

Do Boards of Directors that are Perceived to be Better Aligned with Shareholder Interests Enhance the Operating Performance of Firms?

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ABSTRACT

This study empirically tests the hypothesis that perceptions of the board's alignment with shareholder interests are reflected in the financial performance of firms. The hypothesis is tested by examining the relationship between operating earnings in excess of the cost of capital (ER) and firm grades based on a new index of shareholder confidence based on: individual potential, group potential and past actions of directors for a sample of large publicly traded Canadian firms from 2002–2006. High shareholder confidence index values are generally associated with higher ER, although the relationship is not monotonic for higher graded boards. The performance gap between firms with high vs. low expected agency costs as reflected in terms of directors' alignments with shareholder interests amounts to almost 30%.

JEL Code: G34

Keywords: board quality; operating performance

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I. INTRODUCTION

The efficiency of boards of directors is a topic that has been of considerable interest by scholars over the past several decades. Williamson (2008) asserts that using contract theory, the main purpose served by the board of directors is to “safeguard equity investments, thereby to reduce the cost of capital which function is discharged by the board serving as monitor.” Based on transactions cost efficiencies, he develops a dual purpose interpretation for boards: efficient boards must both monitor and delegate, with the latter function being crucial for adaptive (dynamic) efficiency. The empirical relationship between board effectiveness and corporate performance remains an issue of considerable debate. Some studies have looked at the role of board composition as a driver of efficiency – e.g. the ratio of inside (executive) directors to outside (non-executive) directors (Fama (1980), Fama and Jensen (1983), Gillette, Noe, and Rebello (2003), and Duchin, Matsusaka, and Ozbas (2010)), and board size (e.g. Eisenberg, Sundgren, and Wells(1998); Coles, Daniel and Naveen (2008)). Still others have looked at social ties among board members (Huang and Kim (2009); Stuart and Yim (2010) of individual board directors (Bowman and Kakabadse (1997), Renton (1999), Shen (2005), and Roberts et al.(2005)).

A fundamental problem of much of the extant empirical literature on board efficiency is the absence of data on what actually occurs within boardrooms (Daily et al. (2003)). Board members are reluctant to share information about the inner dynamics of boards for many reasons. Directors fear that revealing boardroom activities, or even just rating the

effectiveness of the board, could have adverse effects on relationships with investors and other board members (Kesner and Johnson, (1990)). Furthermore, there are concerns that exposure to internal practices could increase the risk of shareholder lawsuits should troubles emerge (Langevoort (2001)).

In this paper, we seek to contribute to this line of research by looking, for the first time at the relationship between company performance and a new measure of perceived board effectiveness, which is designed to capture the alignment of the directors with the interests of shareholders in Canada. Specifically, we look at the Rotman/Clarkson (CCBE²) Canadian Board Shareholder Confidence Index as our measure of shareholder's perceptions of the board's efficiency as it relates to the performance of companies on the Toronto Stock Exchange. This measure is constructed in a manner that similar in spirit to the GM/CalPERS approach, and focuses on the "professionalism" of the board and its alignment with shareholder interests. Millstein and MacAvoy (1998)'s pioneering and widely cited study demonstrates a significant positive relationship between these CalPERS survey grades, which serve as surrogates for professional board behavior.¹ Our basic hypothesis that we test is that expectations of better alignment of board interests with shareholder interests and the

¹ As summarized MacAvoy and Millstein (1998) the main provisions (pp. 1289-90) include: "(1) the board has independent leadership in the form of either a separate chairman or a lead director; (2) the independent directors meet without management present at least two or three times per year to discuss management performance and to evaluate the CEO; (3) the CEO's evaluation is based on objective criteria- the performance of the business and accomplishment of its strategic objectives; (4) the board also formally evaluates itself annually; (5) the independent directors determine how the board structures its governance processes; (6) the independent board leadership (the separate chairman or the lead director) establishes the board agenda together with the CEO, employing additional input from board members (and concise information on agenda items circulates in advance, with board meetings reserved for discussion); and (7) the independent directors, through a committee, select board member candidates, with input from the board leadership and the CEO, and invitations to join the board are extended by the board itself, together with the board leadership and the CEO."

concomitant reduction in agency costs (Jensen and Meckling (1976)) should give rise to improved operating performance.

Several alternative indexes of good governance/efficient boards for the US have emerged over the years as alternatives to the evolving GM/CalPERS principles,² and a vigorous debate remains concerning their usefulness (see e.g. Brown and Caylor (2006) and Bhagat, Bolton and Romano (2007)). However, little work has been done for other countries. Our paper serves to provide new evidence on this score.

The organization of the paper is as follows. Section II describes the methodology for the tests as well as the data used in the analyses. Empirical results follow in section III. The paper concludes with a summary in Section IV.

II. METHODOLOGY AND SAMPLE GENERATION

A. Measuring Board Effectiveness

In Spring 2003, the Clarkson Center for Business Ethics and Board Effectiveness (CC(BE²)) at Rotman School of Business of University of Toronto introduced a new measure of Board Effectiveness: the “Board Shareholder Confidence Index,” which serves as the basis of our study. The index is ostensibly designed to capture the essential factors affecting shareholders’ confidence in the Boards’ abilities to fulfill their duties. These factors differ from the TSX Guidelines³ for effective corporate governance in that they take into account the shareholders’ perceptions of risk. Boards of Directors are evaluated and

² These include the Gompers et al (2003) G-Index , and the Bebchuk et al (2005) entrenchment index.

³ The TSX guide to good disclosure can be accessed at:

http://www.tmx.com/en/pdf/NP58-201_CGGuidelines_Apr15-05.pdf

ranked by their potential to act in an effective way and by their performance, as indicated by past practices. The CC(BE²) Board shareholder Confidence Index assigns scores to companies listed on the S&P/TSX Index from AAA+ [highest] to C [lowest] based on the consideration of the following three perspectives:⁴

- Potential of individual board members
- Potential of the board as a group
- Past practices of the board

Individual board member potential is assessed by the perceived ability of individual directors to act independently from the interests of management and independently from other directors. The group potential of the board is meant to reflect the extent that the board as a whole represents the interests of shareholders, without compromising the Individual Potential of the directors. Factors determining Group Potential include the Board Meeting Structure, and the implementation of Board Evaluation Processes. The board's past practices are scored in accordance to its past implementation of policies that are deemed to be opposed to the best interests of shareholders.

A detailed summary of the methodology used to determine the firm's score is provided in Appendix 1. The actual scoring procedure initially assigns each company 100 points. Deductions are made based on deficiencies are imputed with respect to the Board's performance according to the criteria embedded in each of the three categories: Individual

⁴ See <http://www.rotman.utoronto.ca/userfiles/ccbe//2009glossary.pdf>;

Potential, Group Potential, and Past Practices.⁵

The CCBE2 index does not collect data directly from boardrooms, and does not interview shareholders directly. It presumes to be a “timely, reliable, actionable and comprehensive” index that captures factors affecting shareholders’ confidence in Boards’ abilities to fulfil their duties.” Since the index may be deficient, and may not include all relevant information used by shareholders to form expectations of board performance our analysis represents a joint test: a) that the model to capture shareholders’ confidence in the board is correct and b) that expectations of better alignment of the board of directors with shareholder interests are associated with improved operating performance of firms.

B. Measures of Corporate Performance

Similar to Millstein and MacAvoy (1998), our primary measure of performance is the firm’s Economic Value AddedTM (ER), which is a metric for a company’s ability to generate economic profits that enhance the wealth for shareholders (Stern and Stewart (1994)) It is

⁵ For example, in the *Individual Potential* category, a deduction of five points for director interlock. The rationale is that: “if the same two directors sit on more than one Board together, there is a perceived risk that decisions are being made in the interests of another company.”; In the *Group Potential Category*: every member of the Audit and Compensation Committees must be fully independent to avoid deductions. Deductions are also made if firms do not implement regular and formal evaluation processes for both the Board as a whole, and for each of its individual Directors; in the *Past Practices Category*: A deduction is made if a CEO’s total compensation increases by more than 25% following a year during which the company’s share price decreased by more than 25% Further deductions are made if executive and director stock options represent more than 10% of the company’s shares as well as if such options have been repriced during the past few years. The firm’s overall score is translated into a grade in accordance with the following schedule:

Overall Score	Grade
100	AAA+
95	AAA
90	AA
75	A
50	B
<50	C

determined as an excess return: the residual after the cost of capital has been subtracted from returns on the relevant investment. shareholders. As a measurement for assessing a board's performance, ER may be superior to the firm's stock price in that it represents what the company has accomplished during the period being studied rather than what investors predicted the company will do in the future. In addition, ER is free from exogenous factors including interest rates and general market fluctuations (Millstein and MacAvoy (1998, 1305)).

We determine ER as a multiple of the capital stock and the excess of the return on investment capital and the weighted average cost of capital:

$$ER = \text{Capital stock} * (\text{ROIC} - \text{WACC}) \quad (1)$$

Capital stock is measured as the sum of the book value of equity and debt. Return on invested capital (ROIC) is the ratio of the firm's earnings to the value of capital.⁶

$$ROIC = \text{NETOPAT} / \text{OIC} \quad (2)$$

NETOPAT is the Net Operating Profit Less Adjusted Taxes.⁷ The weighted average cost of capital (WACC) is the overall cost of the company's debt and equity, which is calculated by dividing the overall costs by the total capital invested in the operation (book value of debt

⁶ Operating Invested Capital (OIC) is defined as follows:

OIC = Operating Working Capital (OWC) + Net Plant, Property & Property & Equipment + Other Assets + Other Liabilities + Value of Operating Leases + Goodwill. As in Millstein and MacAvoy, we exclude goodwill in the estimation, as it is an intangible asset that is calculated retrospectively.

OWC = Operating Cash + Excess Marketable Securities + Accounts Receivable + Inventories + Other current Assets (Less Excess Marketable securities) – Accounts Payable – Other Current Liabilities

⁷ NETOPAT = EBIT – Taxes on EBIT – Change in Deferred Taxes.

The three components of cost of capital are then weighted according to the proportion that each represents in the overall invested capital.

plus preferred stock and common stock):

$$WACC = \sum \frac{\text{Cost of Capital}}{\text{Capital Stock}} \quad (3)$$

The cost of a company i's equity (common stock) R_i is the estimated using the traditional capital asset pricing model (CAPM):

$$R_i = R_f + \beta_i * (R_m - R_f) \quad (4)$$

where R_m is the rate of return of the market index portfolio, R_f is the risk free interest rate, and β_i represents the covariance of the company's stock return with the with the market index return divided by the variance of the market index.

C. Data Description

The primary data sources for the financial and market data used in the analyses are COMPUSTAT and BLOOMBERG. Stock tickers listed in the CC(BE)2 score table are matched against tickers in both CompuSTAT and Bloomberg since each database uses different rules to designate tickers. Firms are assigned to industry sector according to their GICS (Global Industry Classification Standard) classifications which are provided in the

⁸ WACC = Cost of Debt+Cost of Preferred Stock+Cost of Common Stock / Debt+PreferredStock+Common Stock.

CC(BE)² index.

The Clarkson Centre for Business Ethics & Board Effectiveness CC(BE)² introduced the Board Shareholder Confidence Index in the year 2003. Our data embrace the five-year period 2002-2006, a time interval that should be sufficient to capture the effect of the board's impact on corporate performance. There are 211 firms in the 2003 CCBE index group; of these companies, 15 had to be deleted either because their data files from CompuSTAT and Bloomberg, or they were acquired/went out of business during the period 2004 to 2006. As a further screen, firms are included if financial data are available to calculate ROIC and WACC. M&A activities pose a problem for the spread calculation in a few cases. Since ROIC uses the operating invested capital figures from the beginning of a given year and compares them with earnings at year-end, M&A activities can skew the results of the calculations. To account for M&A's, we use the SDC database to check data for years and firm combination where companies may have engaged in extensive merger activity. If the firm's reported data are not adjusted for the M&A event, the firm is dropped from the sample for that year. We also eliminate regulated utilities from the sample, since their pricing (and performance) is determined by fiat. Financial firms are also not included.⁹ The final sample size consists of 724 firm-year observations. The distribution of the sample companies by industry and year is shown in Table 1.

[Please insert Table 1 about here]

⁹ Financial firms relatively low operating capital positions can result in dramatic fluctuations in calculating returns on invested capital. Accounting valuations of assets, size of asset and liabilities relative to earnings and the fluctuations in assets and liabilities can all lead to negative rates of return even when earnings are positive; as a result, the return on invested capital could be negative or a unreasonable high positive value (when the earnings measure is deflated by a small value). This particular character of financial firms differentiates them from other kinds of firms when calculating financial returns, and hence they are not included in our sample.

For each firm year, we determine an annual spread by subtracting WACC from ROIC. The firm's relative performance is calculated based on its performance adjusted for its industry average in each year as follows. Firms are assigned to one of the 18 industry groups. Industry adjusted means for WACC, ROIC and spread values for each company for each year are obtained by subtracting industry means from firm values. The firm's relative performance measure is the geometric mean of these spreads over the five-year period. The CCBE grade performance is the weighted average differential spread where the weight for each firm is that firm's percent of total assets of all firms with that grade. The cost of debt is computed as interest expense adjusted for the firm's tax shield effect; the cost of preferred stock is determined from dividends paid to the preferred shareholders. The S&P/TSX Composite index is used as a proxy for the market portfolio in the determination of the cost of equity. The risk free rate is the rate on three month T-bills.

III. EMPIRICAL RESULTS

Table 2 provides estimates of company excess returns by grade over 2002–2006. The grades are assigned by CCBE² according to the performance scores based on Canadian Board Shareholder Confidence Index data.

[Please insert Table 2 about here]

It is evident that firms with A or better grades have better performance than their counterparts, although the relationship is not monotonic. Within the A or better group, AAA+ or A grade companies achieve significant positive mean differential spreads over the five-year-period, (13% and 19% respectively). Somewhat surprisingly, companies receiving AA or AAA

grades exhibit negative mean differential spreads; however, their performance is on average that superior to that of companies receiving a B or C grade. For example, the overall performance for AAA grade companies is 2.78% below the weighed industry average level; however, it is 12% higher than that of B grade companies. In sum, high shareholder confidence index values are generally associated with higher ER, although the relationship is not monotonic for higher graded boards, as is illustrated in Figure 1.

[Please insert Figure 1 about here]

Table 3 shows the differential weighted excess return for companies which have the grades of A or better vs. those with a B or C grades. The A level companies outperformed non-A level companies in each of the five years with differences ranging from 4.64% to 6.06%. Over the five-year-period, A level companies performed 13.24% higher than their weighted industry performance, while non-A level companies performed 16.39% lower than their weighted industry average levels. The performance gap between well and poorly governed firms, in terms of directors' alignments with shareholder interests represents amounts to almost 30%.

[Please insert Table 3 about here]

To test the statistical significance of the observed difference, we perform a linear regression between ER and the firm's CCBE² grade. To account for industry factors as well as business cycle effects, we also incorporate binary variables representing the firm's industry and the calendar year for the observation. Hence, the regression is of the form:

$$ER_{it} = \alpha_0 + \sum \beta_j Grade_{ij} + \sum \gamma_k Industry_{ik} + \delta_l Year_{il} + \varepsilon_{it} \quad (5)$$

Where ER excess earnings Grade is the firm's CCBE² grade, Industry is the firms's industry, Year is the calendar year of the observation, and ε_{it} is a random error term.

OLS estimates of (5) are shown in Table 4¹⁰. The null hypothesis is that CCBE² grade does not affect a firm's economic value is strongly rejected in most cases. In terms of CCBE² director performance grades, a C grade company's excess return is 7% to 10% less than that of an A grade company per year on average. This suggests that firm's with boards that are better aligned with shareholder interests give rise to efficiencies that are reflected in enhanced economic value added.

[Please insert Table 4 about here]

As a further test, we performed a regression that is a variant of (5), which We then ran the regression again by assigning all companies into A level group if they received A, AA, AAA or AAA+ CCBE² grades and non-A level groups if they received B or C grade.

The model estimated is:

$$ER_{it} = \alpha_0 + \sum \beta_j AGrade_{ij} + \sum \gamma_k Industry_{ik} + \delta_l Year_{il} + v_{it} \quad (6)$$

where ER excess earnings, AGrade is a binary variable for firms with a CCBE² grade of A or better (=1); vs. firms with B or C grades (=0) Industry is the firms's industry, Year is the calendar year of the observation, and v_{it} is a random error term.

Regression estimates are shown in Table 5. In general, an A level grade company generated returns that are 11% higher than those of a company with a B or C grade. As in the estimation

¹⁰ Heteroscedasticity for the dependent variable is tested using the Breusch–Pagan approach; The test results (shown here) do not support an adjustment for heteroscedasticity.

Breusch-Pagan test for Heteroscedasticity (Dependent variable: Spread)					
Test on all CC(BE) ² grades			Test on A level / Non A level CC(BE) ² grades		
DF	Chi-Square	Pr>Chisq	DF	Chi-Square	Pr>Chisq
106	65.6	0.9993	152	82.79	1

of (5), the industry and calendar year factors are not significant. However, the Director grade factors are significant. In model (6) the coefficient for AGrade has a t-statistic of 9.17.

To further illustrate the impact of Board of Director quality on performance, following Millstein and MacAvoy (1998), we construct a stylized company that is based in the industry with near-average performance. For this sample this is represented by the Transportation industry. The objective is to determine the differential performance exhibited by a firm having “AAA+” level vs. a “C” level CCBE² grade for its Board of Directors. Our stylized company is constructed to have a capitalization equal to that of the average of all firms in this industry. The comparative performance during this period is equals to the difference in the “fitted” spread between an “AAA+” CCBE² vs. that fitted for a “C” grade; these computations are shown in the first three rows in Table 6.

[Please insert Table 6 about here]

The difference in dollar value for investors generated by an “AAA+” company over a “C” is obtained by multiplying this percentage difference by the invested capital. In this case, the differential amount is CAD \$1.704 billion. In Table 7 we also present an analogous scenario but in this case, we differentiate between a stylized “A” grade firm with its “C” grade counterpart CCBE². In this case, the total difference in dollar value over the five year period is CAD \$2.037 billion.

As a further robustness check, we also tested our panel data set for group (fixed) effects.

The fixed effect model examines group differences in intercepts, assuming the same slopes and constant variance across groups. For example, in our sample, the existence of fixed effects would suggest that the spread estimation is significantly different among companies (groups). Here the hypothesis for fixed effects is that all coefficients for intercepts are the same, which suggests there is no fixed effect. The test result is shown in table 9. The null hypothesis is rejected; therefore, the spread estimation is significantly affected by the difference between companies. Since each company has a different $CC(BE)^2$ score, we can say that the quality of the Board of Directors has a significant influence on corporate performance.

CONCLUSION

This provides new evidence on the effects of improved alignment of boards' interests with shareholder interests on firm performance. The hypothesis is tested by examining the relationship between the economic value added of firms, reflected by the spread between operating earnings in excess of the cost of capital (ER) and firm grades based on the $CC(BE)^2$ Index of Shareholder Confidence for Canadian firms from 2002–2006. High shareholder confidence index values are generally associated with higher ER, although the relationship is not monotonic for higher graded boards. Corporations that received an “AAA+” or “A” $CC(BE)^2$ corporate governance grade performed significantly better in generating earnings in the test period than other corporations in the sample. In general, corporations which received A, AA, AAA or AAA+ grades performed significantly better than those received B or C grades. estimation error; in addition, the existence of fixed effect of the panel data suggested

that companies with different level of board effectiveness (CC(BE)² score) have significant differences in performance.

Our study did not attempt to prove the causation for the correlation between governance and performance. Factors other than board performance such as business cycle, market concentration and demand volatility could also affect corporate performance. Nevertheless, our results are consistent with the hypothesis that expectations of better alignment of board interests with shareholder interests and the concomitant reduction in agency costs are associated with improved operating performance of these firms.

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TABLE 1 DISTRIBUTION OF THE SAMPLE COMPANIES BY INDUSTRY AND YEAR

GICS Code	Industry Group	Year					Total
		2002	2003	2004	2005	2006	
1010	Energy	23	25	25	24	21	118
1510	Materials	42	46	45	46	39	218
2010	Capital Goods	9	9	9	8	6	41
2020	Commercial Services & Supplies	3	3	3	3	3	15
2030	Transportation	4	4	4	3	3	18
2510	Automobiles & Components	4	4	5	5	5	23
2520	Consumer Durables & Apparel	3	3	3	2	2	13
2530	Consumer Services	1	1	1	1		4
2540	Media	9	10	10	10	10	49
2550	Retailing	4	4	5	5	4	22
3010	Food & Staples Retailing	9	9	9	9	4	40
3020	Food, Beverage & Tobacco	7	7	6	5	5	30
3510	Health Care Equipment & Services		1		1	1	3
3520	Pharmaceuticals, Biotechnology & Life Sciences	10	11	11	11	11	54
4510	Software & Services	3	4	4	2	2	15
4520	Technology Hardware & Equipment	2	2	4	4	3	15
4530	Semiconductors & Semiconductor Equipment	3	3	3	3	3	15
5010	Telecomm service	6	7	7	6	5	31
Total		142	153	154	148	127	724

**Table 2: CORPORATE VALUE-ADDED PERFORMANCE* ACROSS
CC(BE)² SCORES**

<i>2002 – 2006, Weighted by Assets</i>						
<i>Grade</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>Geometric Mean 2002-2006</i>
<i>Percentage Annual Rates of Return</i>						
CC(BE) ²						
A	2.73%	3.24%	3.54%	4.29%	3.91%	19.01%
AA	0.08%	-2.25%	-2.48%	-3.61%	-2.92%	-10.73%
AAA	0.65%	0.45%	1.15%	-2.16%	-2.84%	-2.78%
AAA+	0.94%	2.38%	2.92%	2.63%	3.49%	12.96%
B	-4.30%	-3.54%	-4.18%	-4.26%	-4.05%	-18.75%
C	-0.48%	-2.59%	-2.86%	-3.32%	-3.64%	-12.27%

* Measured by Differential Spread. As described in text, differential spread is calculated by subtracting company excess earning rate of return, weighted by company assets, from industry average excess earnings.

**Figure 1: CORPORATE VALUE-ADDED PERFORMANCE* ACROSS
DIFFERENT CC(BE)² SCORES**

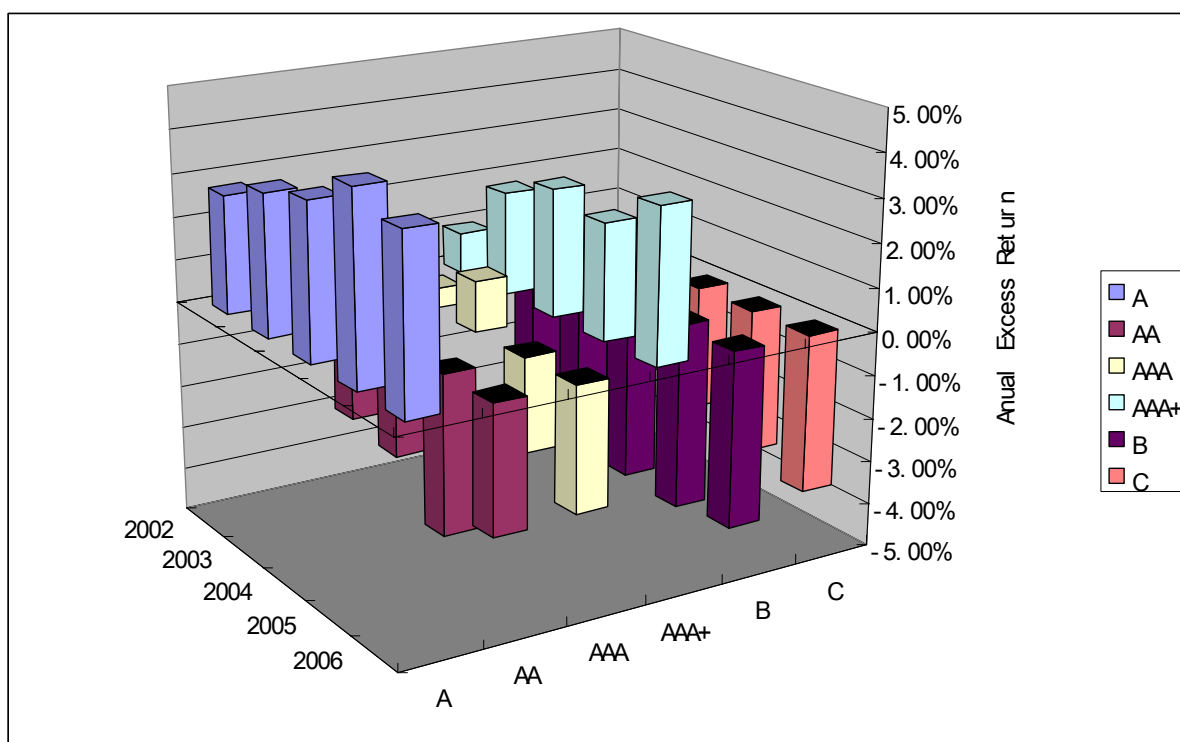


Table 3: Differential corporate value-added performance* between firms with A or better vs. B or C CC(BE)² scores.

<i>2002 – 2006, Weighted by Assets</i>						
<i>Grade</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>Geometric Mean 2002-2006</i>
<i>Percentage Annual Rates of Return</i>						
<i>CC(BE)²</i>						
A or above	2.04%	2.34%	2.65%	2.79%	2.76%	13.24%
B or C	-2.60%	-3.16%	-3.68%	-4.23%	-3.91%	-16.39%

* Measured by Differential Spread. As described in text, differential spread is calculated by subtracting company excess earning rate of return, weighted by company assets, from industry average excess earnings.

Table 4. OLS Regression results of the relationship between the firm's Excess Returns and Board Quality, based on its CCBE² grade The model estimated is:

$ER_{it} = \alpha_0 + \sum \beta_j Grade_{ij} + \sum \gamma_k Industry_{ik} + \delta_l Year_{il} + \varepsilon_{it}$, where ER excess earnings, Grade is the firm's CCBE² grade, Industry is the firms's industry, Year is the calendar year of the observation, and ε_{it} is a random error term.

Independent Variable	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	0.005	0.023	0.22	0.825
Energy	-0.014	0.020	-0.70	0.486
Materials	-0.050	0.018	-2.86	0.004
Capital Goods	-0.027	0.029	-0.94	0.350
Commercial Services & Supplies	-0.017	0.045	-0.37	0.710
Transportation	-0.038	0.041	-0.93	0.352
Automobiles & Components	-0.011	0.037	-0.29	0.769
Consumer Durables & Apparel	0.007	0.048	0.14	0.891
Consumer Services	-0.055	0.087	-0.63	0.528
Media	-0.016	0.027	-0.59	0.557
Retailing	-0.014	0.038	-0.37	0.714
Food & Staples Retailing	-0.002	0.030	-0.08	0.935
Food, Beverage & Tobacco	0.013	0.033	0.39	0.700
Health Care Equipment & Services	-0.017	0.097	-0.17	0.862
Pharmaceuticals, Biotechnology & Life Sciences	-0.334	0.026	-12.71	<.0001
Software & Services	-0.009	0.045	-0.20	0.843
Technology Hardware & Equipment	-0.036	0.045	-0.80	0.422
Semiconductors & Semiconductor Equipment	-0.047	0.045	-1.04	0.298
A	0.109	0.019	5.63	<.0001
AA	0.069	0.032	2.14	0.033
AAA	0.083	0.029	2.89	0.004
AAA+	0.070	0.026	2.73	0.006
B	-0.017	0.019	-0.93	0.352
2002	-0.010	0.018	-0.54	0.588
2003	0.004	0.018	0.21	0.835
2004	-0.003	0.018	-0.18	0.859
2005	-0.008	0.018	-0.46	0.648
R ² (adj.)(%)	24.91			
F Value	11.92	Pr>F	<.0001	
Number of Observations Used	857			

Notes: Sample size=724. All parameter estimates are percentage.

Base Industry: Telecomm service

Base Grade: C

Base Year: 2006

Table 5: OLS Regression results of the relationship between the firm’s Excess Returns and Board Quality, based on its CCBE² grade The model estimated is:

$ER_{it} = \alpha_0 + \sum \beta_j AGrade_{ij} + \sum \gamma_k Industry_{ik} + \delta_l Year_{il} + v_{it}$, where ER excess earnings, AGrade is a binary variable for firms with a CCBE² grade of A or better (=1); vs. firms with B or C grades (=0) Industry is the firms’s industry, Year is the calendar year of the observation, and v_{it} is a random error term.

Variables	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	-0.010	0.019	-0.55	0.582
Energy	-0.010	0.020	-0.50	0.614
Materials	-0.047	0.017	-2.77	0.006
Capital Goods	-0.031	0.029	-1.08	0.283
Commercial Services & Supplies	-0.007	0.044	-0.15	0.877
Transportation	-0.038	0.041	-0.94	0.346
Automobiles & Components	-0.007	0.037	-0.18	0.857
Consumer Durables & Apparel	0.009	0.047	0.20	0.843
Consumer Services	-0.079	0.083	-0.95	0.344
Media	-0.011	0.027	-0.40	0.691
Retailing	-0.013	0.037	-0.36	0.722
Food & Staples Retailing	0.002	0.029	0.06	0.949
Food, Beverage & Tobacco	0.024	0.033	0.74	0.459
Health Care Equipment & Services	-0.001	0.096	-0.01	0.988
Pharmaceuticals, Biotechnology & Life Sciences	-0.333	0.026	-12.80	<.0001
Software & Services	-0.021	0.044	-0.47	0.640
Technology Hardware & Equipment	-0.030	0.045	-0.67	0.506
Semiconductors & Semiconductor Equipment	-0.044	0.044	-1.00	0.320
A level	0.109	0.012	9.17	<.0001
2002	-0.011	0.018	-0.58	0.564
2003	0.003	0.018	0.19	0.847
2004	-0.003	0.018	-0.18	0.858
2005	-0.008	0.018	-0.45	0.651
R ² (adj.)(%)	24.81			
F Value	13.81	Pr>F	<.0001	
Number of Observations Used	857			

Notes: Sample size=724. All parameter estimates are percentage.

Base Industry: Telecomm service

Base Grade: C

Base Year: 2006

Table 6

Differential performance associated for a stylized average firm with a “AAA+” level vs. a “C” level CCBE² grade for its Board of Directors. The stylized company is constructed to have a capitalization equal to that of the mean of all firms in the average performing industry. The comparative performance during this period is equals to the difference in the “fitted” spread between an “AAA+” CCBE2 grade vs. that of a “C” grade; these computations are shown in the first three rows of this table The difference in dollar value for investors generated by an “AAA+” company over a “C” is obtained by multiplying this percentage difference by the invested. Returns profit are in \$MM.

	02	03	04	05	06	Total
Spread AAA+ Stylized Firm	0.94%	2.38%	2.92%	2.63%	3.49%	12.36%
Spread Stylized Firm	-0.48%	-2.59%	-2.86%	-3.32%	-3.64%	-12.89%
Difference	1.41%	4.97%	5.78%	5.96%	7.13%	25.25%
Avg Capital for that firm	5,079	5,201	5,601	7,666	8,326	6,375
Excess Return "AAA+" Firm	48	124	164	202	290	827
Excess Return "C" Firm	-24	-135	-160	-255	-303	-877
Difference in Investor Return	72	258	324	457	594	1,704

Table 7

Differential performance associated for a stylized average firm with a “A” level vs. a “C” level CCBE² grade for its Board of Directors. The stylized company is constructed to have a capitalization equal to that of the mean of all firms in the average performing industry. The comparative performance during this period is equals to the difference in the “fitted” spread between an “A” CCBE2 grade vs. that of a “C” grade; these computations are shown in the first three rows of this table The difference in dollar value for investors generated by an “AAA+” company over a “C” is obtained by multiplying this percentage difference by the invested. Returns profit are in \$MM.

Table 7

**COMPARE GAINS FOR INVESTORS IN THE BETTER VERSUS WORSE GOVERNED STYLIZED COMPANY
(A VS C)
(SPREAD IN PERCENTAGES; CAPITAL AND RETURNS PROFIT IN \$MM)**

	02	03	04	05	06	Total
Spread A stylized Firm	2.73%	3.24%	3.54%	4.29%	3.91%	17.72%
C Stylized Firm	-0.48%	-2.59%	-2.86%	-3.32%	-3.64%	-12.89%
Difference	3.21%	5.83%	6.40%	7.61%	7.56%	30.61%
Avg Capital for that firm	5,079	5,201	5,601	7,666	8,326	6,375
Excess Return "A" Firm	139	169	198	329	326	1,160
Excess Return "C" Firm	-24	-135	-160	-255	-303	-877
Difference in Investor Return	163	303	358	584	629	2,037

Table 8

F Test for No Fixed Effects

Test on all CC(BE) ² grades				Test on A level / Non A level CC(BE) ² grades			
Num DF	Den DF	F Value	Pr > F	Num DF	Den DF	F Value	Pr > F
186	663	9.35	<0.0001	186	663	9.46	<0.0001

Appendix 1

Clarkson Centre Board Confidence Index Construction

According to the Terms and Criteria Schedule of CC(BE)²,¹¹ boards are evaluated according to a) Individual Potential b) Group Potential c) Past Practices

“Each perspective is described by several specific items and a base score is assigned to each of them to indicate the perfect scenario. A deduction is made from the base score of certain items if the fact related to it is considered to have a negative effect on board performance according to the CC(BE)² standard. The highest total score for a company is 100, which indicates that no deduction is made on any aspect of board performance.

1. Individual Potential:

In order for shareholders’ interests to be fully represented by the Board of Directors, individual Directors must be able to act independently from the interests of management, and independently from the other Directors. Stock ownership indicates that a director is aligned to other shareholders and motivated to improve the company’s performance. Individual Potential is comprised of these two factors: Director Independence, and Director Stock Ownership.

1.1. Director Independence

1.1.1. Independence

Director Independence measures the independence of individual directors from each other, as well as from company management.

Relationships with management increase the potential risk that the director will act in the interests of executives before those of the shareholder. If any of the following apply to a director she/he is considered related to management:

- Employee of the company (currently or within three years).
- Executive of any affiliated company
- Director or director’s firm provides legal, auditing, or consulting services to the company (within the last 3 years).
- Kinship to CEO or Chair (if Chair holds >10% of company’s shares).
- Any other significant relationship deemed material by CC(BE)² that does not fall under the above categories.

At least two-thirds of the board must be independent from management, or else a deduction is made. The deduction increases as the proportion of related directors increases.

1.1.2. Interlocks

It is also important that relationships between directors be kept under control. If the same two directors sit on more than one board together, there is a perceived risk that decisions are being made in the interests of another company, known as a director interlock. A deduction is made if there is more than one director interlock present on a Board.

1.1.3. Excessive Board Memberships

¹¹ See: <http://www.rotman.utoronto.ca/userfiles/ccbe//2003glossary.pdf>

In order to perform effectively, a Director must not have too many obligations beyond her/his duties on the Board. A Company receives a deduction for every Director that is a member of more than five S&P/TSX Boards.

1.2. Stock Ownership

A director, however independent and experienced, needs to be motivated to act in the best interest of the shareholders. Motivation is measured as a function of a director's stock ownership in the company.

The calculation is based on the average value of stock owned by the third of the board with the fewest shares, compared to the value of the directors' annual retainer. Annual retainer figures include the value of any annual deferred share unit grants, which are valued using the company's year-end share price if a grant date is not given. Directors with less than three years' tenure on the Board are not included in this calculation.

$$\text{STOCK OWNERSHIP MULTIPLE} = \frac{\$(\text{AVERAGE SHARE OWNERSHIP OF BOTTOM THIRD OF DIRECTORS})}{\$(\text{ANNUAL RETAINER})}$$

A deduction is made if the multiple is less than four; the graduated deduction increases as the multiple decreases.

2. Group Potential:

Group Potential represents the potential for the board as a whole to best represent the interests of shareholders, without compromising the Individual Potential of the directors. The factors determining Group Potential are Board Meeting Structure, and the implementation of Board Evaluation Processes.

2.1. Structure

A company's score in this category is based on the characteristics of its board meeting structure. The structure of a board and its meetings can either encourage or impede the Individual Potential of its directors, as well as affecting the board's output. Structural measurements include:

1) The separation of CEO and Chair positions

If the CEO and Chair positions are not separated, the perceived potential for the Board to operate independently from the influence of management is decreased. A deduction is made if the positions are not fully separated. A smaller deduction is given to companies with no appointed an Independent Lead Director to lead board meetings; or to companies that have split the CEO and Chair positions, but the Chair is related.

2) Independence of Audit and Compensation Committee members

Full-independence of a company's committees is necessary in order to ensure that executive compensation and company accounting are handled without conflict of interest between Management and shareholders.

In order to avoid deductions here, every member of the Audit and Compensation Committees must be fully independent. This means that if any director considered dependent in the Director Independence section sits

on either of these committees, the company receives a deduction.

NOTE: EXECUTIVES OF THE PARENT COMPANY ARE CONSIDERED UNRELATED ON THE COMPENSATION COMMITTEE.

If a Compensation Committee interlock exists between executives of two or more companies, the involved directors are considered related with respect to all interlocked Compensation Committees. This is to avoid situations where executives from different companies are determining each other's salaries.

There are additional restrictions placed on committee membership: deductions are also made if any Related-Independent Directors sit on the Audit or Compensation Committees. The criteria for Related-Independence include:

- Non-Management major shareholder (>30% votes) of company of interest.
- Kinship to non-management major shareholder of company of interest.

If related directors sit on both the Audit and Compensation Committees, separate deductions are made for each respective committee.

3) The ratio of voting rights to share ownership between share classes.

Many companies have several classes of shares, and often the different classes are not allowed equal voting rights. An imbalance of voting rights often means that influence toward Board decisions is taken away from most shareholders.

EXAMPLE:

Class	Votes per Share	Shares Outstanding
Class A Voting	1	10,000
Class B Non-Voting	0	5,000,000

In this case, all of the company's voting rights associated with a small minority of the outstanding shares. Often, these shares are held by company executives, thus not allowing any voting power to the majority of shareholders.

Deductions in this area are graduated; as the disproportion between shares and voting rights increases, so does the deduction made. No deduction is made for companies with multiple share classes if every class is allowed the same number of votes per share.

2.2. Systems (Evaluations)

In order to receive a perfect score in this category, a company must implement regular and formal evaluation processes for both the board as a whole, and each of its individual directors. Scoring is based on disclosure of details regarding the evaluation processes. In other words, if evaluations are mentioned, but no details are given, a deduction is still made.

3. Past Practices:

The past practices of a board are assessed by evaluating the results of their decisions.

Scoring is based on practices that investor surveys generally regard as being opposed to the best interests of shareholders, including:

- Excessive option grants, and/or dilution

Dilution occurs when options granted to executives and directors make up a significant proportion of the outstanding shares, thus diluting returns that would otherwise go to shareholders. A deduction is made if options comprise greater than 10% of a company's outstanding shares. A deduction is also made if options granted to the CEO comprise greater than 5% of a company's outstanding shares. Both of the above are thresholds set by the TSX.

- Option re-pricing

When a company's share performance has suffered, the cost of exercising stock options can be greater than the cost of purchasing stock at market value. In such a case, a company may decide to lower the exercise price in order to align it with the market value of the stock. Option re-pricing is perceived as relieving directors of their responsibility for the company's performance. A deduction is made if a company has re-priced their options within the last three years.

- CEO compensation significantly UP while share price significantly DOWN

Determination of CEO compensation is a responsibility of the Board of Directors. In order to best represent the interests of the company's shareholders, the compensation of the CEO should be associated with the company's performance. A deduction is made here if a CEO's total compensation increases by more than 25% following a year during which the company's share price decreased by more than 25%. There is a cooling-off period of 3 years before this deduction is removed from a company's score.

- Director Pensions

Some boards offer pension plans to their directors, which can be seen as creating an unnecessary tie between the directors and the corporation. Director pensions increase the likelihood that a conflict of interest will compromise the directors' responsibilities to shareholders.

- Outstanding loans to directors or executives

Although most companies have discontinued the granting of loans to their directors and executives, many still have outstanding loans on the books, and some still have yet to discontinue granting loans. Loans to employees can be seen as an inappropriate use of shareholder money.

- Evergreen option plans

Many companies are now introducing evergreen option plans, where the maximum number of options approved for issue is a percentage of outstanding shares, instead of a specific number. Generally, shareholder approval must be sought in order to replenish the option plan once a specific number of options have been issued. Evergreen plans allow companies to continue granting options in any amount up to a certain percentage dilution. This takes authority away from shareholders, while increasing the possibility of higher dilution.”