AN ANALYSIS OF THE EFFECT OF BOARD CHARACTERISTICS AND GOVERNANCE INDICES ON THE QUALITY OF ACCOUNTING INFORMATION

Raef Gouiaa*, Daniel Zéghal**

Abstract

The objective of this study is to examine the effect on the quality of accounting information published by Canadian firms of board of directors' characteristics compared to that of governance indices that measure board quality. We find that the majority of board characteristics have an important and significant effect on the levels of earnings management and accounting conservatism. On the other hand, in the case of the studied attributes of the quality of accounting information, we find that the effect of governance indices that assess the quality of boards of directors is not clearly established. Particularly, our results reveal that individual measures of the characteristics of boards of directors allow for a better detection and explanation of the quality of accounting information than do multi-factor commercial and academic governance indices.***

Key Words: Board Characteristics, Commercial and Academic Governance Indices, Accruals Quality, Accounting Conservatism

** Professor of Accounting, Université du Québec en Outaouais, 283 boulevard Alexandre-Taché (Pavillon Lucien-Brault), CP 1250, Succursale Hull, Gatineau (Québec) Canada, J8X 3X7*
Email: raef.gouiaa@uqo.ca
*** Professor of Accounting and Executive director of CPA-Canada Accounting and Governance Research Center, Telfer School of Management, University of Ottawa, 55 Laurier E. (7104) Ottawa, ON, K1N 6N5, Canada*
Email: zeghal@telfer.uOttawa.ca

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Introduction

In recent years, increasing attention has been paid to corporate governance around the world particularly after the collapse of several international companies and recurring financial crises. Therefore, corporate governance mechanisms have been constantly evaluated and reformed by policymakers and market participants to develop a framework of best governance practices that can improve firm performance and avoid such crises. The governance-performance relationship literature has gradually progressed from studies that used simple or multiple governance mechanisms to those that used multifactor governance indices. However, the increased attention paid to governance indices both commercial and academic and to multifactor consolidated measures has been the subject of much criticism in recent studies (Bhagat et al., 2008; Bebchuck & Hamdani, 2009; Bozec & Bozec, 2012). In fact, it is not clear if the governance indices perform any better than individual measures of corporate governance mechanisms. The governance indices integrate different governance mechanisms that do not necessarily have the same weight and the same level of importance in the corporate governance system. Although various disciplinary mechanisms (internal or external) are designed to protect the interests of stakeholders from possible abuse by managers, the board of directors occupies a privileged place among the whole array of these mechanisms (Fama & Jensen, 1983). Indeed, the board plays a central role in the resolution of conflicts of interest, reduces information asymmetry and promotes the increase of firm value. Accountability, transparency and disclosure constitute a few of the roles fulfilled by accounting in the governance process. The board of directors is the governance mechanism where most of the strategies and decisions related to these aspects are developed and monitored. Nevertheless, the ability of the board of directors to successfully achieve its allotted roles depends largely on its characteristics (Hendry & Kiel, 2004).

The dominant approach for assessing governance quality in general is to build an index with several aspects that apply to corporate governance. This approach is considered, by some researchers (Gompers et al., 2003; Brown & Caylor,

2006; Bebchuk et al., 2009), to be of great importance based on the belief that company performance depends on the quality of the governance system. However, another stream of research considers the specific characteristics of the board as determinants of the quality and the effectiveness of corporate governance (Bhagat & Bolton, 2008). It is board characteristics that are highlighted and analyzed more than other governance features by both the leading provider of commercial indices and most of the academic measures This raises the question as to whether the individual measures of board characteristics can be as effective as corporate governance indices that integrate a number of different components of the governance system, including board characteristics.

To this end, our study proposes to evaluate the effect of board of directors' characteristics compared to corporate governance indices on the quality of accounting information published by Canadian companies through two principal components, the quality of accounting earnings "earnings management", and the level of conservatism or aggressiveness in the preparation of accounting information. We consider this issue to be relevant in several areas. First, the attention paid to the financial reporting role of the board of directors constitutes an important concern in accounting research particularly after the corporate transparency issues that arose in the wake of the financial crisis. Second, the majority of the previous accounting studies were restricted to assessing the board of directors' characteristics, primarily through the independence of its members, its size, the independence of its audit committee or the financial motivations of the directors (Anderson et al., 2004). However, these characteristics, despite being the most studied dimensions of the board of directors, do not constitute the only engine of its effectiveness. Therefore, we considered it useful to take into account other characteristics which seem to support and improve the effectiveness of the board of directors. Third, a large number of earlier studies relating to similar research questions were undertaken in American or European contexts which differ from the Canadian context. The case of Canada is different because Canadian firms use a specific governance system, characterized by a principle-based governance approach (*Comply or Disclose system*), with strong legal and extra-legal institutions aimed at protecting investors. They operate within a socio-economic environment which has many distinguishing features that may influence both the governance practices and the accounting quality. Finally, and particularly, this study is the first, to our knowledge, to provide an empirical comparative analysis between individual governance measures, board characteristics, and governance indices assessing board quality through their effect on the quality of accounting information disclosed by Canadian firms. The board's characteristics are mainly related to the independence of directors, the duality of functions of the chief executive officer (CEO) and chairman of the board, the size and operation of the board, the financial motivation of directors, their expertise and experience, the size and independence of the audit committee and the representation of women and financial institutions in the firm's board of directors.

To compare the effect of individual measures of boards' characteristics versus multifactor governance indices on the quality of accounting information, we conducted our study on a sample of 189 Canadian companies listed on the Toronto Stock Exchange and belonging to the composite market index S&P/TSX. In general, our findings show the importance of a board's characteristics in determining the quality of accounting information through a better quality of accounting earnings and a higher level of conservatism. In particular, the results of our analyses show the superiority of the individual measures of board characteristics relative to synthesized governance indices measuring the quality of the board, in determining the quality of accounting information published by Canadian companies. The remainder of this paper is structured as follows. In the second section, we present the literature review and develop the hypotheses of our research. The methodology of investigation is presented in a third section. Finally, in the last section, we analyze and discuss the results obtained.

2. Background and hypothesis development

2.1. Board of directors and quality of accounting information

In the literature, it is widely accepted that providing high quality financial accounting information is important because it positively influences capital providers and other stakeholders to take investment decisions, to grant credit, and to make similar resource allocation decisions enhancing overall market efficiency (Norwani et al., 2011; Alkdai & Hanefah, 2012). Indeed, information disclosure on the market tends to reduce the level of information asymmetry between managers and investors. To be transparent, this disclosure should not be limited to an extensive level of information it provide but it should focus on presenting reliable information without any adjustments or manipulation. Agency theory considers the quality of the financial and accounting information disclosed as an effective way to reduce the costs of monitoring managers by investors and creditors (Jensen and Meckling, 1976). In this context, companies exhibit a high quality of accounting when they provide information with less earnings management and more conservatism in their accounting thus leading to the greater value relevance of accounting information.

Occupying a central and privileged place in the corporate governance system, an efficient board of directors ensures better control of the opportunism of leaders and, consequently, allows greater transparency in the information revealed through a better audit of the accounting and financial reporting process (Ajinkya et al., 2005; Beekes et al., 2007; Francis et al., 2008). The effectiveness of the boards of directors in the achievement of these functions depends largely on their characteristics (Hendry & Kiel, 2004; Gouiaa & Zéghal, 2009). This leads to our first general research hypothesis:

H1: Strong board characteristics allow for improving the quality of accounting information.

2.1.1. Independence of board members:

According to agency theory, board effectiveness increases with the proportion of independent directors. Accordingly, corporate governance reports recommend companies introduce independent directors to their board. Several previous studies have also argued that the presence of independent outside directors on the board improves its effectiveness (Zéghal et al., 2011). In this context, other studies have shown that the percentage of independent directors is positively associated with the effectiveness of monitoring managers in preparing financial reports. Klein (2002) found a negative relationship between board-independence and abnormal accruals. Beekes et al. (2004) found firms with a relatively high proportion of outsiders on the board to be more conservative. Furthermore, Davidson et al., (2005) showed that, in Australia, having a majority of non-executive directors on the board was negatively associated with the likelihood of earnings management. This leads to the following research hypothesis:

H1.1: Board independence has a positive effect on the quality of accounting information.

2.1.2. Board size:

This characteristic has a significant influence on the board's performance and efficiency. The accounting literature review has shown that board size plays a significant role in the directors' ability to control the managers and to supervise the accounting and financial process (Ghosh et al., 2010). Indeed, large boards generally constitute effective supervisors of the reporting process for investors and creditors through the improvement of the transparency and reliability level in the financial statements. Thus, board size will promote improving the quality of the accounting information through more conservative methods and less manipulation and adjustment of accounting numbers. In our research, we test the following hypothesis:

H1.2: Board size has a positive effect on the quality of accounting information.

2.1.3. Separation of roles of CEO and chairman of the board:

For the board to be effective and to perform its critical functions, it is essential that the position of the chairman and CEO be separate. According to Fama & Jensen (1983), separation between management and control in large firms reduces conflicts of interest and consequently agency costs. Several previous studies have shown that the combination of functions has a negative effect on financial statement quality (Peasnell et al., 2005; Ghosh et al., 2010), and on financial firm performance (Chen et al., 2009). Therefore, we expect that separation of management and control functions in the board will result in an improved financial transparency and reliability. This leads to the following research hypothesis:

H1.3: Separation of the roles of CEO and chairman of the board has a positive effect on the quality of accounting information.

2.1.4. Independence of the audit committee: The audit committee plays an important role in ensuring greater transparency in the disclosure through the communication of relevant and credible information to the stakeholders (Pincus et al., 1989). Indeed, the audit committee is responsible for the independent monitoring and control of the accounting process in order to provide reliable and credible information to various users (Klein, 2002). The accounting literature review has shown that the existence of an independent audit committee enhances financial reporting quality and represents a good corporate governance mechanism (Abbott et al., 2004; Raghunandan & Rama, 2007). Abbott et al. (2004) found that independent audit committees are more likely to hire a specialist external auditor and to ensure better verification of the information disclosed. Thus, when audit committees are independent, they are able to better perform their duties and, accordingly, to improve the quality of accounting information. This leads to the following hypothesis:

H1.4: The independence of the audit committee has a positive effect on the quality of accounting information.

2.1.5. The size of the audit committee:

This is a characteristic that seems determinant of the audit committee's effectiveness in monitoring the financial reporting process. Beasley & Salterio (2001) find that, as audit committee size increases beyond the mandated minimum requirement, firms are more likely to include outside independent directors on the audit committee. This in turn enhances audit committee effectiveness. Firms with larger audit committees are willing to devote greater resources to overseeing the financial accounting process through having more time to devote to overseeing the hiring

of auditors, questioning management, and meeting with internal control system personnel (Anderson et al., 2004). If large audit committees better control financial standards and the reporting process than do small committees, we then expect greater disclosure transparency and better quality of accounting information. This leads to our fifth testable hypothesis:

H1.5: The size of the audit committee has a positive effect on the quality of accounting information.

2.1.6. Representation of financial institutions in the board:

The representation of these institutions in firms' boards of directors reduces information asymmetry and improves the quality and the efficiency of control over the financial accounting process (Kroszner & Strahan, 2001). In fact, representatives of banks and other financial institutions can limit managerial opportunism and agency costs through a better control of management actions and the financial reporting process. Consequently, the representation of these institutions allows for improving the level of transparency by improving the reliability and the value relevance of disclosed information and reducing discretionary adjustments. This leads to the following research hypothesis:

H1.6: The representation of financial institutions in the board of directors has a positive effect on the quality of accounting information.

2.1.7. Board tenure:

A literature review shows that boards of directors are more attentive and more effective in the control of managers to the extent that their directors are qualified and experienced (Anderson et al., 2004). Gompers et al. (2003) have found a positive relation between the directors' tenure, measured through the number of years during which directors occupy these positions, and the efficiency of the board in monitoring managers and particularly the reliability of accounting and financial information. Indeed, boards composed of competent and experienced members allow for more effective control over the financial accounting process and managerial decisions and this promotes, consequently, a more transparent disclosure without manipulations and discretionary adjustments (Raghunandan & Rama, 2007; Francis et al., 2008). This leads to the following research hypothesis:

H1.7: Board tenure has a positive effect on the quality of accounting information.

2.1.8. Meeting frequency of the board and its audit committee:

The frequency of board activity denotes the level of diligence and scrutiny exercised by the directors (Ghosh et al., 2010). In enhancing the quality of control exercised by the board and its audit committee over the managers and the financial reporting process, meeting frequency should lead to improving the quality of accounting information and to reducing risk levels and agency costs faced by both shareholders and lenders. In fact, when the board and the committees meet more often, it is seen as a signal that governance mechanisms are performing their functions effectively and this reduces the risk of manipulation and discretionary adjustments of the accounting information disclosed (Coles et al., 2008). Because audit committees need to be proactive and ask probing questions about financial reporting, committees meeting more frequently are likely to demand a higher quality of reporting from management and external auditors. This leads to the following research hypothesis:

H1.8: Meeting frequency of the board of directors and its audit committee has a positive effect on the quality of accounting information.

2.1.9. Representation of women in the board:

In addition to their experience and different points of view, women bring new knowledge and new contacts to the board of directors for which relationships are the greatest asset (Adams & Ferreira, 2009). Thus, the increased presence of women on the board of directors is expected to improve its effectiveness in carrying out its oversight functions and making the right decisions in favor of greater transparency through a better quality of financial and accounting information that reliably reflects the financial and economic reality of the firm without manipulation or adjustments. Indeed, when women are represented in the board of directors, they actively seek to show other directors and stakeholders that they are also as competent in the fulfillment of their duties, making the board more effective in terms of guaranteeing reliable information and exerting efficient control over the accounting and financial reporting process. This leads to the following research hypothesis:

H1.9: The representation of women in the board of directors has a positive effect on the quality of accounting information.

2.1.10. Directors' ownership:

According to agency theory, the percentage of capital held by the directors can constitute a sufficient incentive for exerting effective control over managers and also over the financial accounting process (Jensen & Meckling, 1976). Thus, independent shareholder directors are more responsive and effective in ensuring a more transparent disclosure that meets the requirements of creditors and investors (Cremers & Nair, 2005; Chen et al., 2009). Consequently, we

expect that independent directors' ownership allows for improving the quality of accounting information by limiting discretionary adjustments and aggressive accounting methods. This leads to the following research hypothesis:

H1.10: The ownership of independent outside directors has a positive effect on the quality of accounting information.

2.2. Board characteristics and governance indices

Recently, the dominant approach to evaluating the quality of a firm's corporate governance is to construct an index comprised of the multiple dimensions of a firm's governance structure (Gompers et al., 2003; Brown & Caylor, 2006; Bebchuk et al., 2009). The corporate governance indices that are currently in use have been either developed by commercial providers or self-constructed by academic researchers. These indices combine different attributes of the governance system so as to detect the overall quality of corporate governance. Although this evaluation approach to overall governance quality is expanding, some governance scholars still consider specific board characteristics to be the critical determinants of corporate governance quality (Bhagat & Bolton, 2008). To this end, our study sought to compare the effect of governance indices, both academic and commercial, with board characteristics in the detection of governance system quality and to compare the effects of each on the quality of accounting information.

2.2.1. Governance indices

In recent years, researchers and providers of governance services have created measures of overall corporate governance quality that collapse the multiple dimensions of a company's governance into one index (Bozec & Bozec, 2012). As indicated above, the governance indices have been either developed by commercial developers or self-constructed by academic researchers. These indices vary considerably with respect to which attributes of firms' corporate governance are considered sufficiently important to be included. The first indices were created and developed by academics and researchers. But the stream of governance research rapidly generated commercial indices that are designed primarily for institutional investors pursuing information about the quality of a firm's corporate governance system as an aid for portfolio decisions, and to firms that want to signal their governance quality to investors (Bebchuk et al., 2009). The main difference between academic researchers and commercial providers in developing governance indices is based on the expertise of these providers and on the analytical approach to corporate governance (Bhagat et al., 2008).

First, the weights given to governance features in the commercial indices differ by feature from one to another and from one company to another. Indeed, commercial indices are generally based on a number of governance factors which are not equally weighted. For example, the weight assigned to the components of the ROB index (Report on Business developed by the Globe & Mail) is based on their correlations with the level of risk and past performance of the company. Furthermore, the scores for these indices and the weights of the items that compose them are also modified and updated to better reflect market trends in corporate governance. Thus, the weighting scale of commercial indices items can be significantly affected by the subjective judgment of analysts based on their experience and knowledge of the companies involved.

Moreover, commercial indices can be expressed in relative terms with each firm rated relative to industry or size peers (Bozec & Bozec, 2012). Indeed, the classification adopted by the commercial developers is linked to other firms in the same industry, the same market or the same region while academic indicators give absolute ratings of the quality of governance practices regardless of comparable companies. Thus, if the weight assigned to a particular governance feature is not consistent with those used by financial market participants in assessing corporate governance quality, incorrect inferences and conclusions will be drawn from empirical studies (Bhagat & Bolton, 2008). In addition, commercial indices generally do not give equal importance to the different attributes of the governance system. Indeed, we find that board characteristics are those most studied while other mechanisms are not included or are poorly weighted (Renders et al., 2010). On the other hand, academic indices are based on a smaller number of governance features that are directly targeted to the firms studied. The governance attributes they select are equally weighted, each taking the value one or zero (binary) to denote the presence or absence of a governance practice. Academic indices are supposed to be less subjective than commercial indices. Indeed, they are based on a simple count of the value assigned to each governance feature and are usually expressed as absolute measures (Bozec & Bozec, 2012). When the indices are self-built, researchers have the opportunity to select the sample and the governance attributes that they consider relevant.

Thus, it appears that academic indices are less subjective than commercial indices and, therefore, we expected the academic indices developed by researchers to be more efficient than commercial indices in explaining the differences in the quality of accounting information. This leads to our second general research hypothesis:

H2: Academic governance indices perform better than commercial indices in the explanation of differences in the quality of accounting information.

2.2.2. Board characteristics versus governance indices

Although the dominant approach to assessing the quality of a firm's governance system recently is to construct an index including multiple dimensions of the firm's governance structure, some governance scholars consider specific board characteristics to be the critical determinants of corporate governance (Brown & Caylor, 2006; Bebchuck et al., 2009). In fact, the board of directors occupies a central and privileged place in the corporate governance system through its role in the control and assurance of transparent disclosure to stakeholders (Ghosh et al., 2010). Corporate law provides the board of directors with the authority to make, or at least ratify, all important firm decisions, including decisions about investment policy, management compensation policy, and board governance itself. Also, board characteristics are emphasized by the providers of commercial and academic indices over other governance features such as takeover-related governance factors. This shows the importance given to board characteristics in the effectiveness of the governance system. This raises the fundamental question of our research which is whether individual measures of board characteristics can be as effective as measures of corporate governance as indices that consider multiple features of the governance system and the board characteristics.

First, providers and developers of governance indices generally ignore any potential interactions between governance attributes in terms of complementary or substitution relationships. In fact, constructing governance indices by assigning positive weights to all the governance attributes might result in an inaccurate measure of the quality of a company's governance system. Good governance attributes are generally treated as complementary to the governance system when, in fact, they might be substitutes (Bozec & Bozec, 2012). Thus, if various governance attributes contained in the same index are substitutes, the quality of one governance attribute can compensate for the need for another governance dimension (compensatory effect). This substitution hypothesis is supported by a number of studies that have shown a negative relation between governance attributes and even between board of directors' characteristics (Gillan et al., 2007).

Second, if the substitution effect implies some governance attributes are captured by the index and others are not, cross-sectional differences in corporate governance practices can occur, but may not necessarily indicate differences in performance (Bebchuck et al., 2009). In any case, not taking into account possible interactions between governance dimensions could result in inaccurate measurement of the governance quality. In addition, the effect of possible substitution between the governance index and other provisions that are not included will inevitably exacerbate the problem of endogeneity (Bozec & Bozec, 2012).

Third, evaluating the quality of a firm's governance system from individual measures of board characteristics rather than a multi-factor index might also be justified on econometric grounds. The more numerous the governance attributes that must be identified in order to assess the quality of the governance system of the firm, the greater the possibility of error in recording the value of any component and, therefore, the greater the opportunity for errors in the assessment of the overall quality of the governance system (Bhagat & Bolton, 2008). In this context, the association analysis between the overall quality of the governance system and firm performance is often mis-specified since the governance indices present a higher level of imprecision in the estimation of governance quality (Brown & Caylor, 2006; Bebchuck et al., 2009).

Finally, the construction of an index requires that all variables be weighted. The weights assigned by a commercial provider in particular to the individual board characteristics and other governance dimensions are very important (Core et al., 2006). Indeed, if the weights are not consistent with weights used by market participants in assessing the relationship between corporate governance and business performance, then erroneous conclusions will be drawn about the relationship between governance and performance, even if the governance index components are properly measured.

Thus, the use of multifactor indices, including different dimensions and characteristics of the corporate governance system instead of individual board characteristics, increases empirical problems associated with the measurement, the endogeneity, the optimization across governance choices and features and the eventual substitution relationship between the dimensions included (Bhagat et al., 2008). Therefore, the use of a single governance feature rather than the governance indices in evaluating corporate governance quality, promotes attenuation and mitigation of these problems. In this context, the board of directors, considered as the central mechanism of corporate governance, has recently received considerable attention. Indeed, the board is able to help to reduce the agency costs of the business and can control managers and executives. Board characteristics are considered attributes of its effectiveness and success in fulfilling its roles (Anderson et al., 2004; Brown & Caylor, 2006; Gouiaa & Zéghal, 2009). They represent the factors responsible for ensuring effective monitoring of important business decisions and supervising implemented management measures. Consequently, board characteristics may be excellent governance

measures since they can be used instead of governance indices to assess overall corporate governance quality and, therefore, to analyze the effect on the quality of accounting information. This leads to our third and main research hypothesis:

H3: Individual measures of board characteristics allow a better explanation of quality of accounting information than do corporate governance indices.

3. Research methodology

3.1. Sample description and data

To test our hypotheses, we analyze the 2010 annual reports of the Canadian companies belonging to the /TSX Composite index, representing the main stock index on the Canadian stock market (245 companies). Among the companies constituting the S&P/TSX Composite index, we eliminate the foreign companies as well as the Canadian companies involved in the financial sector (banks, insurance, etc.). These financial companies have been excluded from the sample because accounting policies relative to this industry are very specific and quite different from those applicable to non-financial firms. This treatment is also justified by the fact that the restriction to non-financial firms increases the homogeneity of the sample and improves the robustness and comparability of our findings. In addition, the governance system of financial institutions is very specific and differs from that of non-financial firms (Macey & O'Hara, 2003). We also exclude the companies for which one of the variables was missing and the foreign companies belonging to the market index and subject to specific regulations, which reduces our final sample to 189 of the companies listed on the Toronto stock exchange (TSX).

Data for this study were collected from different databases. On the one hand, stock information was collected from the TSE-CFMRC database (Toronto Stock Exchange - Canadian Financial Markets Research Centre) and from the financial section of the website http://ca. finance.yahoo.com / for the period of the study. On the other hand, accounting and financial data were extracted from the Research Insight database (COMPUSTAT). In addition, we collected information regarding the two governance indices used in this research, GM Index (Globe & Mail) and BSC Index (Board Shareholder Confidence Index), from their respective websites. Finally, board characteristics data, as well as all non-available data at the above databases were collected manually from the companies' annual reports for 2010. These reports have been downloaded from the online database SEDAR (System for Electronic Document Analysis and Retrieval).

3.2. Measurement of variables

3.2.1. Quality of accounting information

a. Accruals quality ***(AQ)****:* We use the measure of accrual estimation error developed in Dechow and Dichev (2002) and modified in McNichols (2002) and Francis et al. (2005) as our measure of accruals quality. This measure defines the quality of accruals as the extent to which working capital accruals explain current-period, prior-period and future-period operating cash flow realizations. The unexplained portion of the variation in working capital accruals is an inverse measure of accruals quality (with a larger unexplained portion implying lower quality accounting). Thus, consistent with Francis et al. (2005), we use the following cross-sectional model:

$$TCA_{i,t} = \alpha_{0,i} + \alpha_{1,i}CFO_{i,t-1} + \alpha_{2,i}CFO_{i,t} + \alpha_{3,i}CFO_{i,t+1} + \varepsilon_{i,t}$$

where $TCA_{i,t}$ is the total current accruals scaled by lagged total assets for firm i year t, while the total current accruals are calculated from the following equation (Francis et al., 2005):

$$TCA_{i,t} = (\Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} + \Delta STDEBT_{i,t})/Assets_{i,t-1}$$

where $\Delta CA_{i,t}$ is the change in current assets for firm i year t, $\Delta CL_{i,t}$ is the change in current liabilities for firm i year t, $\Delta Cash_{i,t}$ is the change in cash for firm i year t, $\Delta STDEBT_{i,t}$ is the change in short-term debt in current liabilities for firm i year t, $Assets_{i,t-1}$ is the total assets for firm i year t-1, and $CFO_{i,t+\tau}$ is the cash flow from operations scaled by lagged total assets for firm i year $t+\tau$ (t = -1, 0,1). *CFOi,t is the difference* between firm *i*'s net income before extraordinary items and firm *i*'s total accruals (TA) in year *t*,

TAi,t = (*ΔCAi,t* – *ΔCLi,t* – *ΔCashi,t* + *ΔSTDEBTi,t* – *DEPNi,t*),

where *DEPNi,t* is firm *i*'s depreciation and amortization expense in year *t*.

Consistent with Francis et al. (2005), accruals quality is measured by the metric $AQ_{i,t} = \sigma(\varepsilon_i)_t$, which is the standard deviation of firm *i*'s residuals $\varepsilon_{i,t}$. Larger standard deviations of residuals indicate poorer accruals quality. We multiply the variance by minus one, so that a higher value of *AQ* corresponds to higher accounting quality.

b. Accounting conservatism ***(AC)****:* Accounting conservatism completes accruals quality as a measure of the reliability of a firm's accounting information. This measure can be interpreted as the exercise of

caution in the recognition and measurement of income and assets. It measures the level of aggressiveness vs. conservatism in the preparation of accounting information. Positive accounting theory suggests that accounting conservatism is an efficient governance mechanism to mitigate information asymmetry and address agency problems (Watts, 2003; Lafond & Watts, 2008; Lafond & Roychowdhury, 2008), allowing an increase in the accuracy and reliability of the information provided.We measure the level of accounting conservatism through a C-score estimated by using the model developed by Khan and Watts (2009). This measure assesses the level of conservatism or aggressiveness in the preparation of accounting information, particularly in the determination of accounting income in terms of recognition of gains and losses (Basu, 1997; Khan and Watts, 2009). Khan and Watts propose this proxy of accounting conservatism based on Basu's measure of the asymmetric timeliness method.

$$X_i = \beta_1 + \beta_2 D_i + \beta_3 R_i + \beta_4 D_i R_i + \varepsilon_i$$

Where i indicates the firm, X is earnings, R is returns, D is a dummy variable which equals one if R is less than 0 and zero otherwise. So β3 is the good news timeliness measure and β4 is the incremental timeliness for bad news over good news, or conservatism. Khan and Watts (2009) control for the time series variation and the cross-sectional variation by taking firm characteristics (size, MB and leverage) into the annual cross-sectional Basu model.

$$X_i = \beta_1 + \beta_2 D_i + R_i\ (\mu_1 + \mu_2\ FIRM\_SIZE_i + \mu_3\ MB_i + \mu_4\ LEV_i) + D_i R_i\ (\lambda_1 + \lambda_2\ FIRM\_SIZE_i + \lambda_3\ MB_i + \lambda_4\ LEV_i) + (\delta_1\ FIRM\_SIZE_i + \delta_2\ MB_i + \delta_3\ LEV_i + \delta_4\ D_i FIRM\_SIZE_i + \delta_5\ D_i MB_i + + \delta_6\ D_i LEV_i) + \varepsilon_i$$

Then the C-score is defined as: $C\text{-}Score = \lambda_1 + \lambda_2\ FIRM\_SIZE_i + \lambda_3\ MB_i + \lambda_4\ LEV_i$

Thus, conservative accounting tends to accelerate the recognition of losses and defer the recognition of gains, which leads to persistently negative accruals.

3.2.2. Board characteristics

a. Board independence ***(BRD_IND)****:* following previous studies (Abbott et al., 2004; Peasnell et al., 2005; Zéghal et al., 2011), we measured the independence of the board of directors by the percentage of independent external directors serving on the board. A director is independent, according to the Canadian regulation (NI 52-110 related to audit committees), if he or she has no direct or indirect material relationship with the issuer. A material relationship is a relationship which, in the view of the issuer's board of directors, could reasonably be expected to interfere with the exercise of a member's independent judgement.

b. Board size ***(BRD_SIZE)****:* in accordance with previous studies (Anderson et al., 2004: Coles et al., 2008), board size was measured by the number of directors serving in the board.

c. Separation of functions of CEO and chairman of the board ***(SEP_FCT)****:* in accordance with previous studies (Beasley & Salterio, 2001; Peasnell et al., 2005), separation of the roles of CEO and Chairman of the Board was measured by a dummy variable that takes the value one if there is separation of functions and zero otherwise.

d. Audit committee independence ***(AUD_IND)****:* this variable is measured by the percentage of independent directors serving on the audit committee. This measure was used by several previous studies such as Anderson et al. (2004) and Ghosh et al. (2010).

e. Audit committee size ***(AUD_SIZE)****:* in accordance with previous studies (Peasnell et al., 2005; Leung & Horwitz, 2010), the size of the audit committee is measured by the number of directors serving on this committee.

f. Representation of financial institutions in the board ***(REP_FI)****:* following the previous study of Kroszner & Strahan (2001), we measured this variable by a dummy variable that equals one when there are representatives of financial institutions (banks, financial establishments or credit organizations) in the board of directors of the company and zero otherwise.

g. Board tenure ***(BRD_TEN)****:* this variable is measured by the average of the function duration of directors in the company's board of directors. It corresponds to the sum of the number of years that the directors serve on the board divided by the number of directors. This measure was used by Anderson et al. (2004) and Gouiaa & Zéghal (2009).

h. Meeting frequency of the board and its audit committee: in accordance with previous studies (Peasnell et al., 2005; Ghosh et al., 2010), the meeting frequency of the board of directors ***(BRD_FRQ)*** and the audit committee ***(AUD_FRQ)*** is measured by the number of board and audit committee meetings per year.

i. Representation of women in the board ***(REP_WOM)****:* we measured this variable by a dummy variable that equals one when there are women represented in the board of directors and zero otherwise. This measure was used in previous studies such as Adams & Ferreira (2009).

j. Ownership of independent directors ***(IND_OWN)****:* following previous studies (Cremers & Nair, 2005; Chen et al., 2009), we measured the ownership of independent directors by the percentage of capital owned by external independent directors serving on the board.

3.2.3. Governance indices

a. G&M governance index ***(GM_INDEX)****:* this commercial governance index focuses on several different features of the board structure. It constitutes

a part of a multifactor index, *Report On Business (ROB)*, and is developed by the Canadian newspaper, the Globe & Mail. GM_INDEX is a proxy to assess a corporate governance system and measure information transparency with regard to governance practices. More precisely, this multifactor index includes four dimensions of corporate governance. The first dimension, board composition, (maximum of 31 marks out of 100), evaluates the independence of the directors serving on the board, the audit committee, the compensation committee and the remuneration committee. The second dimension evaluates compensation policy (maximum of 27 marks out of 100) and detects the ownership of directors and the CEO. The third dimension assesses shareholder rights (maximum of 30 marks out of 100). Finally, the fourth dimension measures the level and the quality of information on corporate governance (maximum of 12 marks out of 100). Since its publication in October 2002, this index has been used in several studies (Foerster & Huen, 2004; Ben Amar & Boujenoui, 2008). We focus initially on the sub-index (GM_INDEX) related to board composition as it evaluates the quality of this governance mechanism. Then, in an additional analysis, we use the overall index (ROB_INDEX) developed by G&M. The score of this index equals the sum of assigned values to each item of the index. A higher value of this index theoretically implies a strong governance system and an effective board complying with the rules and requirements of good governance.

*b. Board Shareholder Confidence Index **(BSC_INDEX)**:* this academic governance index has been developed since 2003 by the Clarkson Centre for Business Ethics and Board Effectiveness of the Joseph L. Rotman School of Management at the University of Toronto. This academic index provides an analysis of the quality of governance practices related to boards of directors of publicly traded Canadian companies listed on the S&P/TSX Composite Index. It has been used by several previous studies (Beekes et al., 2007; Switzer & Cao, 2011). The BSC Index is comprised of the factors often used by active shareholders to assess boards of directors. It captures factors affecting shareholders' confidence in the boards' abilities to fulfill their duties. Factors assessed by this index are related to the independence and ownership of directors, the structure and system of the board, and past board practices in terms of compensation and directors and CEO nomination. Each company is ranked between AAA (the highest value) and C (the lowest value) of each item of the index, with AAA representing the best corporate governance structure and C representing the other extreme. An overall score is given by the aggregation of scores for the eight dimensions evaluated separately. This overall score ranges from AAA+ (best governance quality) to C (lowest governance quality).

Inspired by the construction methodology of the BSC index and transformations wrought by Beekes et al. (2007) and Switzer & Cao (2011), we transformed the overall score ranging from C to AAA+ in a metric variable theoretically ranging between 20 and 100 in order to facilitate the analysis of this index. The final value of the BSC index, a score between C and AAA+ in the Clarkson system, is converted into a digital value by adding the sum of allocated deductions for each item of the index to the raw score of 100. Thus, a higher value of this index reflects a better quality of the board.

3.2.4. Firms' characteristics

*a. Firm size **(FIRM_SIZE)**:* is measured by the natural logarithm of the book value of total assets. It was used by several studies (Chen et al., 2009; Zéghal et al., 2011).

*b. Profitability **(ROA)**:* following previous studies (Beekes et al., 2007; Leung & Horwitz, 2010), we measured firm profitability by the Return on Assets ratio which is equal to the earnings before interest and taxes (EBIT) divided by total assets.

*c. Growth opportunities **(MB)**:* in accordance with previous studies (Ben Amar & Boujenoui, 2008; Gouiaa & Zéghal, 2009), this variable is measured by the Market-to-Book ratio which is equal to the market capitalisation divided by the book value of equity.

*d. Leverage **(LEV)**:* following the studies of Anderson et al. (2004) and Leung & Horwitz (2010), leverage is measured through the level of debt in the capital structure based on the book values, which correspond to the total financial debts divided by the total assets.

*e. Audit quality **(AUD_Q)**:* the audit quality is measured by a dummy variable that takes the value 1 if the firm is audited by at least one of the BIG4 and 0 otherwise. This measure was also used by Leung & Horwitz (2010) and Zéghal et al. (2011).

*f. Industry **(IND)**:* to measure this variable, we used four dummy variables for the four main industries: **IND1** (Energy), **IND2** (Material), **IND3** (Manufacture) and **IND4** (Services). Each variable is measured by a dummy variable that equals one if the firm belongs to the specific industry and zero otherwise. This measure was used by several studies (Beeks & Brown, 2006; Ben Amar & Boujenoui, 2008; Leung & Horwitz, 2010).

3.3. Research models

In order to compare the effect of individual measures of board characteristics to complex indices assessing overall governance and board quality on the quality of accounting information disclosed by Canadian companies (accruals quality and accounting conservatism), we use the following regression models:

$$AQ / AC = \beta_0 + \beta_1 BRD\_SIZE + \beta_2 BRD\_IND + \beta_3 SEP\_FCT + \beta_4 AUD\_SIZE + \beta_5 AUD\_IND + \beta_6 IND\_OWN + \beta_7 BRD\_FRQ + \beta_8 AUD\_FRQ + \beta_9 BRD\_TEN + \beta_{10} REP\_FI + \beta_{11} REP\_WOM + \beta_{12} FIRM\_SIZE + \beta_{13} ROA + \beta_{14} MB + \beta_{15} LEV + \beta_{16} AUD\_Q + \beta_{17} IND + \varepsilon$$

Then, we substitute board characteristics by the governance indices selected in our study to compare the explanatory power of these indices with respect to the individual measures of board characteristics in determining accruals quality and accounting conservatism. For this we use the following model:

$$AQ / AC = \beta_0 + \beta_1 GM\_INDEX / BSC\_INDEX + \beta_2 FIRM\_SIZE + \beta_3 ROA + \beta_4 MB + \beta_5 LEV + \beta_6 AUD\_Q + \beta_7 IND + \varepsilon$$

Owing to the fact that all the dependent variables are continuous and follow a normal distribution, we use multiple linear regression models to estimate these equations. However, the application of the linear regression model is subjected to several conditions.

3.3.1. Checking for the absence of heteroscedasticity

Given that the problem of autocorrelation of errors does not arise for individual data (cross-section analysis), we test the possible existence of a problem of heteroscedasticity of errors. Within this framework, we used the test of White. The results of this test show that there is no problem of heteroscedasticity in any of the regression models used in our study.

3.3.2. Checking for the absence of multicollinearity between independent variables

To test for the absence of multicollinearity problems, we calculated the Pearson correlation coefficients between independent variables and we also calculated the Variance Inflation Factor (*VIF*). An analysis of the correlations between independent variables shows that all the correlation coefficients are smaller than 0.8 which corresponds to the limit from which we would generally start to have serious multicollinearity problems. Moreover, tables 2, 4 and 5 show that any VIF that is found does not exceed the limit of 3. This leads us to conclude that problematic multicollinearity is not present.

4. Results analysis

4.1. Descriptive Analysis

Descriptive statistics presented in the first part of table 1 related to continuous variables (Part A) indicate that the average accruals quality for Canadian companies is -0.166. These statistics reveal that the quality of accruals varies between -1.862 (poorer quality of accounting information) and -0.003 (higher quality of accounting information). These results also reveal that the average value of accounting conservatism is 0.048 and that this conservatism score varies between 0.001 (very aggressive accounting information) and 0.340 (very conservative accounting information). Accounting conservatism scores are similar to those found by Khan and Watts (2009) in their study in the U.S. context.

These statistics also show that the average board size is approximately 9 directors (9.186) and varies between 4 and 16 directors. An examination of board composition reveals that on average 74.3% of board directors are independent in accordance with the Canadian NI 52-110. and own on average 1.57% of the company's stocks. Moreover, the average size of the audit committee is 4 directors (3.821). The average percentage of independent directors serving on the audit committee is 95.42%. Furthermore, these results show that Canadian boards of directors meet at least two times and not more than 20 times with an average of 9.5 meetings per year and that audit committees meet 3 to 11 times with an average of five times per year. These results also reveal that the average board tenure is 7.728 years. As indicated in Part B of table 1, the dual structure in which the functions of CEO and chairman are not separated is the one most often adopted by Canadian companies (60.85%). These results also show that 55.56% of the companies studied have one or more representatives of financial institutions in their boards. Finally, these results indicate that women are represented in 54.50% of the boards of Canadian companies. These results show that despite efforts to encourage the presence of women on boards, women are, in fact, not represented in almost half of Canada's largest companies. In addition, the descriptive analysis shows that the 89.95% of Canadian firms studied are audited by at least one of the BIG4 and have an average debt level of 25.46%.

Table 1. Descriptive statistics **Part A : Continuous Variables**

Variables	N	Mean	Median	S.D.	Min	Max
AQ	189	-0.166	-0.063	0.303	-1.862	-0.003
AC	189	0.048	0.043	0.042	0.001	0.340
BRD_SIZE	189	9.186	9.000	2.372	4.000	16.000
BRD_IND	189	0.743	0.750	0.135	0.250	1.000
AUD_SIZE	189	3.821	4.000	0.942	3.000	6.000
AUD_IND	189	0.954	1.000	0.127	0.333	1.000
IND_OWN	189	0.015	0.003	0.044	0.000	0.266
BRD_FRQ	189	9.500	8.500	3.798	2.000	20.000
AUD_FRQ	189	5.360	5.000	1.568	3.000	11.000
BRD_TEN	189	7.728	7.236	3.606	1.000	17.867
FIRM_SIZE	189	3.463	3.417	0.534	2.469	4.613
ROA	189	2.173	3.161	5.615	-16.144	15.533
LEV	189	0.254	0.234	0.164	0.002	0.740
MB	189	2.156	1.833	2.634	-6.591	21.762
GM_INDEX	189	19.244	20.000	5.241	8.000	28.000
BSC_INDEX	189	67.573	69.500	12.891	38.000	90.000
ROB_INDEX	189	62.845	62.000	15.573	27.000	95.000

Table 1 : Descriptive statistics **Part B : Dummy Variables**

SEP_FCT			
	Value	**Frequency**	**Percentage**
Separation of functions of CEO and chairman	1	74	39.15%
Duality of functions of CEO and chairman	0	115	60.85%
REP_FI			
No representation of financial institutions in the board	0	84	44.44%
Representation of financial institutions in the board	1	105	55.56%
REP_WOM			
No representation of women in the board	0	86	45.50%
Representation of women in the board	1	103	54.50%
AUD_Q			
Not audited by one of the BIG 4	0	19	10.05%
Audited by one of the BIG 4	1	170	89.95%

4.2. Multivariate Analysis

4.2.1. Analysis of the effect of board characteristics on the quality of accounting information

The results of the regression models (table 2) examining the effect of board characteristics on the quality of accounting information show satisfactory explanatory powers with statistically significant Fisher coefficients. The values of adjusted R^2 indicate that 52% of the variation in accruals quality and 50.4% of the variation in accounting conservatism scores are explained by board characteristics and control variables. The results of this analysis show that board size, ownership of independent directors, audit committee size and independence have a positive and statistically significant impact on the quality of accruals.

These results also show that boards with a higher meeting frequency of their audit committee and in which women are represented improve the quality of accounting information by reducing the discretionary adjustments and manipulations of accounting numbers. Moreover, our findings reveal that, on the one hand, firm size has a positive and statistically significant effect on the quality of accruals and, on the other hand, the quality of the audit has a positive and significant impact on this measure of accounting quality. As a robustness check, we follow Francis et al. (2005) and use the model modified to include plant, property and equipment and change in revenues (scaled by average assets) into the estimation model of accruals quality.

McNichols (2002) proposes this extension, arguing that the change in sales revenue and plant, property and equipment are important in forming expectations about current accruals, over and above the effects of operating cash flows. The results of the regression models using this modified model of estimation of accruals quality are very similar to those found using the first model. To conserve space, we only tabulate the results from the first specification. Results analysis of the regression model studying the effect of board characteristics on accounting conservatism scores (table 2) shows a positive and significant effect of the tenure of the board, the size and meeting frequency of the audit committee, the representation of women and financial institution in the board on the quality of accounting information through a higher level of accounting conservatism. These results also show that separation of the functions of CEO and chairman of the board positively and significantly affects the level of conservatism in the preparation of accounting information. Similar to the results associated with the quality of accruals, this analysis shows that larger companies audited by one of the BIG4 disclose less aggressive accounting information by accelerating the recognition of losses and deferring the recognition of gains. Also, the results of this regression model show that the higher the leverage and the growth opportunities (higher Market-to-Book ratio), the more conservative the accounting information reported. These results highlight the importance of board characteristics in general by showing that the more efficient and the stronger the board, the higher the quality of accounting information.

Table 2. The effect of board characteristics on the quality of accounting information

Variables	Predicted sign	*Accruals Quality (AQ)*			*Accounting Conservatism (AC)*		
		Coef. β	Sig.	VIF	Coef. B	Sig.	VIF
Intercept		0.255**	0.021	0.000	0.134**	0.013	0.000
BRD_SIZE	+	0.087**	0.045	1.488	0.067	0.160	0.657
BRD_IND	+	0.062	0.159	0.551	0.017	0.863	0.752
SEP_FCT	+	0.019	0.858	2.538	0.031*	0.074	1.607
AUD_SIZE	+	0.156**	0.022	1.508	0.197*	0.076	0.704
AUD_IND	+	0.013*	0.092	0.409	0.129	0.240	2.052
IND_OWN	+	0.060*	0.056	1.456	0.025	0.779	1.255
BRD_FRQ	+	0.107	0.317	1.243	0.007	0.194	1.079
AUD_FRQ	+	0.058**	0.026	1.965	0.159*	0.067	0.897
BRD_TEN	+	0.034	0.758	1.996	0.177*	0.072	1.010
REP_FI	+	0.011	0.926	1,878	0.091*	.0.060	0.541
REP_WOM	+	0.024*	0.082	1.939	0.201**	0.037	1.371
FIRM_SIZE	+	0.107***	0.0.007	0.263	0.0.221*	0.058	0.0.562
ROA	+/-	0.230	0.0.130	1.914	0.125	0.168	2.140
MB	+	0.100	0.366	2.470	0.268***	0.006	2.369
LEV	-	0.075	0.459	2.544	0.640**	0.018	2.321
AUD_Q	+	0.152**	0.021	1.482	0.108**	0.027	0.719
IND1	+/-	0.025	0.697	1.622	-0.073	0.319	0.543
IND2	+/-	0.086	0.484	2.640	0.052	0.627	2.122
IND3	+/-	0.034	0.792	1.204	0.110	0.320	0.801
IND4	+/-	0.075	0.521	1.709	0.043	0.673	2.194
N = 189		Adjusted R^2 = 0.520 F = 3,14***			Adjusted R^2 = 0.504 F = 3,05***		
***: significant at 1% level **: significant at 5% level *: significant at 10% level							

4.2.2. Analysis of the effect of governance indices on the quality of accounting information

With the aim of taking the results we found that related to the effect of individual measures of board characteristics and comparing them to other measures assessing the quality of this governance mechanism and particularly governance indices assessing the quality of the board in determining the quality of accounting information, we analyze the effect of two governance indices GM_INDEX and BSC_INDEX.

We start this analysis by examining the correlation between these two governance indices and the individual measures of board characteristics. The obtained results (table 3) show positive correlations between BSC_INDEX and a1ll board characteristics. However, separation of functions, ownership of independent directors and board tenure are not positively correlated to the GM_INDEX. Our results (table 3) indicate that these correlations are statistically significant only for the characteristics related to board independence, tenure and audit committee size. All the other correlations between

individual characteristics and the two studied indices are not statistically significant. These results show the limitations of these two indices, particularly the commercial index GM_INDEX, in the effective evaluation of the quality and attributes of the board of directors since they are significantly correlated to a reduced number of key features of this governance mechanism. In addition, our findings show the existence of a substitution relationship between board characteristics since they are not all positively and significantly correlated with the studied governance indices.

Table 3. Analysis of the correlations between governance indices and board characteristics

	BRD_SIZE	BRD_IND	SEP_FCT	AUD_SIZE	AUD_IND	IND_OWN	BRD_FRQ	AUD_FRQ	BRD_TEN	REP_FI	REP_WOM
GM_INDEX	0.117	0.209	-0.087	0.221	0.131	-0.028	0.069	0.156	-0.230	0.070	0.104
	(0.296)	(0.060)	(0.435)	(0.046)	(0.242)	(0.804)	(0.539)	(0.162)	(0.038)	(0.534)	(0.354)
BSC_INDEX	0.156	0.435	0.182	0.221	0.104	0.015	0.146	0.156	0.001	0.143	0.134
	(0.162)	(0.000)	(0.102)	(0.046)	(0.354)	(0.896)	(0.190)	(0.163)	(0.995)	(0.200)	(0.229)

In this analysis, we substitute board characteristics by governance indices analyzing the quality of the board in the regression models seeking to examine the effect of this governance mechanism on accruals quality and accounting conservatism. The results of these regression models, shown in table 4, reveal the superiority of the individual measures of board characteristics in explaining the differences in the quality of accounting information reported by Canadian companies. The results of the regression models presented in table 4 reveal lower explanatory powers than those that incorporate board characteristics. These limited explanatory powers show the superiority of the individual measurements of board characteristics compared to synthetized commercial indices in explaining differences in accruals quality and accounting conservatism. The coefficients associated with the GM governance index, showing positive effects on accruals quality and accounting conservatism consistently with the theoretical predictions, are not statistically significant. Therefore, our findings reveal that this commercial governance index does not detect the effect of the quality of the board of directors on the quality of accounting information.

On the other hand, the regression models analyzing the effect of the academic governance index (BSC_INDEX) on accounting conservatism and accruals quality (table 4) show that the explanatory powers of this index are greater than those provided by the commercial index (GM_INDEX). These results thereby confirm our second research hypothesis. However, these enhanced explanatory powers related to the academic index remain lower than those of the individual measurements of board characteristics showing once again the superiority of the individual measures compared to governance indices in the explanation of the quality of accounting information disclosed by Canadian companies. Moreover, these results show that this measure of board efficiency has a positive and significant effect only on accounting conservatism. Indeed, our findings show a positive but insignificant effect of this governance index on the quality of accruals. In addition, the obtained results show that the effect of audit quality on accounting conservatism is no longer significant when we use GM_INDEX instead of the individual measures of board characteristics.

Robustness test (Modified model of estimation of AQ): Since neither of the two governance indices studied has any effect on the quality of accruals, we consider the same analysis using the modified model of Francis et al. (2005) to estimate accruals quality. The results of the regression models using the modified model of estimation of accruals quality are very similar to those found in the first model by showing no significant effects of these governance indices on the quality of accounting information measured by the quality of accruals.

In conclusion, our findings reveal that the two studied governance indices cannot assess the effectiveness and the true quality of the board of directors and consequently do not explain variations in the quality of accounting information. In addition to the low quality of these indices, these results can be explained by the substitution relationship between the different attributes and characteristics of the board of directors and therefore limit the powers of governance indices.

Table 4. The effect of governance indices on the quality of accounting information

Variables	Predicted sign	Accruals Quality (AQ)						Accounting Conservatism (AC)					
		Coef. B	Sig.	VIF	Coef. B	Sig.	VIF	Coef. B	Sig.	VIF	Coef. B	Sig.	VIF
Intercept		0.297**	0.025	0.000	0.127**	0.045	0.000	0.080**	0.029	0.000	0.075**	0.016	0.000
GM_INDEX	+	0.082	0.142	0.737				0.074	0.117	1.837			
BSC_INDEX	+				0.122	0.108	1.562				0.163*	0.093	1.908
FIRM_SIZE	+	0.165**	0.012	2.037	0.074***	0.006	1.174	0.046*	0.062	1.930	0.158**	0.048	1.468
ROA	+/-	0.225*	0.086	0.790	0.201*	0.094	2.035	0.100	0.241	2,.168	0.112	0.225	0.904
MB	+	0.063	0.492	1.204	0.093	0.326	1.682	0.065**	0.039	0.724	0.653*	0.057	1.133
LEV	-	0.064	0.511	0.706	0.103	0.280	1.985	0.219**	0.015	1.392	0.273**	0.041	0.584
AUD_Q	+	0.086**	0.035	0.691	0.096**	0.029	1.137	0.086	0.297	1.166	0.134**	0.013	1.694
IND1	+/-	0.026	0.729	1.458	0.043	0.548	1.288	-0.096	0.340	1.117	-0.084	0.445	1.404
IND2	+/-	0.113	0.285	1.940	0.135	0.206	1.109	0.032	0.734	1,.	0.036	0.723	0.478
IND3	+/-	0.003	0.980	0.520	0.052	0.658	2.004	0.179*	0.081	1.521	0.182*	0.091	2.176
IND4	+/-	0.083	0.431	1.581	0.081	0.438	1,.	0.023	0.808	2.254	0.057	0.574	1.981
N = 189		Adjusted R^2 = 0.214 F = 2.78**			Adjusted R^2 = 0.306 F = 3.52***			Adjusted R^2 = 0.301 F = 3.47***			Adjusted R^2 = 0.341 F = 3.75***		

****: significant at 1% level **: significant at 5% level *: significant at 10% level*

4.2.3. Additional analysis: the effect of a multifactor governance index on the quality of accounting information

In this additional analysis, we substitute board characteristics by a commercial governance index evaluating various dimensions of corporate governance (ROB_INDEX) in three regression models seeking to examine the effect of the governance system on accruals quality and accounting conservatism. The results of the regression models analyzing the effect of this index on the quality of accounting information (table 5) show once again the superiority of the individual measures of board characteristics in explaining differences in the quality of accruals and levels of accounting conservatism. Indeed, the explanatory powers generated by the use of this index are less important than those generated by using board characteristics and governance indices GM_INDEX and BSC_INDEX.

Table 5. The effect of multifactor governance index on the quality of accounting information

Variables	Predicted sign	*Accruals Quality (AQ)*			*Accounting Conservatism (AC)*		
		Coef. β	Sig.	VIF	Coef. B	Sig.	VIF
Intercept		0.297**	0.025	0.000	0.183**	0.047	0.000
ROB_INDEX	+	0.108	0.142	1.235	0.304	0.206	2.005
FIRM_SIZE	+	0.195***	0.009	1.542	0.046**	0.039	0.809
ROA	+/-	0.127*	0.074	1.231	0.107	0.205	1.475
MB	+	0.063	0.465	1.003	0.061**	0.034	1.499
LEV	-	0.062	0.471	1.097	0.217**	0.028	1.426
AUD_Q	+	0.079***	0.007	0.731	0.106	0.121	1.922
IND1	+/-	0.021	0.725	1.078	-0.090	0.356	2.010
IND2	+/-	0.413	0.283	1.230	0.081	0.708	0.579
IND3	+/-	0.106	0.681	0.894	0.106*	0.067	1.413
IND4	+/-	0.107	0.569	1.293	0.103	0.858	1.259
N = 189		Adjusted R^2 = 0.207 F = 1.89**			Adjusted R^2 = 0.194 F = 1.63**		

****: significant at 1% level **: significant at 5% level *: significant at 10% level*

The insignificant effect of this multifactor governance index on accruals quality and accounting conservatism shows the limits of governance indices in the detection of the overall quality of the corporate

governance system. These findings confirm the results of Gillan et al. (2007) showing the limitations of multi-dimensional indices in assessing the effectiveness and the quality of the governance system. The insignificant effect of this index can be explained by, among other things, the substitution relationship between the different governance dimensions that make the index ineffective in detecting the effect of corporate governance on the quality of accounting information.

5. Summary and Conclusion

In conclusion, the obtained results showed the importance of the effect of individual measures of board characteristics compared to governance indices on the quality of accounting information disclosed by Canadian companies. Indeed, our findings highlight the importance of board characteristics in general by showing that the more efficient the majority of these characteristics, the better the quality of accruals and the higher the level of accounting conservatism. Particularly, our results reveal the superiority of individual measures of boards' characteristics compared to synthesized governance indices measuring the quality of the board, in explaining the differences in the quality of accounting information. We find that the studied governance indices cannot evaluate the quality of the board of directors and consequently do not explain effectively the accounting quality. In fact, the existence of a substitution relationship between the different characteristics of the board of directors limits the power of the governance indices in determining and explaining differences in accruals quality and accounting conservatism. We conclude that governance indices are highly imperfect and that investors and policymakers should exercise extreme caution in attempting to draw inferences regarding a firm's disclosure quality or future stock market performance from its ranking on any particular governance measure.

So, if investors have to make a choice between using a governance index and one governance dimension to predict performance from the quality of a firm's governance, they would do better to analyse the quality of accounting information by evaluating the quality and the effectiveness of the board of directors through an evaluation of its characteristics. Our findings also reveal the power of board characteristics to assess governance quality and will encourage institutional investors to reduce or eliminate their need to use commercial services to measure a firm's governance quality.

Nonetheless, our study has a few limitations. First, we could not include all board and governance characteristics because the required data is not publicly available. Second, the quality of accounting information is an important factor in the assessment of disclosure transparency but not the only one. Indeed, the extent of disclosure is also very important in the analysis of disclosure transparency and could provide a fruitful context for future research. Finally, it would also be interesting to integrate the influence of the institutional environment differences in the explanation of the variations in the quality of accounting information between companies through an international comparison.

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