

## **Board Size, CEO Duality, and the Value of Canadian Manufacturing Firms**

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### **Abstract**

The purpose of this study is to examine the impact of board size and the CEO (Chief Executive Officer) duality on the value of Canadian manufacturing firms. A sample of 91 Canadian manufacturing firms listed on Toronto Stock Exchange (TSX) for a period of 3 years [from 2008-2010] was selected. The co-relational and non-experimental research design was used to conduct this study. The empirical results show that larger board size (large number of directors) has a negative impact on the value of Canadian manufacturing firms. The findings also show that the CEO duality has a positive impact on the value of Canadian manufacturing firms. In addition, firm size, firm performance, and potential growth of the firm positively impact on the value of Canadian manufacturing firms. This study contributes to the literature on the factors that affect value of the firm. The findings may be useful for the financial managers, investors, and financial management consultants.

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## 1 Introduction

This study examines the impact of board size and the CEO duality on the value of Canadian manufacturing firms. Good corporate governance is believed to be one of the important factors in improving the value of the firm. Authors such as Black [1], Klapper and Love [2], Gompers *et al.* [1], Beiner and Dchmid [4], and Rouf [5] also argue that corporate governance plays an important role in improving the value of the firm. Corporate governance is defined as the system by which business corporations are directed and controlled [6, p. 16].

Financial scandals in Canada (e.g., Livent Inc., Corel Corporation, and Nortel) [7] and the recent collapse of major corporate institutions in USA, South East Asia, Europe and Nigeria such as Adelphia, Enron, World Com, Commerce Bank and XL Holidays have shaken investors' faith in the capital markets and the efficacy of existing corporate governance practices in promoting transparency and accountability. These scandals have negative impact on the value of the firm. Thus, these scandal issues have brought to the fore once again the need for the practice of good corporate governance.

The theoretical underpinnings for the extant research in corporate governance was stated by Berle and Means [8] from their classic thesis "The Modern Corporation and Private Property" which describes a fundamental agency problem in modern firms where there is a separation of ownership and control. Since that time period, different authors have conducted research on corporate governance to extend Berle and Means' study. For example, Jensen and Meckling [9] defined agency relationship. The agency relationship is a contract under which one or

more persons (principal) engage another person (agent) to perform some service on their behalf, which involves delegating some decision-making authority to the agent [10, p. 437].

The growth in the firm value is important to achieve the overall corporate objectives, to keep the organization in business, and to create a greater prospect for future opportunities in domestic and as well as in the global market. The board of directors and the CEO duality play an important role in the growth of the firm value.

Most empirical studies on corporate governance and firm value have been conducted on industrial firms. However, there are a very few studies that show the impact of board size and the CEO duality on the value of the firm. Therefore, this study examines the impact of board size and the CEO duality on the value of the Canadian manufacturing firms.

There are a number of variables that are potentially associated with the value of the firm. In this study, the selection of exploratory variables is based on the previous empirical work. The choice of proxy variables can be limited, however, due to data limitations. As a result, the set of proxy variables includes six factors: board size, CEO duality, firm size, return on assets, potential growth of the firm, and firm value.

Previous studies [1, 2, 3, 4] show that good corporate governance improves the value of the firm. There are a very few studies that show the relationships between board size, CEO duality, and the value of the firm. However, Rouf [5] has tested the relationship between board size, CEO duality, and firm value and Mak and Kusnadi [11] have tested relationships between board size and the firm value. This study seeks to extend previous studies by using data from the Canadian manufacturing industry.

This study contributes to the literature on the relationships between board size, CEO duality, and firm value in at least two ways. First, it focuses on Canadian manufacturing firms while a very limited research has been conducted

on such firms recently. Second, this study validates the findings of previous authors by testing the relationships between board size, CEO duality, firm size, return on assets, potential growth, and firm value of the sample firms. Thus, this study adds substance to the existing theory developed by previous authors.

## 2 Literature Review

The board of directors is generally composed of inside and outside members. Inside members are selected from executive officers and the shareholders. Outside directors are members whose only affiliation with the firm is their directorship [5, p. 239]. According to Kajola [6, p. 17], the business of a firm is managed under the direction of a board of directors who delegates to the CEO and other management staff (the day to day management of the affairs of the firm). The directors, with their wealth of experience, provide leadership and direct the affairs of the business with high sense of integrity, commitment to the firm, its business plans, and long-term shareholder value.

It has been found that the larger board size negatively impacts the value of the firm. Rouf [5, p. 238] argues that small board size is generally believed to improve the value of the firm because the benefits by larger boards of increased monitoring are outweighed by the poor communication and decision making of larger groups. Lipton and Lorsch [12] and Jensen [13] also describe that the larger board size is less effective. Thus, the larger board size is not in the favor of the firm.

However, this is not the case with the CEO duality. If CEO is the director of the board, the performance of the firm improves [14]. The improvement in firm performance helps to enhance the value of the firm. Although, it has been found that the CEO duality improves the firm performance, Kajola [6] argues that concentration of decision management and decision control in one individual's

hands has a negative impact on the board's effectiveness. The empirical studies on the relationship between board size, CEO duality, and the firm value are as follows:

Black [1] collected data from Russia and found that a firm's corporate governance behavior can have a huge effect on its market value.

Gompers *et al.* [3] used incidence of 24 governance rules to construct a "Governance Index" to proxy for the level of shareholder rights at about 1,500 large firms during the 1990s. Authors found that the firms with stronger shareholder rights had higher firm value; that is, strong corporate governance improves the value of the firm.

Klapper and Love [2] used data on firm-level corporate governance rankings across 14 emerging markets to conduct research on the corporate governance. Their results suggest that firms can partially compensate for ineffective laws and enforcement by establishing good corporate governance and providing credible investor protection.

Mak and Kusnadi [11] examined the impact of corporate governance mechanisms on the firm value by collecting data from Singapore and Malaysia. They found a negative relationship between the board size and the firm value.

Rouf [5] collected data from Bangladesh to test the relationship between corporate governance and the value of the firm. Through correlation and regression analysis, Rouf found a positive relationship between the CEO duality and the firm value.

In summary, limited availability of literature review shows that both the board size and the CEO duality affect the firm value. Therefore, it is theorized that the larger board size has a negative impact on the firm value and the CEO duality has a positive impact on the firm value in the Canadian manufacturing industry.

### 3 Method

#### 3.1 Measurement

To remain consistent with previous studies, measures pertaining to i) board size, CEO duality, and return on assets were taken from Rouf [5], ii) potential growth of the firm were taken from Su and Vo [15], iii) firm size and Tobin's Q taken from Toledo [16]. The measurements of the independent and dependent variables are as follows:

Board size (BS) independent variable was measured as number of directors on the board.

To measure the CEO duality (CD) independent variable, value one (1) was assigned if the same person occupies the post of the chairman and the chief executive officer and zero (0) for otherwise.

In addition, three control variables (firm size, return on assets, and potential growth of the firm) were used.

Firm size (FS) control variable was measured by logarithm of the average total assets of the firm.

To measure return on assets (ROA) independent variable, net income after tax scaled by total assets was used.

Potential growth (PG) independent variable was measured as firm's market value (market value of equity) scaled by the book value of assets.

Tobin's Q (firm value - Q) dependent variable was measured as market value of equity plus the book value of debt scaled by the book value of total assets.

The following regression model was used to test the relations of board size, CEO duality, firm size, return on assets, and potential growth with firm value:

$$Q_{i,t} = b_0 + b_1 * BS_{i,t} + b_2 * CD_{i,t} + b_3 * FS_{i,t} + b_4 * ROA_{i,t} + b_5 * PG_{i,t} + \mu_{i,t}$$

where  $b_0$  = Constant of the regression equation

$b_1, b_2, b_3, b_4,$  and  $b_5$  = Coefficient of BS, CD, FS, ROA, and PG

$Q_{i,t}$  - Value of firm  $i$  in time  $t$

$BS_{i,t}$  - Number of directors on the board for firm  $i$  in time  $t$

$CD_{i,t}$  - CEO duality for firm  $i$  in time  $t$

$FS_{i,t}$  - Logarithm of the average total assets of firm  $i$  in time  $t$

$ROA_{i,t}$  - Return on assets for firm  $i$  in time  $t$

$PG_{i,t}$  - Potential growth of firm  $i$  in time  $t$

$\mu_{i,t}$  = the error term

### 3.2 Data Collection

A database was built from a selection of approximately 400 financial-reports that were made public by publicly traded companies between January 1, 2008 and December 31, 2010. The selection was drawn from Mergent Online [<http://www.mergentonline.com/compsearch.asp>] to collect a random sample of manufacturing companies. Out of approximately 400 financial-reports announced by public companies between January 1, 2008 and December 31, 2010, only 91 financial reports were usable. The cross sectional yearly data were used in this study. Thus, 91 financial reports resulted to 273 total observations. Since random sampling method was used to select companies, the sample is considered as a representative sample.

For the purpose of this study, certain industries were omitted due to the type of activity. For example, all the companies from the financial services industry were omitted. In addition some of the firms were not included in the data due to lack of information for the certain time periods.

### 3.3 Descriptive Statistics

Table 1 shows descriptive statistics of the collected variables. The

explanation on descriptive statistics is as follows:

- i) Total observations:  $91 \times 3 = 273$
- ii) Q (Tobin's Q): 1.48
- ii) BS (Board size): 7.47
- iii) FS (Firm size): 2.66 million
- iv) ROA (Return on assets): 6%
- v) PG (Potential growth): 1.71

Table 1: Descriptive Statistics of Independent, Dependent, and Control Variables (2008-2010)

	Minimum	Maximum	Mean	Std. Deviation
Q	0.64	5.46	1.48	0.81
BS	2	16	7.47	2.62
FS	0.70	4.52	2.66	0.73
ROA	-0.23	0.40	0.06	0.09
PG	-0.24	8.71	1.71	1.29

Table 2: Pearson Bivariate Correlation Analysis

	Q	BS	CD	FS	ROA	PG
Q	1	0.142	0.230*	0.074	0.438**	0.922**
BS		1	-0.203	0.117	0.114	0.285**
CD			1	0.058	-0.099	0.153
FS				1	0.062	0.003
ROA					1	0.329**
PG						1

\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

Q = Tobin's Q

BS = Board size

CD = CEO duality

FS = Firm size

ROA = Return on Assets

PG = Potential growth

Table 2 provides the Pearson correlation for the variables that were used in the regression model. The Bivariate correlation analysis shows that the value of Canadian manufacturing firms is positively correlated with the CEO duality, return on assets, and potential growth (see Table 2).

#### **4 Regression Analysis, Findings, Conclusion, Limitations, and Future Research**

A negative relationship between board size and the value of Canadian manufacturing firms was found (see Table 3); that is, the larger board size has a negative impact on the value of the Canadian manufacturing firms. A Positive relationship between the CEO duality and the value of the Canadian manufacturing firms was found; that is, the CEO duality enhance the value of the Canadian manufacturing firms.

Previous studies [1, 2, 3] found that good corporate governance improves the value of the firm. Rouf [5] found a positive relationship between the CEO duality and the value of the firm. Mak and Kusnadi [11] found a negative relationship between the board size and the firm value. The findings of this paper related the relationships between board size, CEO duality, and firm value are similar to the findings of Rouf [5] and Mak and Kusnadi [11]. In addition, the finding of this paper lend some support to the previous authors argument that good corporate

governance improves the value of the firm.

Positive relationships between i) firm size and firm value, ii) return on assets and firm value, and iii) the potential growth and firm value were found (see Table 3); that is, firm size, return on assets, and the potential growth of the firm increase the value of the Canadian manufacturing firms.

Table 3: OLS Regression Estimates on Factors Affecting Potential Growth <sup>a, b, c</sup>

[R <sup>2</sup> = 0.899; SEE = 0.266; F = 151.075; ANOVA's Test Sig. = 0.000]							
Regression Equation: Q = 0.431 - 0.038 BS + 0.143 CD + 0.079 FS + 1.540 ROA + 0.560 PG							
	Unstandardized		Standardized			Collinearity	
	Coefficients		Coefficients <sup>c</sup>			Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.431	0.129		3.336	0.001		
BS	-0.038	0.012	-0.122	-3.235	0.002	0.839	1.193
CD	0.143	0.065	0.081	2.199	0.031	0.877	1.140
FS	0.079	0.039	0.070	2.010	0.048	0.971	1.030
ROA	1.540	0.352	0.163	4.382	0.000	0.863	1.158
PG	0.560	0.025	0.891	22.623	0.000	0.768	1.302

<sup>a</sup> Dependent Variable: Q (Firm value)

<sup>b</sup> Independent Variables: BS, CD, FS, ROA, and PG

<sup>c</sup> Linear Regression through the Origin

SEE = Standard Error of the Estimate

Note that:

- A test for multicollinearity was performed. All the variance inflation factor (VIF) coefficients are less than 2 and tolerance coefficients are greater than 0.50.

- 89.90% ( $R^2 = 0.899$ ) of the variance in the degree of Q can be explained by the degree of PG, FS, CD, ROA, and BS in the Canadian manufacturing industry.
- The analysis of variance (ANOVA) test is also significant at 0.000.

#### **4.1 Conclusion**

In conclusion, the larger board size is not in the favor of the Canadian manufacturing corporations because it has a negative impact on the value of the firm. Therefore, Canadian manufacturing firms should use an optimal board size based on firm size.

The CEO duality is in the favor of the Canadian manufacturing firms because it improves the value of the firm. Although, the CEO duality improves the value of the firm, it may not be beneficial for the very large multinational firms. The CEO may take high risk to expand in the global market to increase the value of the firm. The CEO duality may also lead to an agency problem. For example, the CEO may not work in the favor of internal and external stakeholders to maximize their wealth. Therefore, the CEO duality should be used with caution.

Results also show that firm size, return on assets, and the potential growth improve the value of the Canadian manufacturing firms.

#### **4.2 Limitations**

This study is limited to the sample of Canadian manufacturing industry firms. The findings of this study could only be generalized to manufacturing firms similar to those that were included in this research. In addition, sample size is small.

### 4.3 Future Research

Future research should investigate generalizations of the findings beyond the Canadian manufacturing sector. Important control variables such as industry sectors from different countries, audit committee, board composition, etc., should also be used.

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