

Corporate governance and information asymmetry between managers and investors

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Abstract

Purpose – *The purpose of this paper is to investigate the impact of governance on information asymmetry between managers and investors. Hence, the paper seeks to extend prior voluntary disclosure research.*

Design/methodology/approach – *The paper investigates how a firm's governance maps into the level of information asymmetry between managers and investors. Governance encompasses two complementary dimensions: formal monitoring attributes and voluntary disclosure about board processes. Information asymmetry is measured by either share price volatility or Tobin's Q.*

Findings – *The results show that some formal monitoring attributes (board and audit committee size) as well as the extent of voluntary governance disclosure reduce information asymmetry. This suggests that governance disclosure may complement a firm's governance monitoring attributes, especially in a country such as Canada where investors have good legal protection. It appears also that firms take into account ultimate costs and benefits to shareholders when determining their governance disclosure.*

Originality/value – *To the best of the authors' knowledge, this study is the first to investigate the impact of voluntary governance disclosure on information asymmetry.*

Keywords *Corporate governance, Disclosure, Information control, Information transfer, Canada*

Paper type *Research paper*

Introduction

Financial scandals such as Enron, WorldCom or Hollinger International raise many questions about the potential relation between a firm's governance and its value or performance. For instance, in appearance, these firms had all the attributes of good governance, such as an independent board, an independent audit committee, etc. However, information transpiring in the aftermath of their failure reveals that these firms' actual governance processes were ineffective and dominated by management. It would have been hard to reach such a diagnostic solely on the basis of mandated disclosure.

This paper investigates how a firm's governance maps into the level of information asymmetry between managers and investors. Our investigation is based on information economics theory, which suggests that voluntary disclosure reduces information asymmetry between managers and investors. In that regard, information economics research attempts to address one of the key challenges underlying any relationship between investors and managers, which is the information differential between a principal and its agent, that is typically to the advantage of the agent (Jensen and Meckling, 1976). A key aspect of the information differential relates to a firm's governance. In that regard, governance encompasses two complementary dimensions:

1. formal monitoring attributes; and
2. voluntary disclosure about board processes.

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Most prior research defines governance in terms of visible formal board attributes such as the proportion of independent directors (e.g. Ashbaugh-Skaife *et al.*, 2006; Larcker *et al.*, 2007). However, there is evidence that voluntary disclosure about governance issues can enhance a firm's overall governance (e.g. Craighead *et al.*, 2004, on executive compensation disclosure). In this study, we estimate simultaneously the determinants of governance disclosure and the impact of governance disclosure on information asymmetry.

An underlying investors' concern about corporate governance is its potential impact on value creation. While recent research efforts are consistent with that definition of governance, they tend to focus on formal governance attributes (e.g. Bhagat and Bolton, 2008). Within such a perspective, the key task facing boards of directors is to put forward and monitor a value creation agenda. Building upon that view, the Canadian Coalition for Good Governance, a group representing large institutional investors, argues that effective monitoring will reassure investors that a Company's board and management have appropriate strategies, structures and controls in place to maximize shareholder value (Canadian Coalition for Good Governance, 2005, p. 2). In contrast, our paper rests on the assumption that governance key contribution goes beyond the enhancement of firm value through decisions on strategic and business issues and is actually about the reduction in information asymmetry between managers and investors.

We focus on a sample of large Canadian firms, many of which are cross-listed in the USA. Information about governance, both mandated and voluntary, is obtained from the firms' web sites. The Canadian legal and audit environments offer investors with very high protection of their interests but are not as litigious as in the USA, thus providing firms with a unique opportunity to issue voluntary information about their governance without the fear of exposing themselves to legal consequences.

Results show that the extent of corporate governance disclosure, board size and audit committee size reduce information asymmetry. This suggests that governance disclosure may serve as a complement of a firms' governance mechanism in reducing stock market asymmetry, especially in a country like Canada where legal protection of investors is high. In other words, voluntary disclosure about corporate governance is more likely to be credible within an effective legal regime. In addition, it appears that firms consider ultimate costs and benefits to shareholders when determining the corporate governance disclosure.

To the best of our knowledge, our study is the first to investigate the impact of voluntary governance disclosure on information asymmetry between management and investors, taking into account corporate governance attributes.

The remainder of the paper is organised as follows. Section 2 contains a theoretical background. The study's methodology is described in section 3. Results are presented in section 4. Finally, section 5 provides a discussion of the results' potential implication.

Governance disclosure: determinants and implications

Governance and information asymmetry

Our investigation is based on information economics theory that posits that voluntary disclosure by a firm reduces information asymmetry and lowers its cost of capital. This outcome occurs because greater transparency enhances stock market liquidity, and reduces transactions costs for a firm's stock (Diamond and Verrecchia, 1991).

Several approaches coexist for the purpose of assessing a firm's information asymmetry. Francis *et al.* (2005), Leuz and Verrecchia (2000), Healy *et al.* (1999) and Welker (1995) show that disclosure quality lowers information asymmetry – as proxied by bid-ask spread, share price volatility or stock liquidity. Other studies rely on Tobin's *Q* or market-to-book ratio (e.g. Aerts *et al.*, 2007; Clarkson *et al.*, 2008), for assessing the impact of voluntary disclosure on information asymmetry.



A few studies document an association between corporate governance and stock returns or firm value (e.g. Gompers *et al.*, 2003; Chen *et al.*, 2003; Beiner *et al.*, 2006). More specifically, Chen *et al.* (2003) document that investing in firms with a high corporate governance index generates on average abnormal return of around 8.5 percent. Regarding the disclosure of corporate governance practices, on average, the authors find that such disclosure reduces the cost of equity capital by 0.47 percent while a good corporate governance ranking reduces a firm's cost of equity capital by around 1.26 percent. We must mention that the coefficient for governance disclosure is only marginally significant. The authors argue that the superiority of corporate governance mechanisms over disclosure in reducing the cost of capital is dependent upon the legal protection granted to investors as well as the overall level of corporate governance in the economy. In addition, Chen *et al.* (2003) find that governance disclosure plays a weak role in reducing the cost of capital in Asian emerging markets. They argue that this is due to a lack of effective governance mechanism. Focusing on European firms, Vander Bauwhede and Willekens (2008) argue that firms disclose corporate governance information to reduce information asymmetry and agency costs stemming from the separation between ownership and control, thus improving investor confidence in the reported accounting information. Using ratings on corporate governance disclosure issued by an independent rating agency, the authors show that the level of disclosure is lower for firms with higher ownership concentration and higher for companies from common-law countries[1].

Therefore, we argue that voluntary governance disclosure may complement a firm's governance attributes in reducing stock market asymmetry, especially in a country like Canada where legal protection of investors is high[2]. In such a context, voluntary disclosure about corporate governance is more likely to be perceived as credible by investors.

Governance and monitoring

Prior studies show that a firm's governance influences the quality of its voluntary disclosure (Eng and Mak, 2003). More specifically, the intensity of monitoring by a board has a direct influence on managerial discretion and typically requires firms to engage in more extensive organisational performance measurement and reporting (Fama, 1980). In this vein, Leuz *et al.* (2003) suggest that earnings management increases with inside control.

Chen and Jaggi (2000) document that a board that comprises mostly independent non-executive directors is more likely to be associated with comprehensive financial disclosure. Another example is provided by Karamanou and Vafeas (2005), who show that firms with better governance are more likely to issue voluntary earnings forecasts. However, Cheng and Courtenay (2005) find that the relation between governance and disclosure is enhanced if there is an efficient regulatory environment. Furthermore, Holder-Webb *et al.* (2008) find that smaller firms offer fewer disclosures pertaining to board independence, board selection procedures, and oversight of management (including whistle-blowing procedures). They also observe that less independent boards disclose less about independence and management oversight matters. Moreover, large firms provide more disclosure about independence standards, board selection procedures, audit committee matters, management control systems, other committee matters, and whistle-blowing procedures but do not appear to have a strictly superior information environment when compared to smaller firms.

Finally, there is evidence that stock options can align manager interests with shareholder interests. However, contracting costs may lead to incomplete contracts and agency conflicts. Aboody and Kasznik (2000) show that managers with stock-based compensation mislead shareholders by accelerating bad news and by delaying good news, thus potentially reducing the exercise price of coming stock option grants. Hence, governance disclosure is likely to be opportunistically affected by the presence of CEO stock options.



Method

Sample

The sample comprises 131 observations of web disclosure for the year 2005[3]. Governance disclosure was collected from web sites in Spring 2005 (see the Appendix). Financial data were collected from the Stock Guide and data about governance attributes was collected from 2004 proxy statements, i.e. those available in Spring 2005. The final sample comprises 131 firms since, out of the initial sample of 155 firms, there are missing data for board size and board independence (two firms), stock options (12 firms), and share volatility (ten firms). The 131 sample firms represent more than 80 percent of the Toronto Stock Exchange stock market capitalization for non-financial firms and 44 percent of its total capitalization. Sample firms operate in the following industries:

- metals and mines;
- gold and precious metals;
- oil and gas;
- paper and forest products;
- consumer products;
- industrial products;
- real estate;
- utilities;
- communication and media; and
- merchandising.

Empirical model

This study attempts to provide an integrated analysis of firms' web-based governance disclosure strategy. We posit that this strategy affects simultaneously information asymmetry and disclosure. Based on prior literature, we use share price volatility and Tobin's Q as proxies for information asymmetry. The following structural equations summarize the approach adopted in the empirical analysis[4]:

$$\begin{aligned} \text{Share price volatility}_{it} = & f(\beta_0 + \beta_1 \text{ systematic risk} + \beta_2 \text{ analyst following} \\ & + \beta_3 \text{ free float} + \beta_4 \text{ board independence} \\ & + \beta_5 \text{ board size} + \beta_6 \text{ board size squared} \\ & + \beta_7 \text{ audit committee size} + \beta_8 \text{ governance disclosure})_{it} \end{aligned} \quad (1.1)$$

$$\begin{aligned} \text{Governance disclosure}_{it} = & f(\beta_0 + \beta_1 \text{ new financing} + \beta_2 \text{ free float} \\ & + \beta_3 \text{ leverage} + \beta_4 \text{ profitability} \\ & + \beta_5 \text{ US listing} + \beta_6 \text{ firm size} \\ & + \beta_7 \text{ board independence} + \beta_8 \text{ board size} \\ & + \beta_9 \text{ audit committee size} + \beta_{10} \text{ CEO stock options})_{it} \end{aligned} \quad (1.2)$$

$$\begin{aligned} \text{Tobin's } Q_{it} = & f(\beta_0 + \beta_1 \text{ Inverse of Assets} + \beta_2 \text{ Profitability} \\ & + \beta_3 \text{ Board Independence} + \beta_4 \text{ Board Size} \\ & + \beta_5 \text{ Board Size Squared} + \beta_6 \text{ Audit Committee Size} \\ & + \beta_7 \text{ Governance Disclosure})_{it} \end{aligned} \quad (2.1)$$

$$\begin{aligned} \text{Governance disclosure}_{it} = & f(\beta_0 + \beta_1 \text{ new financing} + \beta_2 \text{ free float} \\ & + \beta_3 \text{ leverage} + \beta_4 \text{ profitability} \\ & + \beta_5 \text{ US listing} + \beta_6 \text{ firm size} \\ & + \beta_7 \text{ board independence} + \beta_8 \text{ board size} \\ & + \beta_9 \text{ audit committee size} + \beta_{10} \text{ CEO stock options})_{it}. \end{aligned} \quad (2.2)$$



Share price volatility is defined as the standard deviation of percentage changes in daily stock prices for 2005. Tobin's Q is defined as the market value of a firm's equity, plus the book value of its debt, divided by the book value of equity and debt at the end of 2005.

Measurement of governance disclosure

Governance disclosure is essentially based on indicators proposed by the United Nations in 2002 and updated in 2005 (United Nations, 2006)[5]. The grid comprises 17 disclosure items grouped into five categories:

1. strategic management;
2. managers;
3. directors;
4. audit committee; and
5. ownership[6].

The web content is split among qualitative elements (indicative, descriptive) and monetary or quantitative elements. The rating is based on a score of 1 to 3 per element, with each item possibly comprising many elements. A score of 3 is given for an element that is described in quantitative terms, a score of 2 when an element is described specifically, and a score of 1 for an element discussed in general[7].

Overall, emphasis on governance disclosure quality is consistent with prior work in financial/non-financial disclosure (e.g. Botosan, 1997; Association for Investment Management Research, 1992, 1993, 2000; Healy *et al.*, 1999; Lang and Lundholm, 1993, 1996; Welker, 1995; Clarkson *et al.*, 2008)[8].

Explanatory variables measurement

Determinants of information asymmetry (volatility; Tobin's Q). Prior studies on the determinants of information asymmetry component of the cost of capital suggest numerous determinants other than voluntary disclosure (Leuz and Verrecchia, 2000). Based on that literature, we use systematic risk, free float and analyst following as determinants of information asymmetry.

Analyst following. Prior studies (Atiase and Bamber, 1994; Imhoff and Lobo, 1992; Marquardt and Wiedman, 1998) argue that analyst following proxies for a firm's information that is publicly available. More specifically, Roulstone (2003) documents results that are consistent with analysts reducing information asymmetry by providing public information to market participants. A firm's analyst following is used as a proxy for the level of non-governance disclosures and the extent of a firm's communication with financial analysts (Leuz, 2003). Hence, we expect a negative (positive) relation between analyst following and share price volatility (Tobin's Q).

Systematic risk. The higher a firm's systematic risk, the more difficult it is for investors to precisely assess a firm's value and the more likely they are expected to incur information costs to assess its risk drivers. Prior research shows that investors charge a higher cost of equity for firms with higher systematic risk (e.g. Hail and Leuz, 2006; Botosan and Plumlee, 2005). A positive (negative) relation is expected between systematic risk and share price volatility (Tobin's Q).

Free float. We use free float as an inverse proxy for the presence of insiders, since control blocks have generally greater access to private information (Leuz and Verrecchia, 2000). Hence, we expect a negative (positive) association between free float and share price volatility (Tobin's Q).

Three variables are introduced to capture the impact of corporate governance attributes as a monitoring factor affecting information asymmetry:

1. board independence;
2. board size; and
3. audit committee size.



Board independence. We expect the proportion of outside directors to be associated with information asymmetry. Another aspect of board independence is the separation of the roles of Chair and Chief Executive Officer. Rechner and Dalton (1991) show that an independent leadership structure, in which two different persons are posted as Chair and CEO, monitors the top management effectively. Our variable takes the value of 0 when the majority of directors are not independent, 1 when the majority of directors are independent, and 2 when the majority of directors are independent, and the function of CEO and Chair of the board is separate. We expect a negative (positive) relationship between this variable and share price volatility (Tobin's Q).

Board size. Beasley (1996) finds a positive relationship between board size and the likelihood of financial statement fraud while Abbott *et al.* (2000) find no relationship. Furthermore, Bédard *et al.* (2004) find that board size is associated with less earnings management but only for income decreasing accruals. Some prior studies (e.g. Golden and Zajac, 2001; Vafeas, 1999) assume the relationship between board size to be an inverted U-shape, with an optimal board size existing midway. Below this optimal or most efficient board size, there is a positive relationship between board size and information asymmetry followed by a negative relationship. Yermack (1996) and Eisenberg *et al.* (1998) find an inverse relationship between board size and Tobin's Q . According to Yermack (1996), this is due to the lack of coordination and communication associated with a large board. This slows the decision making process and causes the board to be less efficient. To account for the possible non-linear relationship between board size and information asymmetry, we include board size squared in our models. Hence, we expect board size to be negatively (positive) associated with share price volatility (Tobin's Q).

Audit committee size. We put forward the view that audit committee effectiveness is a critical determinant of voluntary web-based disclosure. In Canada, audit committees must comprise at least three independent members. We can argue that three is a small number for the audit committee to play its monitoring role effectively, and that adding a few more members could be beneficial in that regard. Hence, we expect audit committee size to be negatively (positively) associated with share price volatility (Tobin's Q).

Governance disclosure. We posit that governance disclosure may serve as a complement of a firm's governance mechanisms in reducing stock market asymmetry. Therefore, governance disclosure should lead to a reduction (increase) in share price volatility (Tobin's Q).

Determinants of governance disclosure

Verrecchia (1983) argues that whether a firm will voluntarily disclose corporate information is a function of the proprietary costs associated with the disclosure. Unless there is perceived benefit that outweighs the proprietary cost, firms will not disclose.

Information costs. The decision by managers to disclose information about corporate governance is likely to be influenced by a trade-off between the direct costs to be incurred for providing such disclosure, the benefits to be derived by the firm or its shareholders from such disclosure (Scott, 1994). Hence, managers may decide to voluntarily disclose information if doing so is less costly than having investors and other market participants incur information costs themselves (Roberts, 1992; Atiase, 1985; Lang and Lundholm, 1993; Milgrom, 1981).

Two variables are used to capture investors' information needs and information costs with respect to a firm's web-based disclosure:

1. new financing; and
2. free float.

New financing. Lang and Lundholm (1993) document a positive relationship between the need for financing and voluntary disclosure (as measured by financial analysts' disclosure scores). Issues of long-term debt and equity measure actual external financing (Bujaki and McConomy, 2002; Collett and Hraskey, 2005). We expect a positive relationship between the variable new financing and governance disclosure.



Free float. Ownership structure can determine the level of monitoring and, thereby, the extent of disclosure (Eng and Mak, 2003). Ben-Amar and Boujenoui (2008), for a Canadian sample, document a negative association between the disclosure of governance practices and internal ownership (managers and board members). Therefore, a positive relationship is expected between free float and governance disclosure.

Litigation/proprietary costs. *A priori*, the magnitude of potential costs a firm faces because of disclosure is difficult to assess since it requires the identification of all parties that may use information to the firm's detriment. However, a firm's financial condition does provide a measure of its willingness to release proprietary information, since only firms that are financially sound may be able to trade off the benefits from additional disclosure with the costs of revealing potentially damaging information. Four variables proxy for a firm's ability to support proprietary costs:

1. leverage;
2. profitability;
3. US listing; and
4. firm size.

Leverage. Firms in poor financial condition may not be able to withstand the initial negative consequences that are needed to gain any benefits from more extensive disclosure. Thus, consistent with prior findings (McGuire *et al.*, 1988; Cormier and Magnan, 2003), we expect a negative relationship between a firm's leverage and governance disclosure.

Profitability. Many studies document a positive association between a firm's level of disclosure and its financial performance (McGuire *et al.*, 1988; Cormier and Magnan, 2003). A positive relationship is expected between profitability and governance disclosure.

US listing. US listed firms are meant to face disclosure pressures internationally (Leuz and Verrecchia, 2000). Debreceeny *et al.* (2002) find that in addition to a firm's size, listing on US exchange is a specific determinant of internet financial reporting. Hence, we expect a positive relationship between US listing and governance disclosure.

Firm size. Prior evidence is consistent in showing a positive relation between the extent of corporate disclosure and firm size (Scott, 1994; Cormier and Magnan, 1999; Neu *et al.*, 1998; Eng and Mak, 2003). Firm size proxies also other factors, such as the extent of monitoring by analysts. Under these conditions, firm size is introduced with an expectation of a positive relationship with governance disclosure.

Governance and monitoring. Four variables are introduced to capture the impact of corporate governance as a monitoring factor affecting governance disclosure:

1. board independence;
2. board size;
3. audit committee size; and
4. CEO stock options.

We expect a positive relationship between board effectiveness and corporate governance disclosure. As for the variable CEO stock options, we argue that the importance of contracting costs may lead to incomplete contracts and agency conflicts. We expect the voluntary nature of governance disclosure to be opportunistically affected by the presence of CEO stock options. Since the actual impact of stock options on reporting is unclear, no directional predictions are made.

Variable measurement

The measurements criteria for the variables are shown in Table I.



Table I Measurement of variables

<i>Independent variables</i>	<i>Measure</i>
<i>Information costs</i>	
Systematic risk	Beta
New financing	Long-term debt borrowing plus stock issued scaled by total assets.
Free float	The percentage of shares that are not closely held (total shares outstanding minus control blocks of 10 percent or more)
Analyst following	Number of analysts following a firm
<i>Litigation/proprietary costs</i>	
Leverage	Long term debt/total assets
Profitability	Return on assets
US listing	SEC registration (binary variable 1; 0 if not).
Firm size	Ln(Total Assets) as of year end
<i>Governance/monitoring</i>	
Board independence	0 if a majority of directors are not independent; 1 if a majority of directors are independent; and 2 if a majority of directors are independent and if the function of CEO and Chair of the board is separated
Board size	Number of directors on the board
Audit committee size	Number of audit committee members
Board meetings	Number of board meetings
Audit committee meetings	Number of audit committee meetings
CEO stock options	Value of in-the-money exercisable stock options/salaries + bonus

Results

Descriptive statistics

Table II provides some descriptive statistics about sample firms' independent variables. Sample firms are relatively large (total assets averaging 5bn Canadian dollars). About 78 percent of sample firms have a diffuse ownership, with more than 50 percent being publicly traded in the USA. Close to 9 percent of sample firms have recently relied on capital markets for additional financing. On average, CEOs' value of in-the-money exercisable stock options

Table II Descriptive statistics

	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
<i>Information asymmetry</i>				
Share price volatility	0.818	10.385	2.233	1.494
Tobin's Q	0.751	9.862	1.997	1.294
Systematic risk	0	2.71	0.682	0.489
Analyst following	0	35	6.829	5.888
<i>Information costs</i>				
New financing	0	0.70	0.086	0.119
Free float	0.098	0.999	0.776	0.225
<i>Litigation/proprietary costs</i>				
Leverage	0	2.00	0.220	0.214
Profitability	-1.07	0.56	0.035	0.131
US listing	0	1	0.511	0.501
Firm size (total assets, millions of Canadian dollars)	26	40,076	4 844	7,226
<i>Governance/monitoring</i>				
Board independence	0	2	0.909	0.515
Independent directors	0	0.860	0.360	0.178
Board chair duality	0	1	0.200	0.401
Board size	4	18	9.987	2.755
Audit committee size	2	9	3.980	1.103
Board meetings	4	28	9.592	6.603
Audit committee meetings	0	44	6.267	3.941
CEO stock options	0	229	1.786	21.715

represents almost twice their salary and bonus. Independent directors represent around 36 percent of total board membership, while the CEO and board chair functions are combined for 20 percent of the firms.

As illustrated in Table III, the corporate governance disclosure score is on average 17.94. Among disclosure components, strategic management (6.18) and directors (6.69) exhibit the highest scores. Internal consistency estimates (Cronbach's α on score components) show that the variance is quite systematic ($\alpha = 0.75$ for total governance score and varying from 0.68 to 0.81 for individual components). This is slightly higher than Botosan (1997), who finds an α of 0.64 for an index including five categories of disclosure in annual reports. According to Nunnally (1978), a score of 0.70 is acceptable.

Multivariate analyses

Since we posit that firms' information dynamics affect disclosure and share price volatility simultaneously, we first use a Hausman test to assess whether or not interrelations exist between these variables. We reject the null hypothesis of no endogeneity with respect to share price volatility and governance disclosure (t -test = 2.44; $p < 0.016$) and concerning Tobin's Q and governance disclosure (t -test = 1.80; $p < 0.074$)[9].

Table IV reports results of a three-stage estimation model regarding the simultaneous test of share price volatility and governance disclosure. The seemingly unrelated regression (SURE) method is used. Consistent with our expectation, the results show a negative and significant relation between share price volatility and the extent of governance disclosure (-0.023 ; $p < 0.010$). Concerning the disclosure components, three out of five components (strategic management: -0.048 ; $p < 0.010$; directors: -0.029 ; $p < 0.050$; and audit committee: -0.088 ; $p < 0.010$) are negatively and significantly associated with a reduction in share price volatility.

Moreover, we also observe that coefficients for board size and audit committee size are negative and significant in all regressions. We also observe that board size squared is positive and significant in all regressions, suggesting a non-linear relationship between board size and share price volatility. An incremental χ^2 change test is computed to assess the incremental value relevance of specific aspects of governance disclosure coefficients. With a change in χ^2 statistic of 8.08 ($p < 0.005$) for total disclosure, 6.55 ($p < 0.010$), for strategic management, 3.38 ($p < 0.070$) for directors, and 7.25 ($p < 0.005$) for audit committee, the results show that specific aspects of governance disclosure have a marginal relevance in reducing share price volatility over governance attributes. This suggests that governance disclosure may serve as a complement of a firm's governance mechanism in reducing stock market asymmetry.

Concerning the determinants of total disclosure, we observe that information costs and benefits (free float: 12.838; $p < 0.010$; US listing: 4.806; $p < 0.010$; firm size: 3.708; $p < 0.010$) are positively related to governance disclosure, while the magnitude of the CEO's stock option value is negatively associated with governance disclosure (-0.069 ; $p < 0.100$). These results suggest that the extent of CEO stock options lead to less qualitative transparency while efficient governance attributes do not influence transparency. Moreover, results show a positive relationship between board independence and disclosure concerning managers (0.476; $p < 0.050$) and ownership (0.485; $p < 0.050$).

Table III Governance disclosure: mean scores by component

	Minimum	Maximum	Mean	SD	Cronbach's α
Strategic management	0	26	6.187	4.893	0.71
Managers	0	8	2.574	1.468	0.80
Directors	0	24	6.690	5.971	0.68
Audit committee	0	11	1.967	3.090	0.81
Ownership	0	6	0.516	1.202	0.72
Total score	1	52	17.935	11.658	0.75

Note: $n = 155$



With respect to the Tobin's Q model, results not tabulated support those presented in Table IV. The difference is that disclosure about managers is associated with a larger Tobin's Q , while disclosure about strategic management does not seem to be related to Tobin's Q .

One additional way to measure the effectiveness of a board committee is to look at the frequency of its meetings. As a first sensitivity analysis, we add board of director meetings and audit committee meetings to our models. Regarding the audit committee, best practices suggest three or four meetings per year (KPMG, 1999). The results (not tabulated) do not show any relationship between board meetings, audit committee meetings, and corporate governance disclosure. Concerning the impact of board meetings and audit committee meetings on share price volatility, the results suggest that audit committee meetings can lead to a reduction in asymmetry, while the opposite is observed for board meetings. Could it mean that a board of directors that meet repeatedly could signal of potential problems for market participants? For our sample firms, board meetings range from four to 28 meetings (mean of 9.6 meetings and median of 8.0 meetings).

As a second sensitivity analysis, we split the variable board independence into two different variables:

1. independent members (1/0); and
2. CEO not Chair of the Board (1/0).

Our results (not tabulated) suggest that an independent board has a positive impact on total disclosure (0.081; $p < 0.071$, one-tailed), Strategic management disclosure (0.038; $p < 0.056$, one-tailed), and directors' disclosure (0.047; $p < 0.054$, one-tailed). These two board independence variables neither affect stock price volatility nor Tobin's Q .

Conclusion

Overall, our results suggest that governance disclosure complements a firm's governance monitoring attributes in reducing stock market asymmetry. While the study focuses on Canada, we believe that our results extend to other jurisdictions where there is strong investor protection. We also find that managers take into account ultimate costs and benefits to stockholders when determining the extent of their governance disclosure. For example, we show that diffuse ownership leads managers to release more information about its governance, thus enhancing investors' ability to assess firm value.

The paper's contribution is four-fold. First, our findings highlight the limited insights from most prior research that infers the quality of a firm's governance from formal and observable attributes (e.g. number of independent directors, expertise of board members). Thus, the widespread reliance on indices to assess a firm's governance can be questioned as they typically sum up formal governance attributes without any nuance. Moreover, these indices treat disclosure as one among many governance elements, which contrasts with our findings that disclosure is actually complementary. Our results comfort the argument put forward by Bhagat *et al.* (2008). Second, by documenting that governance, as measured by formal attributes, may be insufficient for investors to assess its effectiveness, we build upon the stream of research that looks into the impact of corporate governance on firm value and information asymmetry (e.g. Bhagat and Bolton, 2008; Hutchison and Gul, 2003). Third, by focusing on governance disclosure, we extend the literature on voluntary disclosure into a new realm. Up until now, most prior research has focused on contrasting voluntary financial, social or environmental disclosures with formal governance attributes, thus circumventing the issue of governance disclosure itself (e.g. Sanders and Boivie, 2003). Finally, we show that voluntary governance disclosure provides additional insights into how a firm creates value, information deemed useful by investors (e.g. Bushman *et al.*, 2004). In that sense, we extend prior findings by Collett and Hraskey (2005) that voluntary governance disclosure does influence capital markets' participants.

Our findings have some implications for investors and corporate governance. For instance, to assess a firm's value, investors must look beyond standardized governance attributes and carefully analyze the process behind them, as revealed by voluntary disclosure. In addition,



Table IV Three-stage estimation of the determinants of governance disclosure and share price volatility

		Total score	Strategic management	Governance disclosure Managers	Directors	Audit committee	Ownership
<i>Dependent variable: share price volatility</i>							
Systematic risk	+	0.659***	0.659***	0.624***	0.662***	0.643***	0.664***
Free float	-	1.028*	0.868*	0.787	0.767*	1.017*	0.711
Analyst following	-	-0.044***	-0.044**	-0.046***	-0.046***	-0.049***	-0.048***
Board independence	-	0.033	0.071	0.070	0.070	0.015	0.051
Board size	-	-0.435**	-0.427**	-0.510***	-0.510**	-0.488***	-0.521***
Board size squared	+	0.016*	0.017*	0.020**	0.020**	0.018**	0.020**
Audit committee size	-	-0.221**	-0.244**	-0.232**	-0.232**	-0.215**	-0.237**
Governance disclosure	-	-0.023***	-0.048***	-0.056	-0.029**	-0.088***	-0.003
Adjusted R^2 (%)		24.8	24.7	25.0	25.1	26.1	25.1
χ^2 (p value)		48.3 (0.00)	46.6 (0.00)	41.5 (0.00)	41.5 (0.00)	48.1 (0.00)	41.4 (0.00)
Governance disclosure χ^2 change (p value)		8.08 (0.005)	6.55 (0.010)	0.25 (0.60)	3.38 (0.070)	7.25 (0.005)	0.30 (0.60)
<i>Dependent variable: governance disclosure</i>							
Information costs	+	-0.109	-1.346	0.807	-1.964	1.811	0.639
New financing	+	12.838***	3.537**	1.103**	5.525***	3.430***	-0.747
Free float	-	-4.049	-1.454	-1.335**	-2.361	1.715	-0.598
Litigation/proprietary costs	+	4.365	1.049	0.227	1.556	1.014	0.700
Leverage	+	4.806***	1.142*	0.467**	2.669***	0.328	0.243
Profitability	+	3.708***	1.367***	0.247***	1.489***	0.541***	0.125*
US listing	+	1.296	1.029	0.476**	-0.675	0.018	0.485**
Firm size	+	-0.434	0.078	-0.041	-0.279	-0.204	-0.003
Governance/monitoring	+	-0.537	-0.633	-0.010	0.173	0.045	-0.129
Board independence	+/-	-0.069*	-0.018	0.002	-0.037*	-0.013	-0.004
Board size		27.4	18.2	13.6	21.2	12.8	6.9
Audit committee size		50.1	30.5	19.4	35.1	19.9	9.7
CEO stock options		(0.00)	(0.00)	(0.03)	(0.00)	(0.03)	(0.08)
Adjusted R^2 (%)							
χ^2 (p value)							

Notes: $n = 131$. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (one-tailed if there is a predicted sign, two-tailed otherwise)

boards of directors have a clear incentive to provide additional disclosure on their methods and processes. Finally, regulators should consider expanding the scope of mandatory disclosure about governance to include softer information about underlying decisions and practices.

The results of this study should be interpreted with caution at least for two reasons. First, our measure of governance disclosure is based upon a coding instrument that makes some explicit assumptions about the value and relevance of information. However, such an approach is consistent with recent research efforts (e.g. Clarkson *et al.*, 2008). Second, sample size may be an issue. However, sample firms do represent a wide cross-section of Canada's industries as well as a significant proportion of the country's total stock market capitalization.

Future research may explore the impact of governance disclosure within a context where financial reporting encompasses more formal and comparable disclosure, for example following the adoption of international accounting standards. In addition, it may be interesting to extend the study to a multi-country setting.

Notes

1. This result is consistent with La Porta *et al.* (1997, 1998), who provide evidence of a close relationship between outside investor protection rights and the legal origin of a country's governance regime. As such, La Porta *et al.* (1997, 1998) make a distinction between common or case law countries on the one hand and code or civil law countries on the other hand, with investor protection rights being one of the main differentiating factors.
2. In Canada, in June 2005, Ontario Securities Commission released National Policy 58-201 Corporate Governance Guidelines, which makes mandatory the disclosure of some governance practices (e.g. board composition, competence, compensation, business ethics, description of board committees and their work). At the time of our data collection, firms were not yet complying with that policy. Therefore, we can suppose that web-based governance disclosure is voluntary.
3. We initially collected web disclosure in the summer of 2002 for an international study (Aerts *et al.*, 2007). All non-financial firms represented on the Toronto Stock Exchange S&P/TSX Index were identified (the total index comprises 220 firms in summer 2002). The resulting 2002 sample comprised 189 non-financial firms. Mergers and acquisitions, bankruptcies and delisting reduced our sample to 155 in 2005.
4. In additional simultaneous equation models, we will add board meetings and audit committee meetings to both equations.
5. In the United Nations' document, non-financial disclosures related to corporate governance are grouped into nine categories: objectives; ownership and shareholder rights; governance structure and policies; members of the board and key executives; material issues regarding stakeholders, and environmental and social stewardship; risk factors; external auditors; and internal audit function.
6. We observe that, in many cases, web-based governance disclosure is far more detailed compared to mandatory governance attributes released in proxy statements. To illustrate the extent of web disclosure related to strategic management, we can refer to Talisman's web page: A Clear Strategy to Unlock Value. In May, Talisman unveiled a new corporate strategy. This strategy has four major objectives: lengthen the stride to demonstrate longer-term growth; increase focus on fewer, more material assets; maintain healthy returns while delivering sustainable growth; and improve delivery against achievable targets. In order to achieve these objectives, the company developed a four point action plan: focus the portfolio – exit non strategic areas; size the UK for sustainable delivery; grow existing base – NAO, UK assets as firm base – grow Southeast Asia, Norway; new growth opportunities – determine unconventional potential in NAO – potential future growth in North Africa, South America; optimize global exploration – support core area growth in the short term – increase focus toward larger pool sizes.
7. A coding manual documenting coding instructions as well as standardized coding worksheets were prepared beforehand. Each coder then applied the following coding sequence: independent identification of the occurrence of items relative to the different coding categories; independent coding of the items according to quality level of content; and timed reconciliation on a subset of



company reports. The coders were intensively trained in applying coding instructions and in using the coding worksheets. They were unaware of the research hypotheses. Initial differences in identifying grid items accounted for on average 7 percent of the maximum number of items identified. Of the information quality level coding, less than 10 percent had to be discussed for reconciliation. Disagreement between coders mostly happened at the beginning of the coding process (essentially the first 40 sample firms). A researcher reconciled coding disagreements exceeding 5 percent of the highest total score between the two coders. Smaller disagreements were resolved by the two coders themselves. Overall, we think that this coding process provides a reliable measure of governance disclosure.

8. A similar ranking exercise of governance disclosure is performed annually by the *Globe and Mail Report on Business*, a national newspaper. However, its coding grid comprises only five elements for governance disclosure (i.e. directors' independence, biographical details and meeting attendance, number of board and committee meetings, magnitude of auditors' non-audit fees). Firms with high disclosure scores in our study are also found to be top-ranked in the *Globe and Mail* survey.
9. Following Hausman's procedure, we regress total governance disclosure on new financing, free float, leverage, profitability, US listing, size, board independence, board size, audit committee size, and CEO stock options, and then add the residuals of this regression in share price volatility and Tobin's *Q* regression models.

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Appendix. Governance disclosure grid

- Leadership.
- Mission.
- Strategic planning.
- Risk management.
- Globalization.
- *Total strategic management.*
- Competence of managers.
- Managers' compensation.
- *Total managers.*
- Competence board.
- Independence board.
- Compensation (stocks/options).
- Other committees.
- *Total directors.*
- Competence audit committee.
- Independence audit committee.
- Relations with external auditors.
- Relations with internal auditors.
- *Total audit committees.*
- Ownership structure.
- Other.
- *Total ownership.*
- Total corporate governance.

The rating scale is as follows: 3, item described in monetary or quantitative terms; 2, item described specifically; 1, item discussed in general.

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