.96	0.98	0.93	0.95	0.94	0.67
Manufacturing	300	27.8	0.97	0.96	0.91	0.92	0.96	0.63
Mining	322	29.84	0.97	0.96	0.91	0.90	0.93	0.56
Retail Trade	78	7.23	0.96	0.97	0.87	0.93	0.96	0.58
Services	62	5.75	0.98	0.96	0.93	0.96	0.96	0.71
Transportation, Communications, Electric, Gas and Sanitary Services	147	13.62	0.98	0.96	0.89	0.95	0.96	0.64
Wholesale Trade	11	1.02	0.98	0.95	0.97	0.91	0.96	0.71

Note: The sample (N=1,079) is constructed from the set of Canadian companies rated in the Board Shareholder Confidence Index. Panel A shows the descriptive statistics for the variables in the frequency of disclosure and timeliness models. Panel B shows the distribution of observations by sector and the mean values of each of the Corporate Governance variables by sector. The variables are defined as follows: Docs is the annual number of documents as retrieved from the SEDAR website from 2002-2007. Ldocs denotes the natural logarithm (log) of Docs. Timeliness is the timeliness metric, measured as the average daily absolute difference between the log of the market-adjusted share price that day and the log of market-adjusted share price 14 days after the release of the firm's EPS for the year. Timeliness deflated is the timeliness metric divided by one plus the absolute rate of return on the share over the period used to calculate the share's timeliness metric. Size is proxied by the log of the firm's total assets at the year end. Good news is a dummy variable with a value of one if the market adjusted return over the 365 days ended 14 days after the release date is positive, and is zero otherwise. Volatility is calculated from daily log returns in the 90 days ending the day before we observe the first price for the timeliness metric. Indep is a measure of director independence, Own is a measure of directors' stock ownership, Structure is a measure of board and committee structures and share capital structure, System is a measure of evaluation systems for the board of directors as a whole, as well as individual directors, and Output is a measure of board decision output. Total is an aggregate measure of Corporate Governance.

Table 2

Correlations of Variables used in Frequency of Disclosure and Timeliness Models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1. Docs	1.00													
2. Log Docs	0.92	1.00												
3. Timeliness	-0.02	-0.01	1.00											
4. Timeliness Deflated	-0.03	-0.03	0.92	1.00										
5. Size	0.23	0.24	-0.40	-0.44	1.00									
6. Good news	0.03	0.02	0.06	0.06	-0.07	1.00								
7. Volatility	0.05	0.05	0.50	0.48	-0.52	0.13	1.00							
8. Lev	0.00	0.01	-0.10	-0.10	0.20	-0.03	-0.20	1.00						
9. Indep	-0.01	0.01	-0.06	-0.05	-0.05	-0.06	-0.08	0.07	1.00					
10. Own	-0.01	-0.03	-0.05	-0.05	0.17	0.03	-0.10	-0.04	0.07	1.00				
11. Structure	0.12	0.13	-0.10	-0.10	0.11	-0.04	-0.13	-0.05	0.30	0.16	1.00			
12. System	0.12	0.12	-0.21	-0.22	0.36	-0.06	-0.28	0.11	0.24	0.21	0.20	1.00		
13. Output	-0.04	-0.05	-0.19	-0.21	0.18	-0.03	-0.17	0.11	0.08	0.07	0.07	0.08	1.00	
14. Total	0.08	0.08	-0.21	-0.22	0.27	-0.04	-0.25	0.05	0.47	0.39	0.69	0.56	0.45	1.00

Notes: N=1,079; see Table 1 for the definitions of the variables.

Table 3

PANEL A: Descriptive Statistics for Analysts' Models

Variable	Mean	Std. Dev.	Median	Min	Max
Bias	0.003	0.035	0.000	-0.370	0.464
Accuracy	0.014	0.032	0.005	0.000	0.464
Disagreement	0.007	0.011	0.004	0.000	0.228
Following	9.579	3.978	9	4	27
Log Following	2.175	0.416	2.197	1.386	3.296
Size	8.056	2.087	7.905	-0.968	13.303
PrevFE	0.002	0.027	0	-0.370	0.299
ABS Prev FE	0.013	0.024	0.005	0.000	0.370
Volatility	0.015	0.007	0.014	0.001	0.094
Horizon	6.018	3.165	6	1	11
Option	0.336	0.473	0	0	1
Indep	0.971	0.033	0.970	0.900	1
Own	0.970	0.048	1	0.850	1
Structure	0.909	0.095	0.95	0.750	1
System	0.938	0.069	1	0.850	1
Output	0.957	0.068	1	0.700	1
Total	0.650	0.243	0.750	0.250	1

PANEL B: Descriptive Statistics by Industrial Sector

Standard Industrial Classification: Industrial Sector	No. of observations	% of sample	Mean Indep	Mean Own	Mean Structure	Mean System	Mean Output	Mean Total
Construction	21	0.29	0.92	0.95	0.75	0.85	0.90	0.25
Finance, Insurance, And Real Estate	1,298	18.16	0.96	0.98	0.95	0.95	0.96	0.72
Manufacturing	1,685	23.57	0.97	0.97	0.90	0.93	0.96	0.64
Mining	1,730	24.2	0.97	0.97	0.91	0.92	0.94	0.60
Retail Trade	621	8.69	0.97	0.97	0.88	0.93	0.98	0.60
Services	394	5.51	0.99	0.97	0.95	0.97	0.97	0.78
Transportation, Communications, Electric, Gas and Sanitary Services	1,336	18.69	0.97	0.97	0.88	0.95	0.96	0.65
Wholesale Trade	64	0.9	0.99	0.97	0.98	0.94	0.97	0.80

The sample (N=7,149) is constructed from the set of Canadian companies with I/B/E/S annual EPS forecasts, from 2002-2007. The sample is restricted to cases where at least 4 analysts contributed to the forecasts on the summary file. The sample firms must also be rated in the Board Shareholder Confidence Index. Panel A shows the descriptive statistics for the variables in the analyst models and Panel B shows the distribution of observations by sector and the mean values of each of the Corporate Governance variables by sector. The variables are defined as follows: Forecast Error (FE) is defined as the mean forecast EPS less actual EPS as reported by I/B/E/S, and is deflated by base price (stock price one day before the I/B/E/S cutoff date for forecasts made a year before the release date). Bias is the signed FE and Accuracy is its absolute value. Disagreement is the standard deviation of analysts' forecasts for that firm month, deflated by base price. Following is the number of analysts contributing to the consensus forecast. Log Following is the natural log of Following. Size is proxied by the natural log of total assets at the year end. Prev FE is the prior year's FE is for the same firm and for the same horizon, deflated by previous year's base price. ABSPrev FE is the absolute value of Prev FE, deflated by previous year's base price. Volatility is calculated from daily returns in the 90 days ended the day before the I/B/E/S forecast date. Horizon is the forecast horizon measured as the number of months from the forecast date until the company releases its annual earnings to the TSX. Option is a dummy variable coded 1 for firms with exchange traded options, 0 otherwise. Indep is a measure of director independence, Own is a measure of directors' stock ownership, Structure is a measure of board and committee structures and share capital structure, System is a measure of evaluation systems for the board of directors as a whole, as well as for individual directors, and Output is a measure of board decision output. Total is an aggregate measure of Corporate Governance.

Table 4 Variable Correlations for Analyst Models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1. Bias	1.00																
2. Accuracy	0.40	1.00															
3. Disagreement	0.09	0.37	1.00														
4. Following	-0.04	-0.05	0.04	1.00													
5. Log Following	-0.02	-0.06	0.02	0.97	1.00												
6. Size	-0.04	-0.08	-0.12	0.34	0.32	1.00											
7. Prev FE	-0.02	0.11	0.20	-0.03	-0.02	-0.05	1.00										
8. ABS Prev FE	0.06	0.30	0.41	-0.05	-0.07	-0.12	0.19	1.00									
9. Volatility	0.08	0.16	0.26	-0.08	-0.10	-0.38	0.06	0.21	1.00								
10. Horizon	0.03	0.17	0.09	0.05	0.04	0.00	0.04	0.22	-0.04	1.00							
11. Option	-0.07	-0.06	-0.04	0.48	0.45	0.46	-0.08	-0.09	-0.17	-0.03	1.00						
12. Indep	-0.02	-0.07	-0.02	0.06	0.06	-0.15	0.04	0.04	-0.02	0.00	-0.05	1.00					
13. Own	-0.03	-0.09	-0.13	0.15	0.15	0.09	-0.05	-0.07	-0.10	0.00	0.18	0.10	1.00				
14. Structure	0.00	-0.07	-0.02	0.14	0.14	0.14	0.00	-0.02	-0.11	0.00	0.14	0.24	0.22	1.00			
15. System	-0.06	-0.03	-0.07	0.21	0.22	0.26	-0.03	-0.04	-0.18	0.01	0.22	0.18	0.25	0.20	1.00		
16. Output	0.00	-0.12	-0.12	0.12	0.11	0.12	-0.03	-0.06	-0.14	0.00	-0.03	0.10	0.08	0.03	0.08	1.00	
17. Total	-0.06	-0.13	-0.12	0.22	0.22	0.20	-0.03	-0.05	-0.19	0.00	0.17	0.42	0.45	0.72	0.54	0.43	1.00

Notes: N= 7,149. Variable definitions as Table 3.

Table 5:

Results for the Frequency of Disclosure and Timeliness Models (N=1,079)

Dependent variable:	Log Docs	Log Docs	Log Docs	Timeliness deflated	Timeliness deflated	Timeliness deflated
Column No.:	(1)	(2)	(3)	(4)	(5)	(6)
Total	0.011	0.030		-0.005	-0.004	
	(0.65)	(1.55)		(1.08)	(0.80)	
Indep			-0.024			0.002
			(1.23)			(0.50)
Own			0.011			0.008
			(0.51)			(1.63)
Structure			0.039			-0.006
			(1.84)*			(1.12)
System			0.000			0.000
			(0.01)			(0.03)
Output			0.039			-0.005
			(2.46)**			(1.02)
Goodnews	0.039	0.040	0.042	0.002	0.002	0.001
	(2.03)**	(2.16)**	(2.29)**	(0.36)	(0.38)	(0.24)
Size	0.181	0.188	0.208	-0.070	-0.070	-0.071
	(2.78)***	(2.86)***	(3.18)***	(4.26)***	(4.22)***	(4.39)***
Volatility	0.044	0.044	0.040	0.003	0.003	0.003
	(2.20)**	(2.17)**	(1.93)*	(0.45)	(0.45)	(0.46)
Lev	-0.012	-0.010	-0.009	0.020	0.020	0.022
	(0.51)	(0.43)	(0.35)	(2.84)***	(2.85)***	(3.08)***
Goodnews·Total		-0.041			-0.002	
		(2.21)**			(0.48)	
Goodnews·Indep			0.007			-0.010
			(0.39)			(1.89)*
Goodnews·Own			0.018			-0.002
			(0.87)			(0.33)
Goodnews·Structure			-0.023			0.007
			(1.13)			(1.19)
Goodnews·System			-0.035			-0.002
			(1.78)*			(0.33)
Goodnews·Output			-0.037			-0.005
			(1.84)*			(0.92)
F-test	12.00***	11.41***	7.48***	3.67***	3.37***	3.22***
Adj. R^2	0.13	0.13	0.14	0.05	0.05	0.06
No of Clusters	245	245	245	245	245	245
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

* $p<0.1$; ** $p<0.05$; *** $p<0.01$ two-tailed tests

Note: See Table 1 for variable definitions. Columns (1) – (3) show the results for the frequency of disclosure models and columns (4) – (6) show the results for the timeliness models. All regressors are normalised to assist interpretation. *t*-statistics with standard errors clustered by firms in parentheses.

Table 6

Results for Analyst Models (N=7,149)

Dependent variable:	Bias	Bias	Accuracy	Accuracy	Disagreement	Disagreement	Log Following	Log Following
Column No:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total	-0.000		-0.004		-0.001		0.021	
	(0.07)		(1.74)*		(2.95)***		(1.82)*	
Indep		0.001		-0.003		-0.000		0.011
		(0.35)		(1.74)*		(0.86)		(1.06)
Own		-0.002		-0.002		-0.001		-0.006
		(1.56)		(1.63)		(1.55)		(0.49)
Structure		0.003		-0.002		-0.001		-0.001
		(0.98)		(0.91)		(1.48)		(0.05)
System		-0.003		-0.001		-0.000		0.014
		(1.28)		(0.29)		(0.76)		(1.32)
Output		0.007		-0.001		-0.001		0.003
		(2.13)**		(0.60)		(1.98)**		(0.25)
Log Following	0.001	0.001	-0.003	-0.003	-0.001	-0.001		
	(0.76)	(0.76)	(2.20)**	(2.25)**	(2.44)**	(2.55)**		
Disagreement	-0.003	-0.003	0.001	0.001				
	(1.14)	(1.05)	(0.35)	(0.33)				
Size	-0.009	-0.004	-0.014	-0.015	-0.002	-0.002	0.265	0.258
	(0.60)	(0.31)	(0.99)	(1.08)	(0.64)	(0.78)	(2.98)***	(2.94)***
PrevFE	-0.007	-0.007						
	(2.08)**	(2.18)**						
ABS(PrevFE)			0.001	0.001	0.001	0.001	-0.013	-0.013
			(0.42)	(0.41)	(2.03)**	(1.99)**	(1.47)	(1.42)
Volatility	-0.001	-0.001	-0.000	-0.000	0.001	0.001	-0.023	-0.023
	(0.28)	(0.47)	(0.15)	(0.15)	(2.51)**	(2.58)**	(1.82)*	(1.86)*

Horizon	0.001	0.001	0.005	0.005	0.001	0.001	0.018	0.018
	(1.71)*	(1.73)*	(6.01)***	(6.07)***	(6.47)***	(6.44)***	(4.33)***	(4.32)***
Option	-0.002	-0.001	0.000	0.000	0.002	0.002	-0.003	-0.004
	(0.46)	(0.19)	(0.08)	(0.10)	(1.41)	(1.39)	(0.12)	(0.16)
F-test	1.12	1.79**	8.09***	6.52***	6.10***	5.14***	9.79***	7.69***
Adj. R^2	0.04	0.06	0.07	0.08	0.06	0.06	0.10	0.10
No of Clusters	167	167	167	167	167	167	167	167
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* $p<0.1$; ** $p<0.05$; *** $p<0.01$ two-tailed tests

Notes: For variable definitions, see Table 3. Columns (1) and (2) show the results for the analyst earnings forecast Bias models; columns (3) and (4) show the results for the analyst forecast Accuracy models; columns (5) and (6) show the results for the analyst Disagreement models; and columns (7) and (8) show the results for the analyst Following models. All regressors are normalised to assist interpretation. *t*-statistics with standard errors clustered by firms in parentheses.