THE EFFECT OF THE BOARD OF DIRECTORS' QUALITY ON COMPENSATION FEES

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ABSTRACT

This paper examines the effect of the quality of the board of directors on the directors' compensation. The quality of the board of 204 Canadian firms is defined by adopting a scoring mechanism published by the Globe and Mail*'s 'Report on Business'. It is assessed based on four criteria: board composition, shareholding compensation, shareholder rights and disclosure.*

Using univariate and multivariate statistical models, our results reveal that shareholding rights, shareholding compensation and disclosure are the significant components in explaining the level of compensation. However, the composition of the board does not have any impact.

INTRODUCTION AND MOTIVATION FOR THIS RESEARCH

Directors' compensation has received more attention in recent years after the many corporate scandals that have occurred since 2001. These scandals have shown the failure of governance mechanisms, such as boards, in spite of excessive remuneration delivered to directors.

Theoretically, the separation between ownership and management leads to agency problems. The board of directors is considered the primary means of aligning the interests of shareholders with those of managers (Fama and Jensen, 1983). Nevertheless, some barriers, such as informational asymmetry, and communication and coordination problems between directors, can influence the board's efficiency.

Remuneration can be a solution to these agency problems. In fact, board compensation is considered by agency theorists as a mechanism of active monitoring (e.g.

Fama and Jensen, 1983). The contracting theory holds that governance problems which reduce a board's effectiveness might be avoided by negotiating incentive compensation contracts with directors (Ryan and Wiggins, 2004).

While remuneration can be a solution to agency conflicts, it can also be a consequence of agency problems. The rent extraction theory (Chalmers, Koh and Stapledon, 2006) considers that compensation is a tool for directors to obtain excess private benefits at the expense of shareholders. Compensation is then viewed as a bargaining game between directors and managers.

In addition, recent research showed that ownership characteristics can influence the role of compensation. Ferrarini, Moloney and Ungureanu (2009) argued that in concentrated ownership companies, shareholders have enough information and can directly supervise the managers without the need for an incentive contract. The role of remuneration as a means of incentive is therefore less relevant.

Despite the expanding studies regarding the determinants of director compensation in the United States (US), little evidence is observed in other countries, especially in the context of firms with a concentrated structure.

Canada provides a particularly interesting context characterised by family-owned firms: boards with more concentrated ownership and smaller firms as compared to US companies (Klein, Shapiro and Young, 2005). Empirically, Gadhoum, Gueyié and Chahloul (2005) found that the average Canadian board size seems to be smaller than the average US one since Canadian firms are smaller. In addition, board members have the tendency to protect the position of shareholders who own a significant share of the firm. However, Canadian boards are more independent compared to American boards, with a higher proportion of external board members. Moreover, the director tenure in Canada is shorter than in the US (Gadhoum et al., 2005).

In such a context, it is interesting to treat the quality of the board and its impact on directors' compensation. Specifically, the question which we want to answer is this: does the good quality board receive more compensation than the bad one?

Using a data set of 204 Canadian companies published in the *Globe and Mail*'s Games 2007 (McFarland, 2007), the objective of our paper is to examine the relationship between the quality of the board and its remuneration.

A large number of corporate governance studies used different governance practices as a measure of the quality of the board (Ryan and Wiggins, 2004; Yermack, 2004). This study proposes a synthesis measure of board quality which takes into consideration traditional measures along with other dimensions of corporate governance quality. Prior studies measure the quality of the board by board size, number of outside directors and chief executive officer (CEO)/chair split and other proxies. However, each of these measures is partial and cannot capture the quality of the board in its entirety. The main contribution of this research is to adopt a corporate governance index to capture the entire quality of the board.

Gompers, Ishii and Metrick (2003) argue that index construction is motivated by the many dimensions of corporate governance. It is therefore of value to combine the different elements of governance into one measure representing the quality of the firm's governance. According to their empirical results, they were able to show that an investment strategy based on a strongest governance index will earn

a high abnormal return. In our research, the board of directors' quality index provided by the *Globe and Mail* is based on four criteria: composition of the board of directors, shareholder compensation, shareholder rights and disclosure. Furthermore, we extend the existing literature on board compensation in the sense that we do not restrict the study of the remuneration to the total of the directors' fees as has been done in the majority of studies, but we also include the individual compensation of the directors as well as the chairperson's fees.

Using a univariate and a multivariate analysis, we find a positive relationship between the board's quality and the directors' compensation. In particular, shareholding rights, shareholding compensation and disclosure practices are significant components in explaining the level of compensation. However, the composition of the board has less impact on the directors' compensation.

This study is organised as follows: the next section summarises the previous studies on board compensation, while the following section illustrates the objective, the hypotheses and the conceptual model of our study. The fourth section presents the methodology used in this study and the empirical results are illustrated in the fifth section. The last section is devoted to the discussion and conclusion.

PREVIOUS STUDIES ON THE RELATIONSHIP BETWEEN DIRECTORS' COMPENSATION AND DIRECTORS' QUALITY

Previous studies measured board quality in many ways and found contradictory results.

Measures of the Quality of a Board of Directors

Many studies link the board's compensation to the effort expended by directors (e.g. Adams, 2005). The board's effort is captured by both the time devoted to its duties and the quality of its work. Others argue that the effort is not always an indicator of outcomes. Directors can spend a great amount of effort but without effectiveness. Therefore, we will treat the impact of both the board's effectiveness and the board's effort on compensation in two separate paragraphs.

Measures of a Board's Effort

Given the fact that the effort of the board is not directly observed, the amount of a director's effort is associated with economic attributes. The size of a firm and its performance are the most commonly evoked economic attributes in the literature. Thus, it is claimed, larger firms have complex operations and require more control (Demsetz and Lehn, 1985). The cost of inefficient control and the benefits of good governance are higher. Accordingly, firms will nominate well-qualified directors with more experience who ask for more remuneration in return.

The relationship between firm performance and board remuneration is also discussed in many studies. Main, Bruce and Buck (1996) redefine the problem of agency in the sense that the agent is the director and not the manager. Costs can be associated with the relationship between the shareholder (the principal) and the board (the agent) due to collusion between directors and managers. In order to

reduce these costs, incentive contracts are instituted. These contracts relate the compensation of the board to the performance provided to shareholders.

Others tried to measure directly the real effort of directors by using the number of directors' meetings as a proxy. As Adams (2005) proposed, when directors meet frequently, it is obvious that more effort is required.

Measures of a Board's Effectiveness

Many studies associate good governance with board independence. Yermack (2004) focused on the relationship between compensation and the presence of outside directors. Outside directors have the incentive to improve their reputations by making good decisions (Fama and Jensen, 1983). Their presence is necessary for the board's independence and is reflected in more effective boards. Therefore, their remuneration should be higher. This result is at odds with the hypothesis of Fama and Jensen (1983), which asserts that the quality of the outside directors' effort is better when they receive smaller payments. According to Fama and Jensen (1983), small payments give a more credible signal to the external market.

Ryan and Wiggins (2004) propose four measures of independence: size of the board, composition of the board, CEO tenure and CEO/chair duality. The large size of a board diminishes its quality since it creates problems in communication and coordination. It therefore increases the power of the CEO who influences the directors' decisions in his or her own best interests. Moreover, the tenure of the CEO who also presides over the board increases, which reduces the efficiency of the board.

Results of Previous Studies

Prior literature has showed contradictory results regarding the relationship between board quality and directors' compensation. One set of studies has suggested a positive relationship between good corporate governance and directors' compensation (e.g. Ryan and Wiggins, 2004), while another set has reported a negative relationship (e.g. Brick, Palmon and Wald, 2006). The contradiction in these results could be explained by the kind of variables used to measure board quality and the characteristics of the corporate ownership structure.

In fact, when researchers used firm size as a measure of a board's effort, all empirical studies found a positive relationship between firm size and board remuneration and confirmed this hypothesis in many contexts (Adams, 2005; Crespi-Cladera and Gispert-Pellicer, 2003; Fernandes, 2005; Andreas, Rapp and Wolff, 2009).

In contrast, when studies linked board compensation to firm performance, the empirical results were inconclusive. Some studies found a positive relationship (e.g. Brick et al., 2006) but others did not obtain any significant relationship between them (Fernandes, 2005). This divergence is explained by two factors. The first is the type of indicators used, i.e. the compensation–performance relationship is more significant when using capital market information (shareholder return) than accounting-based measures (return on assets). The second factor relates to the governance structure, which is weaker for concentrated firms. Crespi-Cladera and Gispert-Pellicer (2003) indicated that for such firms the remuneration of the board depends on the shareholders' wealth and not on accounting indicators.

When Brick et al. (2006) and Adams (2005) measured the real effort of directors, the results showed that board compensation is positively linked to the effort spent by directors. These results are confirmed by studies which measure the board effectiveness. For example, Yermack (2004) found a statistically significant and positive link between having outsiders on the board and compensation. Similarly, Ryan and Wiggins (2004), who argued that bad governance practices involve less remuneration, found a negative relationship between the total compensation and CEO tenure as well as board size. Specifically, when the CEO gains more power than the board, the total compensation decreases, which leads to weaker incentives to control.

However, other authors sustained the negative link between compensation and board quality. In fact, Brick et al. (2006) indicated that directors receive larger compensation when the CEO is also the chairperson and concluded that such an environment reflects weak governance.

This negative relationship is also validated in the concentrated ownership context. In fact, Andreas et al. (2009) underlined that in Germany, the ownership concentration is an alternative tool in place to align directors' interests with those of shareholders. The presence of this tool diminishes the level of compensation (Bryan and Klein, 2004; Hartzell and Starks, 2003).

RESEARCH OBJECTIVE, HYPOTHESES AND CONCEPTUAL MODEL

Several studies examining the relationship between a board's quality and compensation fees revealed a significant impact. However, the sign of this link varied according to the measures chosen by the researcher and the ownership characteristics.

In Canadian firms, the structure of the board is more concentrated than in US ones and the presence of independent directors is remarkable. Since a high level of ownership concentration is considered an indicator of a high level of supervision, we can suppose that the function of monitoring in Canadian corporate governance is strong. We can therefore estimate that the monitoring function of the Canadian board is less relevant and the effort spent by directors is not necessarily compensated by high rewards.

However, Canadian corporate boards are also characterised by smaller sizes, independent directors and having separate CEO and chairperson positions. These characteristics lead to a more effective corporate governance and improve both the monitoring and advising functions of the board:

H_1: The board's quality is positively associated with the level of directors' compensation.

Prior literature used many variables to measure the quality of the board. All these measures are incomplete and not relevant since none of them examines the quality of the board as a whole.

The objective of this study is to analyse the impact of a board's quality on compensation fees by improving the measures of the board's characteristics. We extend

the notion of the board's quality to include not just one criterion but a set of criteria reflecting the best practices of directors. This set is developed from the 'Report on Business' published in the *Globe and Mail* by McFarland (2007). It is based on the recommendations of regulators, major institutional investors, academics and the industry associations in the US and Canada.[1] It is the most comprehensive index publicly available in Canada on corporate governance rankings.[2] The main advantage of this index is its possibility to aggregate a variety of governance indicators. Many previous studies have used this index (e.g. Klein et al., 2005; Niu, 2006; Adjaoud, Zeghal and Andaleeb, 2007). The limit of the use of this index consists in the arbitrary choice of the items and the weights attached to them (Klein et al., 2005).

Based on this index, four components of good quality are taken into account: board composition, shareholding compensation, shareholder rights and disclosure. A more comprehensive discussion of the index and its components will be brought up in the methodology section.

The composition of the board refers to its independence and structure. The independence of the board is crucial to effective governance. According to most of the previous literature, we suppose that the board's compensation is positively linked to the composition of the board and therefore to its degree of independence:

H_2: The composition of the board is positively associated with the level of directors' compensation.

Independence, good structure and effectiveness of the board are not however sufficient to measure good quality as a whole.

The shareholding compensation is the second component that measures the degree to which managers and the board have incentives to act in the best interests of shareholders. Ensuring that directors' own equity is a meaningful part of remuneration enhances the convergence of directors' and shareholders' interests. It is then another way to make directors more implicated in their monitoring and advertising functions. We therefore predict a positive relationship between shareholding compensation and board remuneration:

H_3: Shareholding compensation is positively associated with the level of directors' compensation.

Stronger governance is also measured by more shareholder rights, which constitute the third component. When many shareholders have an influence over the selection of directors and the level of their appointments, it is in the interests of the members of the board to engage actively in improving the performance of the firm according to shareholders' plans. We suppose that the strong shareholder rights give directors more incentives to ameliorate their skills and this increases the level of their compensation:

H_4: Shareholder rights are positively associated with the level of directors' compensation.

Disclosure is the last component which attempts to measure the public commitment of the firm to good governance. The presence of such disclosure increases the pressures faced by the board in order to adopt decisions that align its interests with those of the shareholders. In fact, it enables shareholders to evaluate the extent to which management and directors are involved in their company. So, it allows more protection for the rights of minority shareholders. The absence of such information creates agency problems and inefficient compensation policies (Andjelkovic, Boyle and McNoe, 2002). We then consider the positive link between disclosure and compensation:

H_5: Disclosure is positively associated with the level of directors' compensation.

However, as identified by the literature, there are other economic attributes that might have an impact on the directors' remuneration, such as firm size, performance and complexity. We therefore introduce these attributes as control variables in the model.

As mentioned in previous studies, we suppose that larger firms carry out complex operations and require, therefore, more monitoring. This is provided by selecting the best qualified directors who will also demand higher remuneration. The level of directors' compensation might be related to difficulties in controlling the managers. We hypothesise that firm size and complexity have a positive impact on compensation fees:

H_6: Firm size is positively associated with the level of directors' compensation.

H_7: The complexity of the firm is positively associated with the level of directors' compensation.

As discussed in previous studies, the board's compensation–performance relationship diminishes as the concentration of ownership increases. Since Canadian firms have more concentrated ownership structures than US ones (Klein et al., 2005), we presume the existence of a weak relationship between Canadian firms' performance and the level of directors' compensation:

H_8: The performance of the firm is not associated with the level of directors' compensation.

Prior literature also showed a link between the directors' and the CEO's compensations. We assume that in Canadian firms characterised by ownership concentration, the bargaining power between directors and CEO is not significant. We therefore suppose that directors' and CEO's compensations are related to each other due to the skill and effort needed to manage the firm. Therefore, the level of CEO pay has a significant impact on board remuneration:

H_9: The level of CEO pay is positively associated with the level of directors' compensation.

METHODOLOGY

Sample Selection and Characteristics

Sample data were collected from the study representing the complete list of Canadian firms in the *Globe and Mail*'s Games 2007, published in the 'Report on Business' (McFarland, 2007). It consists of 204 firms from the year 2007. This year was chosen because it precedes the financial crisis which started in 2008. The choice of the year 2007 therefore enables us to avoid the biases of the crisis. The sample includes most industrial sectors such as manufacturing, minerals, agriculture, financial services and retail trade. These firms are ranked from 1 to 204 based on Board Games 2007's rating criteria.

The data related to directors' fees and CEO compensation were collected from *Financial Post Magazine* (2008), COMPUSTAT[3] research insight and proxy circulars, the remaining data were collected from the Stock Guide database for 2008;[4] any missing information was collected from the audited financial statements for the year 2007 reported by www.sedar.com.[5]

Business activities are described by adopting the typology of the *Globe and Mail*'s Board Games 2007 using a coded system from 1 to 10 representing the following: consumer discretionary, consumer staples, energy, financial, health care, industrials, information technology, materials, telecom services and utilities. Almost half of the sample is concentrated in two areas, energy and materials. The other half is distributed between the eight other areas (see Table 1).

TABLE 1: CLASSIFICATION OF FIRMS BY INDUSTRY TYPE

Type of Industry	Number	Percentage
Telecom services	4	1.96%
Utilities	5	2.45%
Health care	11	5.40%
Information technology	11	5.40%
Consumer staples	13	6.37%
Industrials	16	7.84%
Consumer discretionary	22	10.78%
Financial	25	12.25%
Energy	44	21.57%
Materials	53	25.98%
Total	204	100%

Board Quality

Unlike prior literature, which presents many determinants related to governance variables, such as board size, number of outside directors, CEO duality and number of board meetings (Adams, 2005; Crespi-Cladera and Gispert-Pellicer, 2003; Ryan and Wiggins, 2004; Yermack, 2004; Brick et al., 2006; Andreas et al.,

2009), our main contribution is to use measures of the quality of the board in terms of four components provided by the 'Report on Business' published in the *Globe and Mail* by McFarland (2007). Each component is comprised of different items. Points are allocated for each item by referring to the information published in the companies' proxy information circulars for shareholders and compiled by the *Globe and Mail*'s 'Report on Business'. A score is assigned to each component by summing the total of points. The different items and points established are presented in Appendix 1.

The first component is composition of the board. This includes the major important characteristics designated by the literature such as independence, compensation committee, presence of women in the board, split chairperson/CEO, board performance and board meetings.

The independence factor and the presence of an audit committee reflect good monitoring practices. Moreover, the presence of women in the board creates diversity and improves the governance mechanisms. Some studies found evidence of the positive relationship between the presence of women and financial performance (e.g. Stephenson, 2004). The increase of such performance may be rewarded by more appointments. The existence of a system with many details to evaluate the board performance is another item that improves the quality of the board. The composition of the board component has a maximum of 37 marks. More than 29 marks are allocated to the board's independence.

The second component concerns the shareholding compensation and includes the ownership of directors and CEOs as well as their compensation policies. Marks are allocated when directors own equity. In this case, the directors' interests are better aligned with corporate goals and strategies and this improves the quality of the board. In addition, when the disclosure system on loans to senior executives, CEO bonuses or CEO pension plans is perfect, it can align managers' compensation packages with their performance. The disclosure of such information limits management power and improves the accountability of directors. This component has a maximum of 25 marks.

The third component is shareholder rights. It is related to the shareholders' ability to vote for individual directors and the majority voting policy. It refers to the power of shareholders to nominate or obstruct the directors. Firms with strong shareholder rights will better coordinate the interests of directors and those of shareholders. For example, marks are allocated if there are no dual-class shares, zero marks otherwise. This component has a maximum of 28 marks.

The last component is related to disclosure. When the board presents to the public the CEO's/directors' compensation policies and the detailed board members' biographies, informational asymmetry problems are reduced. This reflects the transparency of the board and the experience of its members. Marks are allocated to firms that disclose corporate governance practices. This component has a maximum of 10 points.

For each firm, a score is obtained by summing the marks related to all four characteristics, with a maximum value of 100.[6] This score is indicated by 'total marks' in the discussion below.

Univariate and Multivariate Analyses of the Effect of Board Quality on Compensation Fees

To analyse the relationship between the directors' compensation and the quality of the board, we conducted univariate analysis where the dependent variables are regressed on each quality component. Next, we realised multivariate regressions to show the effect of the board's quality components on the directors' compensation.

Directors' fees measures = $b_0 + b_1\text{Log}(\textit{Board composition}) + b_2\text{Log}(\textit{Shareholding compensation}) + b_3\text{Log}(\textit{Shareholder rights}) + b_4\text{Log}(\textit{Disclosure}) + \varepsilon$

Finally, we studied the effect of the quality of the board on directors' fees in the presence of control variables using the following model:

Directors' fees measures = $b_0 + b_1\text{Log}(\textit{Total marks}) + b_2\text{Log}(\textit{Firm size}) + b_3\text{Log}(\textit{CEO compensation}) + b_4(\textit{Performance}) + b_5\text{Log}(\textit{Complexity}) + b_6(\textit{Industry}) + \varepsilon$

Where:

- Firm size is measured by natural logarithm of total assets
- CEO compensation is measured by the total compensation defined as the annual plus the long-term compensation (which includes vested restricted stock grants and 'stock gains' – the value realised from exercising stock options during the just-concluded fiscal year)
- Firm performance is measured by ROA (return on assets)
- Complexity of the firm refers to the firm's research and development (R&D) expenditures and the amount of capital invested (measured by natural logarithm of total assets/board size)
- Industry is coded 1–10 representing the following: consumer discretionary, consumer staples, energy, financial, health care, industrials, information technology, materials, telecom services and utilities

To detect the possible relationships between different explanatory variables, we computed a correlation matrix by examining the Pearson coefficient. Besides correlations, we also checked for multicollinearity among variables that we used by performing the variance inflation factor (VIF).

EMPIRICAL RESULTS

Results of Descriptive Statistics

As reported in Table 2, the sample includes both small and large firms since the variables present a wide difference between their means and medians and between their minima and maxima (the firm size being measured by the natural logarithm of total assets). These firms show gains and losses but, on average, Canadian firms realise a profit and only 38 firms (19 per cent) were subject to a loss.

It is important to signal that, as in US firms, Canadian CEOs receive higher levels of compensation than the chairperson and the members of the board since, on average, the total CEO fees exceed CA$3,464,000 whereas the chairperson and the directors receive only CA$150,000 and CA$52,000 respectively. It is worth noting that the CEO's compensation is measured by the *annual compensation* (calculated

as the CEO's salary plus bonuses) and the *total compensation* defined as the annual plus the long-term compensation (which includes vested restricted stock grants and stock gains – the value realised from exercising stock options during the just-concluded fiscal year (*Financial Post Magazine*, 2008)).

TABLE 2: DESCRIPTIVE STATISTICS OF SAMPLE CHARACTERISTICS

Panel A: Firm Characteristics

	ROA %	Total Assets (000,000s)	Complexity (000,000s)	Annual CEO Compensation (000s)	Total CEO Compensation (000s)
Mean	4.38	18,759	1,303	1,521	3,464
Median	4.58	2,127	232	1,150	1,966
Minimum	-94.21	24.8	2.7	6	6
Maximum	42.77	536,780	33,548	13,685	20,294
Standard deviation	12.63	64,342	3,969	1,478	3,743

Complexity of the firm is measured by total assets/board size.
Annual CEO compensation is calculated as the CEO's salary plus bonus.
Total CEO compensation is measured by the annual plus the long-term compensation which includes vested restricted stock grants and stock gains – the value realised from exercising stock options during the just-concluded fiscal year.

Panel B: Directors' Fees Variables

	Individual Directors' Fees (000s)	Sum of Individual Directors' Fees (000s)	Chairperson's Fees (000s)	Total Directors' Fees (000s)
Mean	52	592	150	742
Median	40	399	112	521
Minimum	0	0	0	0
Maximum	249	3,486	1,000	4,240
Standard deviation	42	565	165	667

Individual directors' fees: retainer and meeting fees for serving on various board committees.
The total includes cash and stock compensation for directors.
Total directors' fees: sum of individual directors' fees + chairperson's fees.

Table 2 also presents descriptive statistics of the directors' fees variables. It includes the directors' individual compensation, the sum of individual compensations, the chairperson's compensation and the total compensation. On average, the Canadian directors' fees exceed CA$52,000 but the chairperson's fees are more than CA$150,000 on average.

Table 3 presents the details of the descriptive statistics for this score and its components. Like Adjaoud et al. (2007), we found the mean and median of the total marks and its components to be very close. The score has a mean of 65.07 and a median of 64. However, the minimum and maximum values and the standard deviation of the four components indicate a wide variation within the sample. For example, the highest chairperson compensation is $1,000,000 and the lowest is

zero. It also appears that composition of the board represents the highest proportion (76.59 per cent = 28.34/37) whereas disclosure represents the lowest proportion (51.2 per cent = 5.12/10).

TABLE 3: MEASURES OF BOARD QUALITY ACCORDING TO THE *GLOBE AND MAIL*'S 'REPORT ON BUSINESS' 2007

Variable Label	Total Marks	Board Composition	Compensation	Shareholder Rights	Disclosure
Mean	65.07	28.34	14.43	17.15	5.12
Median	64	29	14	18	5
Minimum	33	10	2	3	1
Maximum	96	36	24	28	10
Standard deviation	13.57	5.96	4.58	5.86	1.98
Total marks allowed	*100*	*37*	*25*	*28*	*10*

Results of Univariate Tests

The results of univariate regressions are presented in Table 4. This table reports the results for individual directors' fees, the sum of individual directors' fees, chairperson's fees and total directors' fees.

As seen in this table, director compensation, measured by the four criteria, is positively and significantly related to the quality of the board and its components. The first hypothesis is therefore verified. Only board composition is not significantly related at the 1 per cent level if director compensation is measured by individual fees or the sum of individual directors' fees. 'Total marks' seems to be the best measure of the board's quality to explain the board's compensation since it has the highest adjusted R^2 (17 per cent).

In terms of the four criteria of the board's quality, disclosure is the one most correlated with the dependent variable with adjusted R^2 = 12 per cent.

TABLE 4: EMPIRICAL RESULTS OF UNIVARIATE REGRESSIONS BETWEEN DIRECTORS' FEES AND BOARD'S QUALITY

	Dependent Variables			
	Individual Directors' Fees	Sum of Individual Directors' Fees	Chairperson's Fees	Total Directors' Fees
Constant	2.10 (4.09)***	2.17 (3.47)***	1.67 (2.61)***	2.20 (3.70)***
Log(*Total Marks*)	1.38 (4.92)***	1.89 (5.53)***	1.89 (5.50)***	1.94 (6.00)***
R-squared	12%	14%	17%	16%
Constant	3.86 (10.2)***	4.59 (9.49)***	3.34 (6.9)***	4.46 (9.6)***
Log(*Board composition*)	0.51 (2.00)**	0.69 (2.10)**	1.21 (3.73)***	0.85 (2.72)***
R-squared	2%	2%	7%	3%
Constant	3.86 (25.3)***	4.51 (22.7)***	4.15 (21.8)***	4.46 (24.1)***
Log(*Shareholding compensation*)	0.65 (5.08)***	0.95 (5.7)***	0.84 (5.21)***	0.91 (5.61)***
R-squared	8%	11%	11%	10%

(*Continued*)

TABLE 4: (*CONTINUED*)

	Dependent Variables			
	Individual Directors' Fees	**Sum of Individual Directors' Fees**	**Chairperson's Fees**	**Total Directors' Fees**
Constant	3.90 (27.0)***	4.76 (24.7)***	4.33 (18.0)***	4.80 (26.2)***
Log(*Shareholder rights*)	0.54 (4.53)***	0.68 (4.36)***	0.63 (3.44)***	0.68 (4.54)***
R-squared	7%	7%	6%	7%
Constant	4.10 (33.1)***	5.00 (30.0)***	4.6 (30.3)***	5.12 (30. 6)***
Log(*Disclosure*)	0.63 (3.76)***	0.86 (3.87)***	0.72 (3.53)***	0.86 (3.86)***
R-squared	10%	12%	9%	12%

In our regressions, we follow the literature in using the logarithm of the directors' compensation.
Log(*Directors' fees*) measures = $a + b_1 factor + \varepsilon$.
Absolute value of *t* statistics is in parenthesis.
* Statistically significant at the 0.10 level; ** statistically significant at the 0.05 level; *** statistically significant at the 0.01 level.

Results of Multivariate Tests

Table 5 shows the multivariate regressions between the directors' fees and board's quality components. It shows that shareholding compensation and shareholder rights are significantly linked to the directors' fees at the 1 per cent level. The disclosure component also has a significant impact but only at the 5 per cent level. These results therefore verify the third, forth and fifth hypotheses. On the other hand, we did not find any relationship between the composition of the board and the directors' compensation. These results confirm those obtained by the univariate analysis and do not verify the second hypothesis. Moreover, Table 5 shows that there is no significant relationship between ranking variables and the chairperson's fees.

In accordance with the findings of Fama and Jensen (1983), our results indicate that boards with more independent members or a separate CEO and chairperson receive less remuneration. By giving small payments, the quality and integrity of the independent board should be more securely guaranteed. It also appears that boards with strong shareholder rights and compensation have more power to increase their compensation.

Before providing the results of multivariate regressions in the presence of control variables, we present the correlation matrix in Table 6. As seen in Panel A of this table, total marks seem to be higher for large firms and firms with higher CEO compensation. Among the sub-ranking criteria, disclosure is the one most correlated with the explanatory variables. The board's composition is the least correlated. Additionally, there is a strong positive correlation between the size and the complexity of the firm (coefficient = 0.989) on the one hand and between these two variables and CEO compensation (coefficient = 0.64) on the other hand (see Table 6). Thus, larger firms appear more complex and their CEOs, as well as their directors, exert more effort to realise higher benefits. We would expect board compensation to be higher in bigger firms and in those operating in more uncertain environments.

TABLE 5: EMPIRICAL RESULTS OF MULTIVARIATE REGRESSIONS BETWEEN DIRECTORS' FEES AND BOARD'S QUALITY COMPONENTS USING MODEL:

Directors' fees measures = $b_0 + b_1$Log(*Board composition*) + b_2Log(*Shareholding compensation*) + b_3Log(*Shareholder rights*) + b_4Log(*Disclosure*) + ε

	Dependent Variables			
	Individual Directors' Fees	**Sum of Individual Directors' Fees**	**Chairperson's Fees**	**Total Directors' Fees**
Constant	3.615 (10.7)***	4.261 (9.77)***	3.147 (6.56)***	4.100 (9.84)***
Board composition	-0.17 (0.8)	-0.267 (0.88)	0.505 (1.53)	-0.035 (0.12)
Shareholding compensation	0.400 (3.24)***	0.640 (3.98)***	0.454 (2.50)**	0.553 (3.57)***
Shareholder rights	0.409 (3.66)***	0.500 (3.34)***	0.371 (1.80)*	0.484 (3.22)***
Disclosure	0.438 (2.430)**	0.576 (2.34)**	0.369 (1.72)*	0.567 (2.26)**
R-squared	17.21%	20.10%	18.48%	20.04%
Observations	204	204	204	204

In our regressions, we follow the literature in using the logarithm of the directors' compensation.
Absolute value of *t* statistics is in parenthesis.
* Statistically significant at the 0.10 level; ** statistically significant at the 0.05 level; *** statistically significant at the 0.01 level.

The mean of the VIF (18.07) is consistent with these results since it is higher than 10, indicating a serious problem of multicollinearity.

The existence of some correlations prevents us from including all variables in the same regression. We therefore put the correlated explanatory variables in separate regressions and not in the same one (see Table 7).

The results of these regressions are consistent with our prediction that the board's quality should be positively and significantly related to its remuneration even when we control by using the variables of governance, performance and other characteristics (see Table 7). Similarly, we find that the directors' compensation is generally positively related to the firm's size and its more complex environment.

Additionally, there is a significant positive relationship between the CEO and the directors' compensation variables, revealing that large and complex firms are more difficult to control and therefore need more effort and skill from both CEO and directors. This can explain the strong positive relationship between the remuneration of the two functions. The sixth, seventh and ninth hypotheses are also confirmed.

Brick et al. (2006), on the other hand, provide another explanation, claiming that the positive relationship can be due to cronyism. In the Canadian context, we sustain the first explanation since the bargaining power between managers and directors decreases in firms with strong shareholder rights.

As reported in Table 7, the type of industry does not have any impact on remuneration. The firm performance is not a determinant of the board's compensation since ROA is not significant at the 5 per cent level in any model used. The eighth hypothesis is therefore verified. As suggested by Crespi-Cladera and Gispert-Pellicer (2003), a plausible explanation of this finding may be that in a firm characterised by a higher ownership concentration, as in Canadian companies, the board compensation–performance relationship is weak. Finally, all the hypotheses that have previously been developed are accepted except for the second one, which

TABLE 6: CORRELATION METRICS

Categories	Annual CEO Compen-sation	Total CEO Compen-sation	ROA	Total Assets	Complexity	Board Composition	Shareholding Compensation	Share-holder Rights	Disclosure	Total Marks
Annual CEO compensation	1	0.791**	0.19**	0.58**	0.569**	0.293**	0.254**	0.068	0.328**	0.324**
Total CEO compensation		1	0.25**	0.64**	0.623**	0.309**	0.356**	0.188**	0.401**	0.432**
ROA			1	0.155*	0.169*	-0.009	0.095	0.05	0.179*	0.084
Total assets				1	0.989**	0.137*	0.394**	0.248**	0.361**	0.387**
Complexity					1	0.119	0.374**	0.238**	0.355**	0.363**
Board composition						1	0.38**	0.254**	0.363**	0.782**
Shareholding compensation							1	0.177*	0.428**	0.684**
Shareholder rights								1	0.209**	0.637**
Disclosure									1	0.581**
Total marks										1

*Statistically significant at the 0.05 level, ** statistically significant at the 0.01 level.

states that the composition of the board is positively associated with the level of the directors' compensation.

TABLE 7: EMPIRICAL RESULTS OF MULTIVARIATE REGRESSIONS BETWEEN DIRECTORS' FEES, BOARD'S QUALITY AND CONTROL VARIABLES USING MODEL:

Directors' fees measures = $b_0 + b_1\text{Log}(\textit{Total marks}) + b_2\text{Log}(\textit{Firm size}) + b_3\text{Log}(\textit{CEO compensation}) + b_4(\textit{Performance}) + b_5\text{Log}(\textit{Complexity}) + b_6(\textit{Industry}) + \varepsilon$

	Dependent Variables		
	Individual Directors' Fees		
	Model (1)	*Model (2)*	*Model (3)*
Constant	1.48 (3.04)***	1.9 (4.35)***	1.91 (4.33)***
Log(*Total marks*)	0.79 (2.73)***	0.67 (2.79)***	0.74 (3.03)***
Log(*Firm size*)		0.21 (7.8)***	
Log(*CEO compensation*)	0.25 (4.03)***		
Performance	2e-03 (1.46)	3e-03 (1.96)**	3e-03 (1.79)*
Complexity			0.23 (7.31)***
Industry	6e-03 (0.75)	0.01 (1.47)	0.01 (1.33)
R-squared	25%	32%	31%
	Sum of Individual Directors' Fees		
	Model (1)	*Model (2)*	*Model (3)*
Constant	1.24 (2.21)**	1.84 (3.95)***	1.87 (3.87)***
Log(*Total marks*)	1.06 (2.96)***	0.84 (3.16)***	1.00 (3.52)***
Log(*Firm size*)		0.33 (10.9)***	
Log(*CEO compensation*)	0.37 (4.61)***		
Performance	1e-03 (0.5)	2e-03 (1.00)	2e-03 (0.9)
Complexity			0. 34 (8.86)***
Industry	3e-03 (0.35)	8e-03 (0.82)	6e-03 (0.60)
R-squared	29%	34%	37%
	Chairperson's Fees		
	Model (1)	*Model (2)*	*Model (3)*
Constant	1.29 (2.01)**	1.85 (3.06)***	1.84 (3.01)***
Log(*Total marks*)	1.04 (2.96)***	0.91 (2.63)***	1.04 (3.00)***
Log(*Firm size*)		0.23 (6.73)***	
Log(*CEO compensation*)	0.29 (4.63)***		
Performance	-4e-03 (0.16)	2e-04 (0.10)	2e-04 (0.11)
Complexity			0. 23 (6.27)***
Industry	0.01 (1.24)	0.01 (1.70)	0.01 (1.55)
R-squared	25%	30%	28%

(*Continued*)

TABLE 7: (*CONTINUED*)

	Total Directors' Fees		
	Model (1)	*Model (2)*	*Model (3)*
Constant	1.36 (2.49)***	1.80 (4.09)***	1.91 (4.03)***
Log(*Total marks*)	1.21 (3.47)***	0.99 (3.75)***	1.14 (4.07)***
Log(*Firm size*)		0.30 (9.83)***	
Log(*CEO compensation*)	0.33 (4.54)***		
Performance	$2e^{-04}$ (0.09)	$9e^{-04}$ (0.44)	$9e^{-04}$ (0.40)
Complexity			0.30 (8.55)***
Industry	$6e^{-03}$ (0.61)	0.01 (1.07)	$9e^{-03}$ (0.85)
R-squared	27%	38%	34%

In our regressions, we follow the literature in using the logarithm of the directors' compensation.
Firm size is measured by natural logarithm of total assets; CEO compensation is measured by the total compensation defined as the annual plus the long-term compensation (which includes vested restricted stock grants and stock gains – the value realised from exercising stock options during the just-concluded fiscal year); firm performance is measured by ROA; complexity of the firm refers to the firm's R&D expenditures and the amount of capital invested (measured by natural logarithm of total assets/board size); industry is coded 1–10 representing the following: consumer discretionary, consumer staples, energy, financial, health care, industrials, information technology, materials, telecom services and utilities.
The results using 'Annual CEO Compensation' instead of 'Total CEO Compensation' are not different.
* Statistically significant at the 0.10 level; ** statistically significant at the 0.05 level; *** statistically significant at the 0.01 level.

DISCUSSION AND CONCLUSION

This study investigates the link between the board's quality and the directors' compensation in the Canadian context. Contrary to previous literature, which used traditional measures of the board's quality, we use the measure provided by the 'Report on Business' published in the *Globe and Mail*, which synthesises several characteristics of the board. It is defined by a score used by McFarland (2007). Based on this score, the sample of 204 Canadian firms is ranked on four components: board composition, shareholding compensation, shareholder rights and disclosure.

We find a positive and significant relationship between quality and board remuneration, whether we measure the dependent variable by individual or total remuneration.

In the context characterised by a high ownership concentration, companies have higher incentives to compensate boards when governance mechanisms are effective. This result suggests that the quality of the board of directors influences the level of the director's compensation, contrary to the conclusions of some studies realised in the German context (e.g. Andreas et al., 2009).

It is obvious that in the ownership dispersion context, the directors' compensation is structured to mitigate agency conflicts and to ameliorate the monitoring function in the shareholders' interest. But, even if ownership is concentrated, the directors' compensation design remains important. The board's advising function

is also important in helping managers make good decisions. Directors bring valuable expertise and connections to the companies that increase the level of compensation.

Moreover, the results also reveal that the composition of the board does not have a significant impact at the 1 per cent level. Our findings are in contrast to earlier studies (Ryan and Wiggins, 2004; Yermack, 2004; Brick et al., 2006) which showed a significant effect of the composition of the board on the directors' compensation. The compensation pattern is better explained by shareholder compensation, shareholder rights and disclosure. Boards with the strongest shareholder rights and with directors who own equities are the better remunerated boards.

Our findings suggest that classical measures of board quality, such as independence, are not the best factor to influence the compensation policies. Controlling shareholders plays an important role in fixing the level of compensation. In this case, compensation cannot be viewed as a bargaining game between managers and directors. Directors are more interested in improving the performance of the firm and this has a positive effect on their remuneration. The fact that the company decides to disclose the directors' biographies, ages and compensation means that the directors are skilled experts and spend many efforts in fulfilling their responsibilities. Such directors require higher remuneration. These components must be taken into account when studying the impact of the board's quality on compensation fees.

By adding economic determinants in the multivariate regressions as control variables, the strongest relationship does not change. In terms of control variables, the regressions indicate that firm size is positively related to board remuneration. However, the effect of the firm's performance and the type of industry is not significant.

Like all studies, our research has a number of limitations. Firstly, our sample only covers data for a one-year period. We suggest that future research should incorporate longer periods involving the period after the financial crisis, this will allow analysis of the relationships between director quality and director remuneration during a crisis.

Secondly, the aggregate index can be an object of criticism since the weighting scheme is arbitrary. The items of this index should be well established using a better theoretical construct. Regulators and financial analysts can contribute to formulate a more objective weighting scheme and give more credibility to this index.

ENDNOTES

1 See Adjaoud et al. (2007), who used the same tool.

2 See <http://v1.theglobeandmail.com/v5/content/boardgames/index.php?year=2007&view=corp&industry=all&sort=DESC&ord=q1&cat=board_comp>.

3 COMPUSTAT is a database of financial, statistical and market information on global companies throughout the world. It is a division of Standard & Poor's, which is a division of the McGraw-Hill companies, US.

4 Stock Guide is a commercial database containing historical accounting information of TSX-listed firms. It is published by Stock Guide Publications in Montreal, Quebec.

5 www.sedar.com (System for Electronic Document Analysis and Retrieval) is the official website that provides access to most public securities documents and information filed by Canadian public companies.

6 See the study published in the *Globe and Mail* by McFarland (2007).

APPENDIX 1: CRITICAL COMPONENTS AND RESPECTIVE MARKS

Board Composition		Shareholding and Compensation		Shareholder Rights		Disclosure	
Independent	8	Directors required to own shares	4	Election of directors	4	Related directors	1
Audit committee	4	Directors own stocks	4	Majority voting policy	2	Board members' biographies	1
Compensation committee	4	CEO required to own stock	2	Stock options dilutive	2	Attendance records of directors	2
Nominating committee	3	CEO owns shares	3	Annual grant rate excessive	2	Directors' compensation for previous year	2
Split chairperson/CEO	5	Loans to senior executives	2	Vesting period	2	Total accumulated value of directors' equity holdings	1
Relationships among directors and other boards of publicly traded companies	3	CEO bonus	4	Option plan features	2	Fees paid to an outside compensation consultant	1
Directors on more S&P/TSX company boards	2	CEO compensation	2	Award options to directors	2	Directors' ages	1
Women on the board	2	CEO's pension plan	2	Performance hurdles for deferred share units or options	2	Retirement policy for directors	1
Board performance	3	Total value of the CEO's accumulated shares	1	Non-voting or subordinate voting shares	10		
Meeting without management	3	Total cost of compensation to the top executive team	1				
Maximum marks	*37*		*25*		*28*		*10*

The specific details on corporate governance index components appear on the *Globe and Mail* website (McFarland, 2007).
S&P/TSX = Standard and Poor's/Toronto Stock Exchange.

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