



**On the Relevance of Social and Environmental Disclosures and Corporate Governance for
Financial Analysts Forecasts: Canadian Evidence**

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Abstract

In this study, I explore the relationships between social and environmental disclosures, corporate governance, and analyst forecast precision. Results are the following. First, findings show that both CSR disclosures and corporate governance increase consensus among analysts and reduce forecast dispersion. Second, results suggest that there is a substitution effect between environmental and social disclosures in their relation with analyst forecast precision. Third, corporate governance substitutes to environmental and social disclosures in improving analyst forecast precision. Finally, results also suggest a mediating effect of governance and analyst following in the relation between environmental and social disclosures and analyst forecast precision. It appears that both CSR disclosures and good corporate governance attract analysts and improve their ability to forecast earnings.

Keywords: Analyst following, analyst forecasts, corporate governance, environmental disclosure, social disclosure.

La pertinence du reporting social et environnemental et la gouvernance d'entreprise pour les prévisions des analystes financiers: Une étude canadienne

Résumé

Dans cette étude, j'explore les relations entre le reporting social et environnemental, la gouvernance d'entreprise, et la précision des prévisions des analystes. Les résultats sont les suivants. Premièrement, les résultats montrent que le reporting social et le reporting environnemental de même que la gouvernance augmentent la précision des prévisions des analystes. Deuxièmement, les résultats montrent l'existence d'un effet de substitution entre le reporting environnemental et social dans leurs relations avec la précision des prévisions des analystes. Troisièmement, la gouvernance d'entreprise a un effet de substitution au reporting environnemental et social dans l'amélioration de la précision prévisions des analystes. Enfin, les résultats montrent également un effet médiateur de la gouvernance et du suivi des analystes dans la relation entre le reporting environnemental et social et la précision prévisions des analystes. Il semble que le reporting social et environnemental et la gouvernance d'entreprise attirent les analystes et, dès lors, améliorent leur capacité à prédire les résultats comptables.

Mots-clés : Gouvernance d'entreprise, prévisions des analystes, reporting environnemental, reporting social, suivi des analystes.

1. Introduction

Corporate disclosure is a key source of information for financial analysts. Previous studies provide empirical evidence that both voluntary disclosure and effective governance attract financial analysts, leads to more accurate analyst earnings forecasts, and to less dispersion in analyst forecasts.

It is documented that corporate social responsibility (CSR) disclosure, i.e. social and environmental disclosures may help to reduce the information asymmetry between a firm's managers and its stakeholders, especially investors.¹ For example, Cormier et al. (2009a) show that social disclosure reduces a firm's cost of equity capital. With respect to environmental disclosure, Aerts *et al.* (2008) find that it is associated with a decrease in analysts' forecast dispersion.

The current study investigates how CSR disclosures and corporate governance affect information asymmetry on stock markets. This study focuses on the complementary or substitute nature of governance and of disclosure about environmental and social dimensions of CSR. First, CSR implies that a firm strives to achieve a level of economic performance that will ensure adequate return on the capital invested by investors. Second, the social dimension of CSR implies that managers will also consider how their decisions affect society, i.e., both its stakeholders such as employees, suppliers and customers as well as the community as a whole. Effective social performance will greatly enhance a firm's visibility and reputation within society. Finally, managers will try to minimize the impact of the firm's activities on the natural environment, thus

¹ There is empirical evidence that, on their own, both social disclosure (e.g. Downing, 1997; Cormier et al., 2009a) and environmental disclosure (e.g. Barth and McNichols, 1994; Li and McConomy, 1999; Aerts *et al.*, 2008) convey value-relevant information.

contributing to society's sustainable development (Hart, 1997). Overall, CSR ensures a firm's continuity and licence to operate within society.

Our study builds upon the intuition of Neu et al. (1998) who offer a tentative template to analyze CSR by treating social disclosure as a determinant of environmental disclosure. They argue that social disclosure helps investors to frame the interpretation of environmental disclosures.

Prior research also suggests that effective corporate governance may help reducing information asymmetry and to improve analyst forecast precision. Ajinka et al. (2005) and Karamanou and Vafeas (2005) show that management earnings forecasts are more accurate in firms with more independent boards, which can reasonably lead to a decrease in analyst forecast errors. This paper focuses on the complementary or substitute nature of corporate governance on the association between CRS disclosures and analyst following and analyst forecast precision.

Findings tend to confirm expectations. First, results show that both disclosures and corporate governance increase consensus among analysts and reduce forecast dispersion. Second, results suggest that there is a substitution effect between environmental and social disclosures in improving analyst forecast precision. Third, corporate governance substitutes to environmental and social disclosures in its relation with analyst forecast precision. Finally, results also suggest a mediating effect of governance and analyst following in the relation between environmental and social disclosures and analyst forecast precision. It appears that both environmental and social disclosures and governance attract analysts and improve their ability to forecast earnings.

The remainder of the paper is organized as follows. Section 2 presents the theoretical background and hypotheses. The study's method is described in section 3. Results are presented in section 4. Finally, section 5 provides a conclusion and a discussion of potential implications of the results.

2. Background and hypotheses

Extensive disclosure helps financial analysts to produce valuable new information, such as more precise forecasts and buy/sell recommendations, thereby increasing demand on their services (Healy and Palepu, 2001). Lang and Lundholm (1996) provide evidence that firms with more informative disclosures have a larger analyst following, more accurate analyst earnings forecasts, and less dispersion in analyst forecasts.

Organizations are increasingly disclosing extensive information about CSR issues in their annual report or in a stand-alone report. The Global Reporting Initiative (GRI) and ISO 26000 provide a broad-based framework for the development of CSR disclosure strategies, with guidance on report content and the type of indicators to be selected. There is an extensive literature that reviews and synthesizes CSR reporting and its determinants (e.g., Gelb and Strawser, 2001).

However, the relevance and credibility of a firm's overall CSR disclosures can still be questioned. For example, there is considerable potential for problems when stakeholders perceive that a firm is just engaging in a public relations exercise and cannot demonstrate concrete action that leads to real social and environmental benefits, i.e. impression management. Furthermore, even among those firms displaying their CSR activities, the average quality of disclosure may undermine meaningful analyses and comparisons among disclosing firms.

In addition, the impact of a firm's social disclosure on information asymmetry between managers and investors can only be correctly assessed if the firm's social capital traits are visible and salient in the market, for example through social performance reputation ratings (Fombrun and Shanley, 1990). Effective corporate governance could also play the role of assessing the quality of CSR reporting, good governance leading to better disclosure quality. In any case, a

corporate disclosure policy is important in supporting the lasting effects of its social capital on market-based risk and performance measures. In that regard, Cormier et al. (2009a) show that social disclosure reduces a firm's cost of equity capital. With respect to environmental disclosure, Aerts et al. (2008) find that it is associated with a decrease in analysts' forecast dispersion.

With respect to the incidence of corporate governance on disclosure quality, Cheng and Courtenay (2006) find that the presence of an external governance mechanism, the regulatory environment, enhances the strength of the association between the proportion of independent directors and the level of voluntary disclosure. Hence, governance agents are expected to play a monitoring role regarding management so that voluntary disclosure better reflects the economic reality of the firm. Effective governance may have a positive impact on voluntary disclosure, especially in a country like Canada where there is extensive investor protection.

Prior research also suggests that effective corporate governance in itself may help to reduce information asymmetry and to improve analyst forecast precision. Bhat *et al.* (2006) document that governance transparency is positively associated with analyst forecast accuracy, and that governance-related disclosure plays a bigger role in improving the information environment when financial disclosures are less transparent. Ajinka *et al.* (2005) and Karamanou and Vafeas (2005) show that management earnings forecasts are more accurate in firms with more independent boards, which can reasonably lead to a decrease in analyst forecast errors. Goh *et al.* (2008) show that better corporate governance, in terms of greater board independence and greater institutional monitoring, improves liquidity through more voluntary disclosure, and greater analyst coverage. Cormier *et al.* (2009b) shows that some formal governance attributes (board and audit committee size) reduce information asymmetry in the Canadian context.

Hence, I assert that corporate governance should moderate the relation between CSR disclosures and analyst forecasts precision. However, it is not clear whether corporate governance

and customer value disclosures substitute or complement each other in improving analyst forecasts. On one hand, effective corporate governance may have a sufficient impact on information asymmetry and earnings forecasts on its own. On the other hand, effective corporate governance may help financial analysts frame the interpretation of customer value disclosures, thereby acting as a complement to disclosure. The first research hypothesis is therefore stated in the null form as:

Hypothesis 1a

There is a substitution effect between corporate governance and social and environmental disclosures in increasing analyst forecast precision.

Hypothesis 1b

There is a complementary effect between corporate governance and social and environmental disclosures in increasing analyst forecast precision.

Whereas a moderator variable (corporate governance in this case) specifies when certain effects hold, mediators investigate how or why such effects occur. One can argue that environmental and social disclosures may affect analyst earnings forecasts directly and, indirectly, through corporate governance. Hence, I predict that corporate governance has a mediating effect on the impact of environmental and social disclosures on analyst following and then on the quality of earnings forecasts. The effect of disclosure on the quality of analyst forecasts should depend on corporate governance. I anticipate a direct effect of environmental and social disclosures on the quality of analyst forecasts and an indirect effect through corporate governance. Hence, the second hypothesis:

Hypothesis 2

Corporate governance has a mediating effect on the impact of social and environmental disclosures in attracting analysts and in increasing analyst forecast precision.

3. Method

3.1. Sample

The sample comprises 192 observations for the year 2008. Environmental and social disclosures were collected from corporate websites in summer 2008. Disclosure formats include annual reports, web pages and sustainability reports. 220 firms represented on the Toronto Stock Exchange S&P/TSX Index were identified. From 220 firms, there are no earnings forecasts for 23 firms and no governance score for five firms. This provides a sample of 192 firms. Financial data was collected from Compustat and Stock Guide. Governance scores come from Board Games ranking for the year 2008 (The Globe & Mail). Sample firms operate in the following industries: Financial; Real Estate; Materials; Energy; Industrials; Consumer discretionary; Consumer staple; Utilities; Telecommunications; Information technology; and Health care.

3.2. Empirical models

I consider that the determination of CSR disclosure strategy, corporate governance and financial analyst forecasting work are closely intertwined. The possibility exists that corporate governance affects simultaneously CSR disclosure strategy and analyst forecasts (dispersion and consensus) (e.g. Hope 2003a). Hence, I first assess whether or not endogeneity exists between the

variables using the Hausman test. Endogeneity tests (reported in the results section) confirm interrelations for forecast dispersion and environmental disclosure and social disclosure, for forecast dispersion and governance, and social and environmental disclosures and governance. This justifies relying on the following simultaneous equations.

$FORDIS / CONSENSUS_{it+1} =$

$$\begin{aligned} & \alpha\beta_0 + \beta_1 SYSRISK + \beta_2 NEGEPS + \beta_3 ANFOLL + \beta_4 ENVDISC + \beta_5 SOCDISC + \\ & \beta_6 ENVDISC * SOCIALDISC)_{it} \end{aligned} \quad (1.1)$$

Or,

$FORDIS / CONSENSUS_{it+1} =$

$$\begin{aligned} & \alpha\beta_0 + \beta_1 SYSRISK + \beta_2 NEGEPS + \beta_3 ANFOLL + \beta_4 ENVDISC + \\ & \beta_5 ENVDISC * GOVSCORE + \beta_6 GOVSCORE)_{it} \end{aligned} \quad (1.2)$$

Or,

$FORDIS / CONSENSUS_{it+1} =$

$$\begin{aligned} & \alpha\beta_0 + \beta_1 SYSRISK + \beta_2 NEGEPS + \beta_3 ANFOLL + \beta_4 SOCDISC + \\ & \beta_5 SOCDISC * GOVSCORE + \beta_6 GOVSCORE)_{it} \end{aligned} \quad (1.3)$$

And,

$ENVDISC_{it} =$

$$\alpha\beta_0 + \beta_1 LENVP + \beta_2 ANFOLL + \beta_3 FSIZE + \beta_4 LEV + \beta_5 ROA)_{it} \quad (2.1)$$

Or,

$SOCIAL_{it} =$

$$\alpha\beta_0 + \beta_1 ANFOLL + \beta_2 FSIZE + \beta_3 LEV + \beta_4 ROA)_{it} \quad (2.2)$$

And,

GOVSCORE_{it} =

$$f(\beta_0 + \beta_1 ANFOLL + \beta_2 FSIZE + \beta_3 LEV + \beta_4 ROA)_{it} \quad (3)$$

Where:

CONSENSUS is the level of consensus among analysts; *FORDIS* is the standard deviation of EPS forecasts; *SYSRISK* is the systematic risk (beta); *NEGEPS* is 1 if negative EPS, 0 otherwise; *ANFOLL* is the number of analysts following a firm; *ENVDISC* is environmental disclosure; *SOCDISC* is social disclosure; *GOVSCORE* is the governance score; *LENVP* is low environmental performance, a binary variable taking the value of 1 if environmental performance less the mean value for the industry is positive, zero otherwise; *FSIZE* is firm size; *LEV* is leverage; *ROA* is return on assets (see Table 1 for the measurement of variables).

3.3. *Dependent variables*

FORDIS. The dispersion in forecasts is the standard deviation of EPS forecasts for 2009 scaled by the absolute value of reported EPS for 2009.

CONSENSUS. I rely on Barron et al. (1998) to assess the degree to which analysts share a common belief, i.e. consensus. *Consensus* is a function of forecast dispersion, error, and the number of forecast. It is computed as:

$$CONSENSUS = \frac{SE - D/N}{(1-1/N)D + SE}$$

Where: D = Dispersion in analyst forecasts, i.e., the sample variance of the individual forecasts around the mean forecast

SE = Squared error of the mean forecast

N = Number of analysts

Barron *et al.* (1998) investigate, from an analytical perspective, what analyst forecasts reveal about their information environment, that is, the general properties of their information and beliefs. They assume that analyst earnings forecast is their best estimate of earnings based on available information, which consists of public (common across analysts) and private (idiosyncratic) information. Their model demonstrates how these two types of information result in forecast errors and dispersion and how the underlying unobservable characteristics of the analyst's information environment are revealed by expressions involving observable constructs. Consensus measures how much the average belief reflects public versus private information. When all available information is public, all analysts' beliefs are identical and *Consensus* should be equal to one.

ENVDISC. Environmental disclosure is measured using a coding instrument in a way that is similar to Wiseman (1982), Cormier and Magnan (2003), and Al-Tuwaijri et al. (2004). The grid comprises 40 items measuring environmental disclosure quality where the items are grouped into six categories as follows: Expenditures and risks; laws and regulation conformity; pollution abatement; sustainable development; land remediation and contamination; and environmental management. The rating is based on a score from one to three, three points are awarded for an item described in monetary or quantitative terms, two when an item is described specifically, and one for an item discussed in general. The information is coded according to the grid presented in appendix 1. Disclosure is collected from corporate Internet sites, i.e. the annual report and the sustainability reports. We eliminate any overlap in disclosure.

SOCDISC. Social disclosure comprises 35 items (see appendix 2). The grid is a combination of elements suggested in Global Reporting Initiative (GRI) and ISO 26000.

Elements are grouped into four categories: Labour protection and decent work; Human rights; Society; Consumer and product responsibility. The rating is based on a score from one to three, three points are awarded for an item described in monetary or quantitative terms, two when an item is described specifically, and one for an item discussed in general. We eliminate any overlap in disclosure.

GOVSCORE. The governance score is based on Board Games (The Globe and Mail's annual report on corporate governance)², which includes four components: 1) board composition; 2) shareholding and compensation; 3) shareholder rights; and 4) disclosure. The grid is based on 100 marks. Board composition; 31 marks; Shareholding and compensation: 26 marks; Shareholder rights: 31 marks; Disclosure: 12 marks. The Board Games governance score is assessed for the year 2008 (see the coding grid in appendix).

3.4. *Independent variables*

3.4.1. Analyst forecast models (Consensus and Forecast dispersion)

SYSRISK. Patton and Verardo (2010) observe that the increase in systematic risk is greater for earnings announcements with larger positive or negative surprises, and with greater analyst forecast dispersion. I expect a positive association between *SYSRISK* and *FORDIS* as well as *CONSENSUS*.

ANFOLL. Analyst forecasts precision is likely to improve, as more information about a company is processed and disclosed by analysts (Alford and Berger 1999). Hope (2003a)

² The Globe and Mail is Canada's leading financial newspaper in terms of reach and readership. Its governance survey has been widely used in prior research (e.g., Klein *et al.*, 2005).

documents a negative relationship between analyst following and forecast error. Thus, a negative (positive) association is expected between *FORDIS* and (*CONSENSUS*).

NEGEPS. Hope (2003a) documents that negative earnings are associated with more forecast error, suggesting that earnings is more difficult to predict for companies that experience losses. Consistent with Hope (2003a, b), an indicative variable for negative earnings is used. I anticipate a positive relationship between this binary variable and *FORDIS* as well as *CONSENSUS*.

ENVDISC and *SOCDISC*. Prior research documents a negative relationship between the level of corporate disclosure and analyst forecast dispersion (e.g. Hope, 2003a). To the extent that disclosure increases the analyst ability to forecast earnings, a positive association (negative) association is expected between *ENVDISC* and *SOCDISC* and *CONSENSUS* (*FORDIS*).

Moreover, to test the substitution or complementary effect of environmental and social disclosures on the relationship with forecast precision, the interaction term *ENVDISC***SOCDISC* is introduced.

GOVSCORE. Vafeas (2000) finds that earnings are more informative for companies with more effective boards while Dey (2005) reports that earnings credibility increases with board quality. These findings suggest that higher corporate governance quality should be associated with less information asymmetry and improve analyst forecast accuracy. A positive association (negative) association is expected between *GOVSCORE* and *CONSENSUS* (*FORDIS*).

ENVDISC / *SOCDISC* and *GOVSCORE*. To test the moderating effect of governance on the relationship between disclosure and forecast precision, the interaction term *ENVDISC***GOVSCORE* and *SOCIALDISC***GOVSCORE* are introduced.

3.4.2. Disclosure models (environmental and social disclosures)

ANFOLL. Lang and Lundholm (1996) and Healy *et al.* (1999) find a positive relation between analyst following and the quality of corporate disclosure. Hence, I expect a positive relationship between *ANFOLL* and *SOCDISC* and *ENVDISC*.

FSIZE. Prior empirical evidence shows a positive relationship between the extent of corporate disclosure and firm size (Scott 1994; Neu *et al.* 1998). Firm size is expected to be positively related to *SOCDISC* and *ENVDISC*.

LEV. Clarkson *et al.* (2008) find a positive relationship between leverage and environmental disclosure based on Global Reporting Initiative Guidelines. Conversely, Cormier and Magnan (2003) document a negative relationship between leverage and environmental disclosure. Since the impact of leverage on environmental disclosure is unclear, no directional predictions are made for the variable.

ROA. Prior studies document a positive association between a firm's level of disclosure and its financial performance (Cormier and Magnan, 2003; Murray *et al.*, 2006). We expect a positive relationship between profitability and *SOCDISC* and *ENVDISC*.

Environmental performance (*LENVP*). Environmental performance is proxied by the Toxics Release Inventory (TRI), a public database available from the National Polluting Release Inventory (NPRI) from Environmental ministry in Canada. This database contains information on toxic chemical releases and other waste management activities reported annually by manufacturing facilities. Toxic Release Inventory is the sum of all chemicals released in air, water and land in 2008. The measure is computed by summing all facilities for an individual company in pounds deflated by thousands of sales (Aerts and Cormier, 2009; Clarkson *et al.*, 2008). Higher values of the variable imply worse environmental performance. *LENVP* is a binary variable taking the value of one if environmental performance less the mean value for the

industry is positive, zero otherwise. Legitimacy theory predicts a positive association between *LENVP* and environmental disclosure. This relationship suggests that environmental disclosure is a function of social and political pressures facing firms (Aerts and Cormier, 2009). Consistent with prior studies on legitimacy theory (e.g. Patten, 2002; Aerts and Cormier, 2009), we expect a positive relationship between *LENVP* and environmental disclosure.

3.4.4. *Governance model*

FSIZE. Most of the existing researches support a positive relationship between firm size and its level of corporate governance (e.g. Black *et al.*, 2006; Dunerv and Kim, 2005). Larger firms tend to attract more attention and may be under greater scrutiny by the public. Thus, firm size could influence the quality of corporate governance as larger firms have more resources to implement governance mechanisms. A positive relationship is expected between *FSIZE* and *GOVSCORE*.

ANFOLL. Firms with better systems of corporate governance have more accurate analyst forecasts and analyst following. Analysts prefer to cover firms with a stronger corporate governance mechanism (Chou and Shiah-Hou, 2010). A positive relationship is expected between *ANFOLL* and *GOVSCORE*.

LEV. The use of external debt will result in the firm likely being subjected to additional outside monitoring by debt providers. Cho and Kim (2003) suggest that highly leveraged firms could be pressured by their borrower, such as financial institutions, to enhance its corporate governance. Black *et al.* (2006) and Brown and Caylor (2009) also found positive association between leverage and corporate governance. *LEV* is measured as total debt to total assets. A positive relationship is expected between *LEV* and *GOVERNANCE*.

ROA. Prior literatures show mixed results about the direction of the relationship between corporate governance and profitability as measured by return on assets. Profitable firms are perceived to have a higher level of corporate governance because they have the ability to do so. Klapper and Love (2003) found evidence that firms with better governance have higher return on assets. Contrast results are seen in Gompers *et al.* (2003), Beiner *et al.* (2006) and Bauer *et al.* (2004). According to Cho and Kim (2003), a firm enhances its governance when its performance is poor. Improvements in corporate governance structure are expected to bring out positive result on their performance. No prediction is made on the relationship between profitability and governance.

4. Results

4.1. Descriptive statistics

As illustrated in Table 2, environmental disclosure shows a mean score of 10.71. Components that present the highest mean scores are Environmental management (3.93) and Pollution abatement (2.74). Internal consistency estimate shows that the variance is quite systematic with a Cronbach's alpha on score components of 0.83. This is slightly higher than Botosan (1997) who finds an alpha of 0.64 for a disclosure index including five categories of disclosure in the annual report. Cronbach's alpha estimates the proportion of variance in the test scores that can be attributed to a true score variance. It can range from zero (if no variance is consistent) to one (if all variances are consistent). According to Nunnaly (1978), a score of 0.70 is acceptable. As for social disclosure, the total mean score is 27.43 with Society (12.12) and Labour practices and decent work (11.74) presenting the highest mean scores. Cronbach's alpha

on social score components of 0.73.

[Insert Table 2]

Table 3 reports governance scores for the four categories. The mean total score is 64.97. Board composition (22.16) and Shareholder rights (20.30) present the highest mean scores. Considering the maximum scores allowed within each component, we get a mean relative score of 0.716 for Board composition (22.16/31), 0.569 for Compensation (14.78/26), 0.655 for Shareholders rights (20.30/31) and 0.658 for Disclosure (7.67/12)

[Insert Table 3]

Table 4 provides some descriptive statistics about sample firms' financial variables and environmental performance. Sample firms are relatively large (total assets averaging \$64 billion – median of 3 billion\$) and are followed by eight analysts on average. Beta is approaching market beta at an average of 1.07. Forecast dispersion averages 50% of the mean expected EPS.

[Insert Table 4]

Table 5 presents correlations. Consistent with our expectations, *GOVSCORE* is statistically correlated with *SOCDISC* (0.36) and *ENVDISC* (0.24), *FSIZE* (0.32). Also as expected, *FORDIS* is correlated with *FSIZE* (-0.20), *Lev* (0.21) and *ROA* (-0.29).

[Insert Table 6]

4.2. *Multivariate analyses*

Given that a firm's information dynamics may affect disclosure, governance, analyst following as well as analyst forecasts (consensus and dispersion) simultaneously, I first assess whether or not interactions exist between these variables using Hausman tests (regressions without the interaction terms). Based on this procedure, the null hypothesis of no endogeneity is rejected with respect to *FORDIS* and *ENVDISC* ($t=3.41$; $p < 0.001$), *FORDIS* and *SOCDIS* ($t=1.79$; $p < 0.075$), *FORDIS* and *GOVSCORE* ($t=2.23$; $p < 0.027$), *SOCDISC* and *GOVSCORE* ($t=-3.68$; $p < 0.000$), and *ENVDISC* and *GOVSCORE* ($t=-1.70$; $p < 0.090$). In light of this diagnostic, I rely on a three-stage estimation model (which combines 2SLS and Seemingly Unrelated Least Square - SURE) for regressions involving analyst forecast dispersion. SURE may improve the efficiency of parameter estimates when there is contemporaneous correlation of errors across equations. Furthermore, the greater the intra-equation multicollinearity, the more likely 3SLS provides a considerable gain in efficiency for the entire system of SURE (Binkley, 1982). In practice, the contemporaneous correlation matrix is estimated using OLS residuals.

A significant correlation of errors across equations is observed (0.27 between *FORDIS* and *ENVDISC* equations, 0.24 between *ENVDISC* and *SOCDISC* equations). Concerning intra-equation multicollinearity, I observe that interaction terms are highly correlated. *ENVDISC* is correlated at 0.85 with *ENVDISC*GOVSCORE*. Since multicollinearity could be an issue, SURE is likely to improve the efficiency of the entire system (Binkley, 1982). With respect to *CONSENSUS*, we do not observe endogeneity with *ENVDISC* ($t=-0.61$; $p < 0.544$), *SOCDISC* ($t=-1.11$; $p < 0.267$), and *GOVSCORE* ($t=-0.91$; $p < 0.365$). For these regressions, we rely to OLS estimations. The software being used is STATA. Finally, we exclude from regressions observations with standardized residuals exceeding two.

4.2.1. Analyst Forecast Precision, Disclosure and Governance

Table 6 provides evidence regarding the simultaneous test of *FORDIS*, *ENVDISC*, *SOCDISC*, and *GOVSCORE*. Panel A (third column) reports results of 3SLS regression estimations regarding the substitution or complementary effect between environmental and social disclosures. Consistent with prior research (e.g. Cormier *et al.*, 2011), results suggest a substitution effect between *SOCDISC* and *ENVDISC* since the coefficient on the interaction term *ENVDISC*SOCDISC* is positive and significant (0.001; $p < 0.05$). The substitution effect is strong since the sum of coefficients *ENVDISC* and *ENVDISC*SOCDISC* is close to zero ($t=2.30$; $p < 0.129$).

From panel A (fourth column), we observe a substitution effect between corporate governance and environmental disclosure in reducing analyst forecast dispersion (*FORDIS*) since the coefficient on the interaction term *ENVDISC*GOVSCORE* is positive and significant (0.022; $p < 0.05$). This is consistent with hypothesis 1a. However, the substitution effect between corporate governance and environmental disclosure is not complete since the sum of coefficients *ENVDISC* and *ENVDISC*GOVSCORE* is different from zero (3.89; < 0.048). The same substitution effect is observed for social disclosure (Panel A, fifth column) since the coefficient on the interaction term *SOCDISC*GOVSCORE* is positive and significant (0.025; $p < 0.01$). The substitution effect between corporate governance and environmental disclosure is not complete since the sum of coefficients *SOCDISC* and *SOCDISC*GOVSCORE* is different from zero (4.53; < 0.033).

Table 7 reports results for *CONSENSUS* based on OLS regression estimations (absence of endogeneity). Results are consistent with those presented in Table 5 for forecast dispersion regressions. I observe substitution effects between social and environmental disclosure on their association with analyst consensus and a substitution effect between social disclosure and

governance and environmental disclosure and governance in their relation with analyst consensus.

[Insert Table 6 and table 7]

4.2.2. *Environmental / Social disclosures*

Panel B of Table 6 presents the results for the *ENVDISC* regressions. As expected, findings show that coefficients on *LENVP* and *ANFOLL* are positively and statistically associated with environmental disclosure. Legitimacy theory predicts a positive association between *LENVP* and environmental disclosure. Our results are consistent with that expectation.

Panel C of Table 6 reports results for *SOCDISC* regressions. *ANFOLL*, *FSIZE* are positively associated with social disclosure while *LEV* is negatively related to social disclosure. An explanation for the negative relationship between leverage and disclosure may be that highly levered firms are not able to withstand potential proprietary costs from the disclosure of information (Aerts and Cormier, 2009).

4.2.3. *Corporate governance*

Results reported in panel D of Table 6 show that, as expected, *ANFOLL*, *FSIZE* and *ROA* are positively related to corporate governance. Results suggest that analysts prefer to cover firms with strong corporate governance mechanisms. Firm size seems to influence the quality of corporate governance as larger firms have more resources to implement governance mechanisms than smaller firms. It also appears that profitable firms have a higher level of corporate governance because they have the financial ability to do so.

4.3 Path analysis results

Figures 1a and 1b show results of the path analyses for analyst forecast dispersion and analyst forecast consensus (p). Direct and total effects of governance, social and environmental disclosures on analyst following as well as analyst forecast precision are observed. For both *FORDIS* and *CONSENSUS*, corporate governance has a mediating effect on the relationship between social and environmental disclosures and analyst earnings forecasts. This is consistent with hypothesis 2 Corporate governance has a mediating effect on the impact of social and environmental disclosures in attracting analysts and in increasing analyst forecast precision.

Figures 1a and 1b present the path coefficients for indirect and direct effects. All the path coefficients linking *SOCDISC*, *ENVDISC*, *GOVSCORE* and *ANFOLL* to *FORDIS* or *CONSENSUS* are standardized for meaningful comparisons among the paths. Coefficients are obtained from OLS regression results based on the models reported in Table 5 except that the interaction terms are dropped. *ANFOLL* model is estimated with the same variables as *FORDIS* or *CONSENSUS*. Results reported in figure 1 show that total effect of governance (through analyst following, social and environmental disclosure, -0.161), of social disclosure (through analyst following and governance, -0.184) and of environmental disclosure (through analyst following and governance, -0.172) on forecast dispersion are quite similar. Indirect effects account for a large part of the impact of governance [paths (1)(5)] ($1 - 0.103/0.164 = 37\%$) on forecast dispersion. It is also true for social disclosure [paths (2)(5)] ($1 - 0.074/0.184 = 59.7\%$) and environmental disclosure [paths (3)(5)] ($1 - 0.073/0.172 = 42.4\%$). However, these results suggest that governance has the highest direct effect on forecast dispersion. Governance has also the highest indirect effect on the impact of social disclosure ($0.333 * 0.212 / 0.184 = 38.3\%$) or environmental disclosure ($0.333 * 0.212 / 0.172 = 41.0\%$) on forecast dispersion.

Figure 1b presents results of the path analyses for analyst consensus. The total effect of *GOVERNANCE* (0.189), social disclosure (0.182) and environmental disclosure (0.168) on analyst consensus are quite similar. In brief, it appears that corporate governance leads to more social and environmental disclosures, both governance and disclosure attract financial analysts, and the total effect of governance (disclosure) on forecast precision is larger when mediated by social and environmental disclosures (governance).

[Insert figure 1a and 1b]

5. Discussion and conclusion

In this paper, I build on prior literature on voluntary disclosure and corporate governance by investigating simultaneous relationships between analyst forecast precision and social and environmental disclosures considering corporate governance.

First, results show that both CSR disclosures and corporate governance increase consensus among analysts and reduces forecast dispersion. Second, results suggest that there is a substitution effect between environmental and social disclosures in improving analyst forecast precision. Third, corporate governance substitutes to environmental and social disclosures in the relation with analyst forecast precision. Finally, results also suggest a mediating effect of governance and analyst following in the relation between environmental and social disclosures and analyst forecast precision. It appears that both environmental and social disclosures and governance attract analysts and improve their ability to forecast earnings.

The present study contributes to our knowledge of voluntary disclosure in the following manner. Findings reveal that the relations between CSR disclosure, corporate governance, analyst

following and analyst forecasts are not straightforward but are closely intertwined. Results also highlight that effective governance may have a positive impact on voluntary disclosure, on analyst coverage and forecast precision, especially in a country like Canada where there is extensive investor protection. In other words, corporate governance is more likely to be credible within an effective legal system.

The results of this study should be interpreted with caution at least three reasons. The model is sensitive to the choice and validity of independent variables, especially those treated endogenously. To mitigate specification error, the choice of explanatory variables is based on prior empirical studies. However, it does not completely eliminate the potential for model misspecification and bias of the regression coefficients. Second, the measure of disclosure is based on a coding instrument that assumes the relevance of the information collected. However, selected items may not fully capture the underlying phenomenon. Third, I rely on a single external measure of corporate governance. In this vein, Baghat et al. (2008) point out that there is no consistent relationship between governance indices and measures of corporate performance. In the authors' view, there is no one "best" measure of corporate governance. The most effective governance system depends on the context and firms' specific circumstances.

Prior research documents that institutional characteristics affect the information environment across countries, thus potentially influencing analysts' costs and benefits from collecting and processing corporate information. A country's governance regime affects both the quality of voluntary disclosure and the effectiveness of its use by stock market participants (Roe, 2003). Since investor protection rights vary internationally, an objective for future research could be to analyze different governance regimes.

Table 1
Variable Definitions

<i>FORDIS</i>	Forecast dispersion for 2009 scaled by the mean forecast EPS.
<i>CONSENSUS (p)</i>	<i>p</i> captures the level of consensus among analysts for 2009 and measures the ratio precision of common information (<i>h</i>) to the precision of their total information (<i>h+s</i>).
<i>GOVSCORE</i>	Governance score for 2008, based on <i>The Globe</i> and Mail's annual report on corporate governance. The grid is based on 100 marks. Board composition; 31 marks; Shareholding and compensation: 26 marks; Shareholder rights: 31 marks; Disclosure: 12 marks.
<i>SYSRISK</i>	Systematic risk is measured as beta extracted from Stock Guide database and is computed based on percentage stock price change week over week for a period of 260 weeks ending at the end of 2008 fiscal year.
<i>NEGEPS</i>	Indicator variable taking the value of 1 if earnings are negative, 0 otherwise.
<i>ANFOLL</i>	Number of analysts following a firm in 2008
<i>LENVP</i>	Toxic Release Inventory is the sum of all chemicals released in air, water and land in 2008. The measure is computed by summing all facilities for an individual company in pounds deflated by 1 000\$ of sales. <i>LENVP</i> is binary variable taking the value of 1 if environmental performance less the mean value for the industry is positive, zero otherwise.
<i>FSIZE</i>	Natural log of total assets at the end of 2008.
<i>LEV</i>	Long term debt to total assets at the end of 2008.
<i>ROA</i>	Earnings/Total assets for 2008.

Table 2
Environmental and Social Disclosures by Components

	Min.	Max.	Mean	Std Dev.
Environmental disclosure – component scores				
Expenditures and risks	0	30	0.868	3.213
Laws and regulations conformity	0	32	0.532	2.627
Pollution abatement	0	54	2.736	6.265
Sustainable development	0	28	1.538	4.075
Land remediation and contamination	0	15	0.716	2.027
Environmental management	0	64	3.934	7.436
Total	0	180	10.705	21.663
Cronbach alpha (0.829)				
Social disclosure – component scores				
Labour practices and decent work	0	88	11.739	15.644
Human rights	0	37	2.275	5.583
Society	0	122	12.117	17.835
Consumer and product responsibility	0	35	1.295	4.318
Total	0	220	27.428	37.037
Cronbach alpha (0.727)				

Table 3
Corporate governance – Board Games Component Scores

	Min	Max.	Mean	Std dev.
Board composition	7	31	22.161	4.60
Compensation	1	24	14.781	5.33
Shareholder rights	4	30	20.296	5.76
Disclosure	0	12	7.677	2.93
Total	30	94	64.968	13.70

Table 4
Descriptive statistics

	Minimum	Maximum	Mean	Median	Std dev.
<i>FORDIS</i>	0.012	15.75	0.54	0.11	0.36
<i>CONSENSUS</i>	-0.99	0.99	0.64	0.76	0.42
<i>SYSRISK</i>	-2..11	4.61	1.07	1.00	0.72
<i>ANFOLL</i>	2	40	8.27	5.00	5.12
<i>LENVP</i>	0	1	0.20	0	0.40
<i>FSIZE</i> (Assets in million \$)	63	4 072 311	64 206	2 930	352 450
<i>LEV</i>	0	1.49	0.24	0.23	0.209
<i>ROA</i>	-1.92	0.34	0.01	0.04	0.229

ANFOLL is the number of analysts following a firm; *CONSENSUS* measures the ratio precision of common information (h) to the precision of their total information (h+s); *FORDIS* is the standard deviation of EPS forecasts scaled by the absolute value of mean expected EPS; *SYSRISK* is the systematic risk (beta); *LENVP* low environmental performance is a binary variable taking the value of 1 if environmental performance less the mean value for the industry is positive, zero otherwise; *FSIZE* is firm size; *LEV* is leverage; *ROA* is return on assets.

Table 5
Correlations

		1	2	3	4	5	6	7	8	9	10	11
1	<i>CONSENSUS</i>	1	-0.02	*-0.15	0.05	*0.13	0.03	0.09	-0.09	0.11	-0.01	-0.11
2	<i>FORDIS</i>		1	0.11	-0.11	-0.11	-0.11	-0.06	0.02	*-0.20	*0.21	*-0.29
3	<i>SYSRISK</i>			1	*0.14	*-0.13	-0.06	0.03	*0.14	*-0.17	0.08	*-0.13
4	<i>ANFOLL</i>				1	*0.18	*0.37	*0.16	0.02	*0.14	*-0.30	*0.17
5	<i>GOVSCOREE</i>					1	*0.36	*0.24	0.11	*0.32	-0.01	*0.10
6	<i>SOCDISC</i>						1	*0.22	0.09	*0.36	*-0.19	0.12
7	<i>ENVDISC</i>							1	*0.28	0.08	-0.01	0.07
8	<i>LENVP</i>								1	-0.03	-0.03	0.08
9	<i>FSIZE</i>									1	0.04	0.03
10	<i>LEV</i>										1	*-0.47
11	<i>ROA</i>											1

Note: *: $p < 0.10$.

CONSENSUS measures the ratio precision of common information (h) to the precision of their total information (h+s); *FORDIS* is the standard deviation of EPS forecasts scaled by the absolute value of mean expected EPS; *SYSRISK* is the systematic risk (beta); *ANFOLL* is the number of analysts following a firm; *GOVSCORE* is governance score; *SOCDISC* is Social disclosure; *ENVDISC* is environmental score; *LENVP* low environmental performance is a binary variable taking the value of 1 if environmental performance less the mean value for the industry is positive, zero otherwise; *FSIZE* is firm size; *LEV* is leverage; *ROA* is return on assets.

Table 6
3SLS Estimation of the Relationship between Analyst Forecast Dispersion and Social / Environmental Disclosure in Interaction with Corporate Governance

		<i>Environmental and social disclosure</i>	<i>Environmental disclosure and Governance</i>	<i>Social disclosure and Governance</i>
Panel A - Dependent variable:		<i>FORDIS</i>	<i>FORDIS</i>	<i>FORDIS</i>
<i>SYSRISK</i>	+	***0.167	*0.159	*0.989
<i>NEGEPS</i>	+	***0.464	*0.636	-0.448
<i>ANFOLL</i>	-	0.023	0.019	**0.435
<i>ENVDISC</i>	-	**0.016	**1.728	
<i>SOCDISC</i>	-	**0.015		***-2.024
<i>ENVDISC*SOCDISC</i>	+	**0.001		
<i>ENVDISC*GOVSCORE</i>	+		**0.022	
<i>SOCDISC*GOVSCORE</i>	+			***0.025
<i>GOVSCORE</i>	-		**0.107	
Chi2		52.4(0.00)	16.2(0.01)	11.9(0.06)
Test of coefficient difference				
<i>SOCIALDISC</i> and <i>ENVDISC*SOCDISC</i>		2.30(0.129)		
<i>ENVDISC</i> and <i>ENVDISC*GOVSCORE</i>			3.89(0.048)	
<i>SOCDISC</i> and <i>SOC*GOVSCORE</i>				4.53(0.033)
Panel B - Dependent variable		<i>ENVDISC</i>	<i>ENVDISC</i>	
<i>LENVP</i>	+	***17.120	***8.063	
<i>ANFOLL</i>	+	***0.719	**0.419	
<i>FSIZE</i>	+	0.733	*0.643	
<i>LEV</i>	+/-	7.860	3.988	
<i>ROA</i>	+	3.309	*5.994	
Chi2		28.1(0.00)	18.2(0.00)	
Panel C - Dependent variable		<i>SOCDISC</i>		<i>SOCDISC</i>
<i>ANFOLL</i>	+	***2.139		***2.064
<i>FSIZE</i>	+	***5.307		***6.562
<i>LEV</i>	+/-	*-16.194		*-19.44
<i>ROA</i>	+	4.909		0.002
Chi2		55.5(0.00)		60.4(0.00)
Panel D - Dependent variable			<i>GOVSCORE</i>	<i>GOVSCORE</i>
<i>ANFOLL</i>	+		**0.359	***0.364
<i>FSIZE</i>	+		***1.950	***2.171
<i>LEV</i>	+/-		6.423	5.454
<i>ROA</i>	+		***11.162	***10.641
Chi2		-		36.2(0.00)
N		192	192	192
Outliers		2	8	0

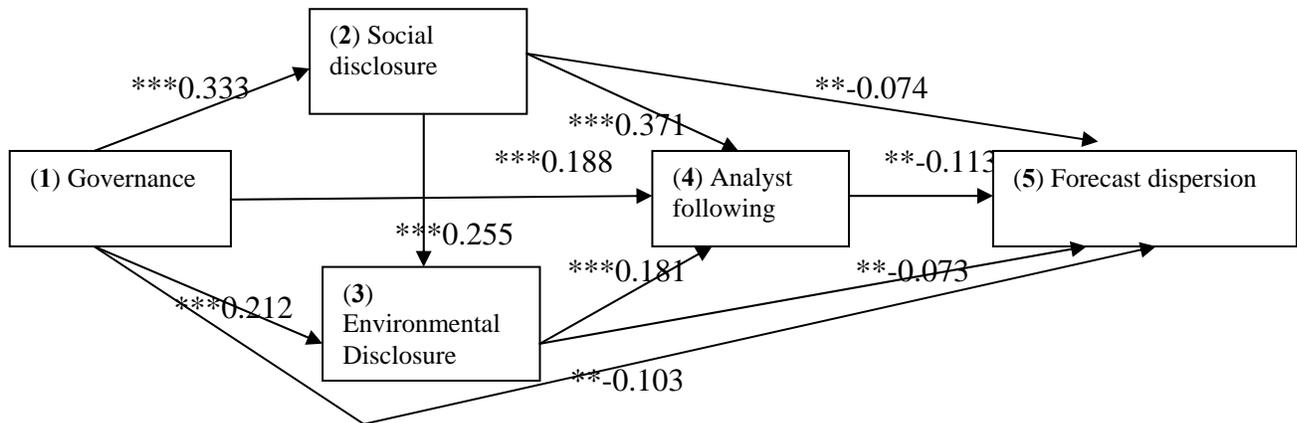
FORDIS is the standard deviation of EPS forecasts scaled by the absolute value of mean expected EPS; *SYSRISK* is the systematic risk (beta); *NEGEPS* is 1 if negative EPS, 0 otherwise; *ANFOLL* is the number of analysts following a firm; *LENVP* low environmental performance is a binary variable taking the value of 1 if environmental performance less the mean value for the industry is positive, zero otherwise; *GOVSCORE* is the governance score; *ENVDISC* is environmental disclosure; *SOCDISC* is social disclosure; *FSIZE* is firm size; *LEV* is leverage; *ROA* is return on assets.

Table 7
OLS Estimation of the Relationship between Analyst Forecast Consensus and Social / Environmental Disclosure in Interaction with Corporate Governance (with robust estimators)

N: 192		<i>Environmental / social disclosure</i>	<i>Environmental disclosure / Governance</i>	<i>Social disclosure / Governance</i>
Dependent variable: <i>CONSENSUS</i>				
<i>BETA</i>	+	***0.147	-0.038	-0.068
<i>NEGEPS</i>	+	***0.352	***0.219	***0.262
<i>ANALYSTS</i>	+	***0.033	0.002	*0.007
<i>ENVDISC</i>	+	**0.003	*0.011	
<i>SOCIALDISC</i>	+	***0.003		**0.007
<i>ENVDISC*SOCDISC</i>	-	***-0.001		
<i>ENVDISC*GOVSCORE</i>	-		**-0.001	
<i>SOCDISC*GOVSCORE</i>	-			**-0.001
<i>GOVSCORE</i>	+		***0.011	***0.009
Test of coefficient difference				
<i>SOCDISC</i> and <i>ENVDISC*SOCDISC</i>		7.70(0.006)		
<i>ENVDISC</i> and <i>ENVDISC*GOVSCORE</i>			1.82(0.179)	
<i>SOCDISC</i> and <i>SOCDISC*GOVSCORE</i>				3.16(0.077)
R-Square		8.5%	8.8%	6.9%
F-Statistic		2.60(0.01)	3.65(0.00)	3.00(0.00)
Outliers		14	13	0

CONSENSUS measures the ratio precision of common information (h) to the precision of their total information (h+s); *FORDIS* is the standard deviation of EPS forecasts scaled by the absolute value of mean expected EPS; *SYSRISK* is the systematic risk (beta); *NEGEPS* is 1 if negative EPS, 0 otherwise; *ANFOLL* is the number of analysts following a firm; *ENVDISC* is environmental disclosure; *SOCDISC* is social disclosure; *LENVP* low environmental performance is a binary variable taking the value of 1 if environmental performance less the mean value for the industry is positive, zero otherwise; *GOVSCORE* is the governance score.

Figure 1a[‡]
Path Analysis
Governance, Disclosure, Analyst Following and Forecast Dispersion



*, p < 0.10; **, p < 0.05; ***, p < 0.01 two-tailed.

[‡]We use standardized regression coefficients (Beta) as path coefficients.

Path decomposition

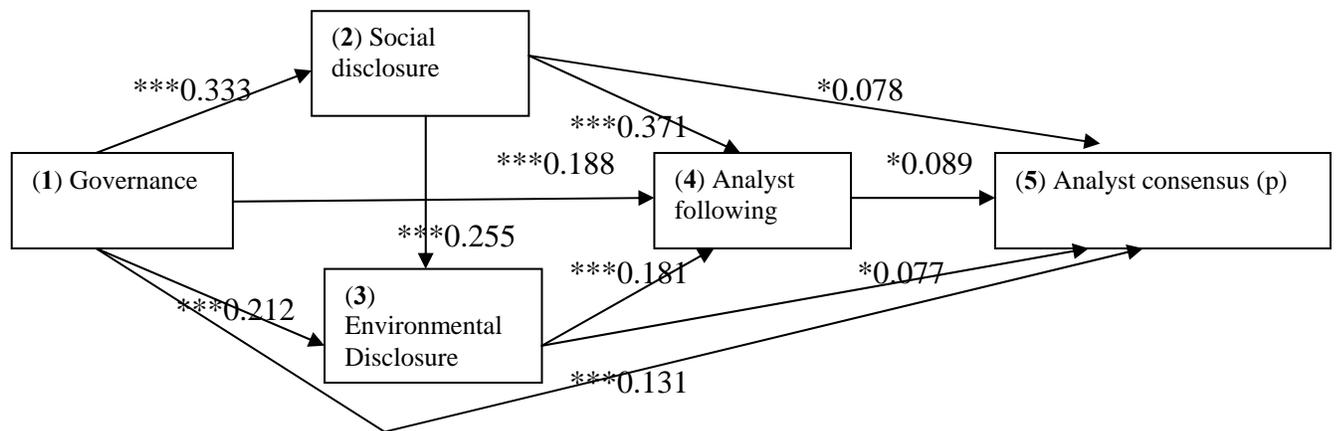
Direct effect

(1) (2) 0.333 = 0.333 Governance / Social disc

Total effect

(1) (3) $0.212 + 0.255 * 0.333$ = 0.297 Governance/ Env. disclosure
 (1) (4) $0.181 + 0.333 * 0.371 + 0.212 * 0.181$ = 0.350 Governance/ Analyst following
 (1) (5) $0.103 + 0.188 * 0.113 + 0.212 * 0.073 + 0.333 * 0.074$ = **-0.164** Governance/ Forecast dispersion
 (2) (4) $0.371 + 0.333 * 0.212$ = 0.441 Social disclosure/ Analyst following
 (2) (5) $0.074 + 0.371 * 0.113 + 0.333 * 0.212$ = **-0.184** Social disclosure/ Forecast dispersion
 (3) (4) $0.181 + 0.333 * 0.212$ = 0.252 Env. disclosure/ Analyst following
 (3) (5) $0.073 + 0.181 * 0.113 + 0.333 * 0.212$ = **-0.172** Env. disclosure/ Forecast dispersion

Figure 1b[‡]
Path Analysis
Governance, Disclosure, Analyst Following and Analyst Consensus (p)



*, p < 0.10; **, p < 0.05; ***, p < 0.01 two-tailed.

[‡]We use standardized regression coefficients (Beta) as path coefficients.

Path decomposition

Direct effect

(2) (2) 0.333 = 0.333 Governance / Social disc

Total effect

(2) (3) $0.212 + 0.255 * 0.333$ = 0.297 Governance/ Env. disclosure
 (1) (4) $0.188 + 0.333 * 0.371 + 0.212 * 0.181$ = 0.350 Governance/ Analyst following
 (1) (5) $0.131 + 0.188 * 0.089 + 0.212 * 0.077 + 0.333 * 0.078$ = **0.189** Governance/ Consensus
 (2) (4) $0.371 + 0.333 * 0.212$ = 0.441 Social disclosure/ Analyst following
 (2) (5) $0.078 + 0.371 * 0.089 + 0.333 * 0.212$ = **0.182** Social disclosure/ Consensus
 (3) (4) $0.181 + 0.333 * 0.212$ = 0.252 Env. disclosure / Analyst following
 (3) (5) $0.077 + 0.181 * 0.089 + 0.333 * 0.212$ = **0.168** Env. disclosure/ Consensus

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Appendix 1

Environmental Disclosure Grid

Expenditures and risks	Sustainable development
Investments	Natural resource conservation
Operation costs	Recycling
Future investments	Life cycle information
Future operating costs	Land remediation and contamination
Financing for investments	Sites
Environmental debts	Efforts of remediation
Risk provisions	Potential liability- remediation
Risk litigation	Implicit liability
Provision for future expenditures	Spills (number, nature, efforts of reduction)
Laws and regulations	Environmental management
conformity	Environmental policies or company concern for the environment
Litigation, actual and potential	Environmental management system
Fines	Environmental auditing
Orders to conform	Goals and targets
Corrective action	Awards
Incidents	Department, group, service affected to the environment
Future legislation and regulations	ISO 14000
Pollution abatement	Involvement of the firm in the development of environmental standards
Emission of pollutants	Involvement in environmental organizations (industry committees, etc.)
Discharges	Joint projects with other firms providing environmental management services
Waste management	
Installation and process controls	
Compliance status of facilities	
Noise and odours	
Energy consumption/conservation	

Rating scale:

3: Item described in monetary or quantitative terms; 2: Item described specifically; 1: Item discussed in general

Appendix 2 Social Disclosure Grid

Labour practices and decent work

Employment opportunities
Labour rights / Job creation
Equity programs
Human capital development / training
Accidents at work
Health and safety programs
Social activities
Diversity and equal opportunity: Gender; cultural; corporate governance bodies

Human rights

Management: Investment; procurement practices; supply chain
Social rights: risk; violation; discrimination; promotion
Freedom of association and collective bargaining
Abolition of child labor: ILO Code
Prevention of forced and compulsory labor
Complaints and grievance practices
Security practices
Indigenous rights
Civil and political rights

Society

Regional, educational, and cultural development
Gifts and sponsorships and philanthropy
Bribery and Corruption
Wealth and income creation
Respect for property rights
Public Policy: Political lobbying and contributions
Business ethics /Anti-Competitive behavior
Promoting social responsibility in the sphere of influence
Community: Involvement; development; investment representation (board committees)

Consumer and product responsibility

Purchases of goods and services
Customer health and safety: Complains; code compliance
Product-related-incidents
Products development and environment: Access to essential services; sustainable consumption
Consumer service, support, and dispute resolution
Product Information Labeling: Complaints; consumer satisfaction
Marketing Communications (Advertising): Standards and code
Education and awareness
Customer Privacy

Rating scale:

3: Item described in monetary or quantitative terms; 2: Item described specifically; 1: Item discussed in general

Appendix 3

Corporate Governance Grid (Board Games -The Globe & Mail)

Board Composition (31 marks out of 100)

1. What percentage of the company's directors are fully independent? Four marks for boards with at least two-thirds independents. Two marks if more than 50 per cent of directors are independent. Zero marks if there is a majority of related directors.
2. What percentage of the audit committee is fully independent? Three marks if the committee is fully independent. One mark if there are one or more related directors who are not management. Zero marks if a member of management is on the committee.
3. What percentage of the compensation committee – the committee that determines executive pay – is fully independent? Two marks if the committee is fully independent. One mark if there are one or more related directors who are not management. Zero marks if a member of management is on the committee or if there is no committee.
4. What percentage of the nominating committee – the committee responsible for recommending new directors to join the board – is fully independent? Two marks if the committee is fully independent. One mark if there are one or more related directors who are not management. Zero marks if a member of management is on the committee or if there is no committee.
5. Is the role of chairperson and CEO split? Four marks if the roles are split and there is a fully independent chairperson. Two marks if they are split, but the chairperson is a related director. One mark if they are split, but the chairperson is a member of management. Zero marks if the roles are not split.
6. a) Do two or more directors sit together on two or more other boards of publicly traded companies, creating the potential for a close-knit bloc of directors? Or, do three or more directors sit on any other corporate board? One mark if no, zero if yes.
6. b) Do any directors sit on five or more S&P/TSX company boards? One mark if no, zero if yes.
7. Are there any women on the board? Four marks if at least 33 per cent of directors are women. Two marks if 25 per cent to 33 per cent of the board are women. One mark if there is at least one woman on the board. Zero marks if there are no women.
8. Does the board have a system to evaluate its performance? Three marks if there is a formal board evaluation and a formal individual director evaluation including peer review, with detailed disclosure of what sort of process is used for both. Two marks if there is a formal board evaluation and director evaluation, but no peer review. Also two marks if the company has a formal peer review process but does not mention or describe any board or committee review process. One mark if there is a formal board assessment, but not an assessment of individual directors, or if there is reference to a director assessment but not board or committee review. Zero marks if there is no evaluation or there is only vague description of how the assessment is done with no details of the process used.
9. Do independent directors meet without management? Three marks if they meet without management at every board meeting. Two marks if they meet without management at regular board meetings, but not all board meetings. One mark if they meet sometimes, but not every regular board meeting. Zero marks if there is no mention or if there are no meetings without management. Also zero marks if the company uses vague wording – for example, that “time is available for in-camera meetings” – that do not specify whether the meetings are actually held.
10. Does the company disclose the process the board uses to manage succession planning for the CEO's job? Disclosure must go beyond simply noting that the board or one of its committees is responsible for managing succession planning. There must be evidence a formal process is in place, and some detail of how the board approaches the task must be given. Two marks if yes, zero if no.
11. Does the company provide information about its director education processes for the year, and is there evidence that a formal process is in place? This could include information about educational events offered to the entire board

during the year, site visits to company facilities by directors, or specifics about special briefings, courses or training offered to some or all directors. Two marks if the company fully describes education processes, lists training sessions held in the prior year and identifies which directors attended. One mark if the company gives a full description of education processes but leaves out some details about events and who attended. Zero if no description or if there is little specific detail.

Shareholding and compensation (26 marks out of 100)

12. a) Are directors required to own shares or share units? (Stock options don't count.) Four marks if the requirement is equal to at least three times the retainer paid to directors – including the value of grants of shares or share units. Two marks if there is a requirement, but it is lower than three times the value of the retainer and share units. Zero marks if there is no requirement.

12. b) How many shares do directors own? Four marks maximum, but minus one mark for each director who owns less than three times the annual retainer plus the value of grants of shares, share units or options. If a director has been on the board less than one year, the ownership requirement does not apply. If a director has been on the board one to two years, the required ownership level is reduced to one times the retainer and share units.

13. a) Is the CEO required to own shares? (Stock options don't count.) Two marks if there is a requirement to own at least three times the base salary, or if the CEO is the company's controlling shareholder. One mark if there is a requirement to own one to two times the base salary. Zero marks if there is no requirement or if the requirement is less than one times the base salary.

13. b) Does the CEO own shares? Three marks if the CEO owns shares worth at least triple his or her base salary. Two marks if the CEO owns shares worth at least double his or her base salary. One mark if the CEO owns one to two times his or her base salary. Zero marks if the CEO owns shares worth less than one time his or her base salary. No ownership rule for CEOs on the job for less than one year.

14. a) How well does the company disclose the compensation policies it applies when deciding CEO bonuses? Does it provide a percentage weighting of the factors that are considered in determining the CEO's bonus? One mark if yes, zero if no.

14. b) Does the company provide details of the specific target amounts that have to be achieved in each area? Two marks if all target specifics are given, one mark if targets are given but all specifics are not provided. Zero if no target details are provided.

14. c) Does the company explain the outcome of what actually happened with the performance goals and how the outcome affected the CEO's bonus? One mark if yes, zero if no.

15. a) Does the company disclose whether or not cash bonus or performance share unit plan payouts are based on performance relative to a peer group of similar companies? This means compensation is affected by a company's comparative performance and not just improvements in absolute terms, addressing concerns that executives can underperform their peers but be paid a bonus for better results that are due to external economic factors. One mark if yes. Zero marks if no, or if the company only uses a peer group for benchmarking general pay levels but not performance-based pay levels.

15. b) Does the company disclose the composition of the peer group it uses for performance benchmarking? One mark if yes. Zero marks if no, or if no peer group is used. Also zero marks if the company only uses a peer group for benchmarking general pay levels and not performance-based pay levels.

15. c) Does the company explain the rationale for the peer group it has chosen for performance benchmarking? For example, a company might say peer group members are similar-sized companies or operate in the same industry or have similar business characteristics. One mark if yes, zero marks if no. If the company only uses a peer group for benchmarking general pay levels and not performance-based pay levels, no points will be given.

16. Are there performance hurdles for stock options or share units, beyond simply requiring the share price to rise over time? One mark if yes, zero if no.

17. Does the company disclose the total value of the CEO's accumulated shares, share units and other equity holdings? (The company must provide the value, and not just number of units held). Two marks if yes, zero if no.

18. Does the company disclose the gains reaped by executives from exercising stock options over the prior year? Two marks if yes, zero if no.

19. Does the company disclose the total cost of compensation to the top executive team as a percentage of the total profit or total shareholder return for the year, or does the company include a table or graph that compares total executive compensation to financial performance over at least three years? One mark if yes, zero if no.

Shareholder rights (31 marks out of 100)

20. a) Does the company allow shareholders to vote for individual directors, or only the entire slate of nominees? Three marks if there is voting for individual directors with clear options beside each director's name. One mark if investors must cross out or write in the names of directors for whom they are not voting. Zero marks if there is only slate voting.

20. b) Does the company have a majority voting policy, asking directors to resign if they do not receive a majority of votes in support? Three marks if yes, zero if no.

20. c) Does the company give shareholders an advisory vote on executive compensation (known as say on pay)? Two marks if yes, zero if no.

20. d) Does the company report its annual voting results for each item on the proxy, including the number or percentage of shares voted on each matter? (Note: It must be clear how many votes were cast both "for" and "withheld" either by giving both numbers, or by giving "for" and the total number of votes cast. Just disclosing the "for" vote alone without context is not sufficient. For directors, it is not sufficient to give an average voting result). One mark if yes, zero if no.

21. Does the company disclose it has a provision to "claw back" bonus payments to the CEO if wrongdoing is discovered late? One mark if yes, zero if no.

22. Does the company have a holding period for shares after a CEO leaves the company to ensure there is a performance "tail" to the CEO's work? This is an incentive to make good long-term decisions prior to departure. One mark if yes, zero if no.

23. a) Are stock options excessively dilutive? Dilution is based on the number of options outstanding at the company's fiscal year-end as well as the number of options approved for future issuance, expressed as a percentage of all shares outstanding. Where the company has more than one class of shares, dilution is measured for whichever class of shares is diluted by the outstanding options. Two marks if the dilution is less than 5 per cent of outstanding shares, or if the company has no option plan. One mark if the dilution is between 5 per cent and 8 per cent of outstanding shares. Zero marks if the dilution is over 8 per cent. Zero marks if the company has adopted an evergreen option plan that automatically "reloads" the number of options available for issuance – even if the option dilution level falls within the guidelines listed above. Also zero marks if the company has re-priced any of its options within the prior year.

23. b) Is the annual stock option grant rate excessive? Two marks if the number of options granted in the prior fiscal year was less than 1 per cent of all shares outstanding. One mark if the grant rate was between 1 per cent to 1.49 per cent. Zero marks if the grant rate exceeded 1.5 per cent annually.

23. c) Is there a vesting period before options can be exercised? Three marks if yes. Zero marks if some options vest in less than 12 months after issuance, including director options.

24. a) Does the company calculate and display the year-end dilution level of stock options as a percentage of shares outstanding? One mark if yes, zero if no.

24. b) Does the company calculate and display the prior year's grant rate for option grants as a percentage of shares outstanding? One mark if yes, zero if no.

25. Does the company award stock options to directors? One mark if no, zero if yes.

26. Are there non-voting or subordinate voting shares? Ten marks if there are no dual-class shares. Marks are reduced depending on the gap between the percentage of votes controlled by the superior voting shares and the percentage of the company's equity they represent, using the following guidelines: Four marks if the ratio is less than 3:1. Three marks if the ratio is between 3:1 and 4:1. Two marks if the ratio is between 4:1 and 5:1. Zero marks if the ratio is 5:1 or worse. If the company has no dual-class shares, but has other unequal voting rights, use the following two-part marking scheme instead of the above:

a) Can shareholders elect the whole board, or are some directors appointed (by a shareholder or manager, for example) so that their names don't appear on the proxy ballot? Five marks if all are elected, three marks if one

director is appointed and not elected, two marks if more than one is appointed if not a majority, zero marks if a majority are appointed and not elected.

b) Does any party – an administrator, manager or shareholder, for example – have rights unequal to ownership? Can any party nominate a number of directors out of proportion to ownership? Can anyone veto key issues – such as changes to senior management, or assets sales and purchases – without owning a majority of the shares? Five marks if all rights are equal, three marks if a party has disproportionate rights compared with ownership stake, zero marks if a party has rights that have little or no relationship to ownership stake.

Disclosure (12 marks out of 100)

27. Does the company provide a full explanation of which directors are related and unrelated and why? One mark if full disclosure, and if the disclosure is included in the part of the proxy circular where companies disclose which directors on the board are related or unrelated. Zero marks if company does not disclose a director's relationship in the proxy circular.

28. a) Does the company disclose detailed biographies to explain directors' qualifications to represent shareholders? Does the biography demonstrate why this director is a good candidate for election? Relevant information might include educational background, non-profit affiliations, industry experience, career highlights or special achievements. One mark if yes, zero marks if not.

28. b) Does the proxy circular specify the skills or areas of expertise of each director in the form of a "skills matrix" or in another format? The details must be explicitly laid out – it is not adequate to assume they can be inferred by reading a basic biography. One mark if yes, zero if no.

29. Did directors attend all meetings, and does the company remove directors with poor attendance? Two marks if all board and committee meeting attendance is disclosed and board members attended at least three-quarters of board and committee meetings. One mark if any board member has missed more than one-quarter of meetings and is not put up for re-election. Zero marks if committee attendance is not disclosed, or if a board member or a committee member missed more than one-quarter of meetings and is put up for re-election.

30. a) Does the company disclose the total accumulated value (a dollar amount, not just number of units held) of directors' equity holdings, including shares and share units? Two marks if yes, zero if no.

30. b) Does the company explain how each director's share ownership meets (or fails to meet) the required share ownership guideline? For example, does the equity ownership chart include a column showing how the ownership compares to the requirement as a percentage, multiple or dollar value compared to the requirement? One mark if yes, zero if no. Zero if there is no ownership requirement.

31. a) Does the company disclose the dollar value of fees paid to an outside compensation consultant? One mark if yes or if no consultant was used, zero if no.

31. b) Does the company disclose whether the compensation consultant provided any other services in the prior year, and, if so, how much money was paid for the other services? One mark if yes or if no consultant was used, zero marks if no.

32. a) Does the company disclose directors' ages? One mark if yes, zero marks if no.

32. b) Does the company disclose whether or not it has a retirement policy for directors, and what the details of the policy are? One mark if yes, or if company states it has no retirement policy for its directors. Zero marks if no disclosure.