

Demystifying the Illusion of the Positive Effects of Ownership Concentration on Corporate Performance

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Abstract

Evidence supporting the relationship between ownership structure and corporate performance has been rather contradictory. In this research, we investigate the effects of ownership structure on business performance on a sample of 600 listed Canadian firms. We used a three-phase analysis of variance in which each phase used a different definition of ownership concentration: i) the overall concentration of the five largest shareholders (CONC); ii) the holdings of the largest shareholder (BLC1); and iii) inside shareholders as either managers or directors (BLCI). For each phase, we used cluster analysis and three other concentration cutoff levels (an even-split into thirds, extreme quartiles, and the Morck, Shleifer and Vishny (1988) cutoff) to verify if there is an optimal level of concentration cutoff that may impact the performance.

Our results indicate a high level of ownership concentration in Canadian corporations. The Berle-Means widely held corporation is far from universal. Besides, while state control of traded firms is infrequent, family control is common. However, our findings indicate only a weak association between performance measures and ownership concentration levels, except for the return on investment, which shows some improvement with a high level of ownership. Our results confirm those of Demsetz and Lehn (1985). Overall, no evidence is found to support the efficient monitoring hypothesis, since performance cannot be improved by blockholders who seem not only to be entrenched but may benefit from perquisites and on-the-job consumption. This might indicate that large shareholders expropriate minority absentee owners.

Key words: Ownership Structure, Performance Measures, Management Misconduct.

1. Introduction

The notion that different levels in the separation of ownership and control in corporations and its effect on the performance of the firm has been debated since the 1930s, when Berle and Means (1932) first proposed that this separation had an impact on the level of reported income. In the 1970s, Jensen and Meckling (1976) formulated their rationale for Agency Theory and fueled the debate over ownership structure and performance (Claessens et al., 2000; Holderness et al., 1999; La Porta et al., 1999; Faccio et al., 2000).

The growing body of literature that has since been developed has led to no distinct conclusions one way or another on the impact of ownership structure and firm performance. However, the prevailing thought is that the separation of ownership and control should have an impact on firm performance level as determined by accounting measures. Managers have the ability, with proprietary information asymmetry, to influence the direction, accounting policy choices, and reported performance of an organization.

Greater levels of dispersion in ownership (management controlled or MC firms) allow managers to pursue their own goals and agendas of self-gain or managerial utility maximization that may not be in shareholders' best interests (Gadhoun, 1999). This creates a conflict between the firm's performance level and its ownership structure (Baumol, 1959; Williamson, 1964). This conflict is hypothesized to be directly related to the level of management ownership in the firm (the degree of separation between firm ownership and control and degree of difference in objectives (Short, 1994)). Furthermore, the difference in ownership structure predicts that owner controlled (OC) firms are

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more likely to be risk-oriented and yield higher performance measures than firms that are MC, since managers may seek to engage in activities that reduce the firm's risk. This in turn reduces their own compensation risk but adversely affects shareholders' wealth (Jensen and Meckling, 1976).

Shareholders also have the ability to diversify perceived firm-specific risk by holding a diversified portfolio. However, shareholders, especially in MC, may not be aware of management's underlying actions, for they are typically a heterogeneous group with relatively divergent interests.

Jensen and Meckling (1976) show that firm value increases as economic incentives between shareholders and management become more aligned through managerial equity ownership. Similarly, the information asymmetry and applicable agency costs that exist in MC firms can be reduced by control measures so as to limit the ability of managers to follow their own agendas and negatively influence firm performance.

The remainder of the paper is organized as follows: Section 2 gives a brief review of the theoretical discussions around the effects of ownership concentration on performance. Section 3 presents research objectives, working hypothesis, and measurement issues. Section 4 discusses univariate analysis, and Section 5 presents the basic empirical results. Finally, section 6 presents the conclusions of the study.

2. Previous Research

While control has been defined in many ways, all definitions hinge on the ability to effectively determine the decision making process within a firm (Fama and Jensen, 1983; Leech and Leahy, 1991). It should be noted that the decision making process differs from the decision control of a firm which leads to the monitoring of performance within the firm as related to agency cost. The literature includes studies both for and against the notion that firm ownership structure has an impact on firm performance.

Short (1994) argues that management controlled firms are predicted to be more risk-averse and should yield lower-risk and variability of performance measures than owner-controlled firms. This leads to the assumption that managers, with their own agendas, compensation, bonuses, returns on insider information, and other perks or ego gratification, will manage the firm in a manner which maximizes their own utilities (Morris, 1964; Williamson, 1964). Agrawal and Mandelker (1987) found that for OC firms with a high level of leverage, management will invest in high variance projects to maximize the value of equity. For MC firms, investment was found to be in variance-reducing projects. This is because a high performance level in one year affects the firm's ability to sustain growth in subsequent years. This could cause management to accept opportunities that may be beneficial to shareholders.

Salamon and Smith (1979) found that MC firms tended to misrepresent reported (accounting) performance relative to OC firms. For instance, if a firm was not going to meet targets in a specific year, they would take a "big bath" to make sure they met targets in future years. Similarly, a manager faced a ceiling bonus might decide to defer new projects until later, when he or she would be compensated for his or her efforts.

Smith (1990) argues that where management buyouts have occurred, operating returns increased significantly in the year before, during, and after the buyout, as measured by operating cash flows (before interest and taxes) per employee and per dollar of operating assets. These increases were not found to be the result of layoffs or reduction in expenditures.

Alternatively, others have argued that, like Adam Smith's "invisible hand", firms and management are constrained in their actions to ensure that managers act in the best interests of the shareholders. Alignment of goals through management ownership, as explained by the "convergence-of-interest" hypothesis (Jensen and Meckling, 1976), will reduce the level of management shirking (Lewellen, 1969; Benston, 1985). This will tend to increase the agency costs borne by management, thus forcing management to reduce non-value-maximizing actions.

However, market mechanisms, such as the labour market and threats of takeover or bankruptcy, will cause management to act in the best interest of shareholders. Fama (1980) argues that competition in labour markets will limit managerial discretion, as will the presence of outside directors on the board. Different authors argue that if managers of an MC divert a significant amount

of the firm's resources to themselves, the firm's market value will be lower than its potential market value, thus making it a takeover target. Raviv (1985) suggests using contracts that tie CEO's compensation to shareholders' wealth, such as performance-based bonuses. Stock options are not as effective as those that can be offered through the market mechanism.

Short (1994), argues that the control exerted by debt holders limits management's actions. It could also be argued that the presence of debt holders and debt covenants leads to management actions which influence behaviour.

Table 1 summarizes the results of previous research in chronological order in three panels: Panel A – positive relationship; Panel B – no relationship; Panel C – negative relationship between ownership structure and performance measures. Note that some studies have been listed in more than one panel, where certain measures have had a positive relationship and others have had a negative one. Also note that there does not appear to be any congruence in the performance measures or outcomes in the various studies where different accounting measures were used; the same measures have been found to have a positive, neutral, or negative relationship with ownership structure among different studies.

Table 1

The Effects of Ownership and Control on Firm Performance
Summary of Empirical Findings

Panel A: Significant Positive Relationship		
Performance Measured	Author (year)	Data (sample, period, country)
Quarterly growth in the share price (after eliminating the cyclical fluctuations)	Grant and Kirchmaier (2004)	1993-2002 Top 100 public firms in Italy
Return on equity Operating efficiency (the ratio of real sales to the number of employees)	Earle, Kucsera and Telegdy (2004)	1996-2001 All Hungarian listed firms
Tobin's Q Accounting rate of return	Welch (2003)	114 Australian listed firms (using OLS methodology)
Trading profit margin Rate of return on shareholders' capital Rate of growth of total sales Rate of growth of net assets Tobin's Q	Leech and Leahy (1991)	1981-85 470 U.K. listed firms
Rate of return on equity	McConnell and Servaes (1990)	1976 and 1986 1173 and 1093 U.S. firms
Shareholders total return SD of profits COD of profits % growth in sales Capitalization ratio Payout ratio	Levin and Levin (1982)	1967-76 200 largest non-financial U.S. firms (significant difference for return to shareholders, risk and growth)
Risk-adjusted economic profit margin (CAPM) on sales After-tax return on shareholder equity Growth of total assets	Bothwell (1980)	1960-67 (150 large U.S. industrial companies for top 500 (high entry barriers)
Variance of return on equity (high concentration industries) Rate of return on equity	Thonet and Poensgren (1979)	1961-70 52-92 quoted German manufacturing firms (pooled yearly)
Rate of return on equity and long- term debt Price-cost margin (profit/turnover)	Steer and Cable (1978)	1967-71 82 of top 250 U.K. firms
Average market rate of return (including dividend return and stock price appreciation)	Holl (1977)	1962-72 343 out of top 500 U.S. firms
Stock return appreciation	Stano (1976)	1963-72, 354 large U.S. firms
Average market rate of return Payout ratio	McEachern (1975)	1963-72. 48 large U.S. industrials in 3 industries

Table 1 (continuous)

Performance Measured	Author (year)	Data (sample, period, country)
Risk Growth of sales	Boudreaux (1973)	1952-63 72 of 500 largest U.S. industrial firms
Return on equity	Palmer (1973)	1961-69 500 largest U.S. firms
Average rate of return on net worth Liquidity	Elliot (1972)	1964-67 88 firms from SandP's compustat data
Profit before tax/net Assets (profit rate) Growth in net assets	Radice (1971)	1957-67 86 large U.K. firms in three industries 1980 371 U.S. firms from Fortune 500 ·ownership 0.5% = positive ·ownership 5.25% - negative ownership > 25% - positive
Tobin's Q Net income/net worth Sales/total assets Net income/total assets Net income/sales	Morck et al. (1988) Monsen et al. (1988)	1952-63 500 largest U.S. industrial firms
Panel B: No Significant Relationship		
Performance Measured	Author (year)	Data (period and sample)
Tobin's Q Accounting rate of return	Welch (2003)	114 Australian listed firms (accounting for the endogeneity of the ownership structure)
Tobin's Q Accounting profit rate	Demsetz and Villalonga (2001)	(accounting for the endogeneity of the ownership structure)
Earnings/price ratio	Zeckhauser and Pound (1990)	1988-89 286 U.S. firms drawn from 22 industries, 11 industries classified as being open information structure industries and 11 as being closed, based on ratio of RandD to sales (proxy for asset specificity) - no significant difference for firms and closed information structure industry
Stock market return Accounting profit rate Market value	Murali and Welsh (1989)	1977-81 43 closely held and 83 widely held industry matched U.S. firms
Accounting rate of return Tobin's Q	Holderness and Sheehan (1988)	1979-84 101 majority held and 101 majority held and 101 diffusely held U.S. firms, matched by industry and size
Accounting rate of return (average annual net income/book value of shareholders equity)	Demsetz and Lehn (1985)	1976-80 511 U.S. firms 103 of 200 largest French companies
Net cash flow/book value of equity and reserves Net income/total assets	Jacquemin and de Ghellinck (1980) Round (1976)	1962-64 289 large Australian firms
Pre-tax profit/net worth Growth rate of net assets Variance and skewness of profitability	Holl (1975)	1948-60 183 quoted U.K. firms
Dividend payout ratio After tax profits/net worth Stockholder rate of return Dividend payout ratio	Sorenson (1974)	1948-66 30 OC and 30 MC firms from 11 industries

Table 1 (continuous)

Panel C: Statistically Significant Negative Relationship Between OC and Performance Measurement		
Performance Measured	Author (year)	Data (period and sample)
Quarterly growth in the share price (after eliminating the cyclical fluctuations)	Grant and Kirchmaier (2004)	1993-2002 Top 100 public firms in Germany and Spain
Valuation Ratio	Leech and Leahy (1991)	1981-85 470 U.K. listed firms 1988-89 286 U.K. firms drawn from 22 industries, 11 industries classified as being open information structure industries and 11 as being closed, based on ratio of RandD to sales (proxy for asset specificity) - ratio significantly lower for firms with large shareholders in open information industries
Return on equity Market rate of return Market value/book value	Thonet and Poensgen (1979)	1961-70 52-92 German manufacturing firms (pooled yearly)
Net income/net worth Net sales/no. of employee Retained earnings/net income Debt/total assets	Ware (1975)	1960-70 74 large mature firms in U.S. food and beverage industry
Profit/equity	Larner (1970)	1956-62 187 of largest 500 U.S. non-financial firms
Long-term debt/capitalization	Monsen et al. (1968)	1952-63 500 largest U.S. industrial firms

3. Empirical Investigation

3.1. Research Objectives

The objectives of this research are to extend prior research and to assess the relation (the congruence) of the level of ownership structure on business performance in the Canadian environment. Our methodology consists of analyzing 600 Canadian firms randomly chosen from a database (stock-guide) in a two-stage selection process for the years 1989-1991. Five indicators of performance in four different cutoff measures are used to assess the implications of ownership structure on performance indicators.

While some exceptions were made by a few recent studies (e.g. Earle et al. (2004) in Hungary, Yammeesri and Lodh (2004) in Thailand, Akimova and Schwodiauer (2004) in Ukraine, De Cos et al. (2004) in Spain, Welch (2003) in Austria, Chang (2003) in Korea), the conflicting results analyzed in previous research have focused solely on the U.S. and U.K. markets. The high level of concentration of ownership in the Canadian environment and its difference from the U.S. environment have prompted our study. The question of what level of ownership concentration is required for owners to monitor management underlies our intention to conduct this study and investigate the efficacy of monitoring on performance. Indeed, when shareholders are also managers, one suspects that they will be more entrenched and prefer, for tax reasons, to have cash flows as on the job consumption rather than as dividends. This is another question to be investigated.

3.2. Research Methodology

Previous research studies have always had problems in conducting research in areas such as the determination of ownership structure on performance measures. Part of this problem lies with the definition of organizational control (what level of control is deemed significant to influence the decision-making process), and with the difference between control and ownership.

In addition, the units of measurement that can be used to study performance vary from researcher to researcher and range from Tobin's Q to ROA. Other problems include researchers that try to study the impact of decision-making using information provided from the very individuals (management) that they are trying to study. There is also the belief that management is exercising influence on the data in a way that biases the outcome and creates additional barriers to analysis. Other problems lie with the variability of industries, the timing of announcements or other factors surrounding the release of financial information, firm size, the level of industry growth, other firm or industry-specific factors of influence as modeled by Porter's competition analysis, and finally, the financial structure of the firm and the corresponding debtholders relationship.

To overcome the problems identified in previous research, we use the following design steps to test the impact of ownership on performance: We have analyzed the data in terms of traditional approaches to concentration measures including dividing groups into thirds using Morck, Shleifer and Vishny (1988) cutoffs as well as quartiled data into two primary groups with concentration at either extreme (with those over 75% and under 25% concentration, and using the results of cluster analysis cutoffs at 56.5% that we conducted).

3.3. Hypothesis

Our objective in this research is to test three specific hypotheses, based on our assumptions about the Canadian market.

H1: There is no relationship between ownership concentration and performance measures studied.

The Canadian environment corresponds to a high level of ownership in the hands of a single shareholder. It is our intention to study whether:

H2: The major shareholder is a good monitor or not and whether he or she succeeds in disciplining managers in avoiding waste.

Our third hypothesis undertaken in our study is to determine whether:

H3: Shareholders who are at the same time managers or directors are not entrenched.

3.4. Data, Measurement and Method

To test these hypotheses, both linear and non-linear (Pearson and Spearman) measures of association were used to relate concentration and different performance features. Note that a statistical correlation does not usually signify a causality. The statistical results in this study may or may not corroborate a particular hypothesis, but do not constitute definitive proof. For a more rigorous demonstration of certain results, see Gadhoun (1995). Because of the difficulty in determining stock concentration thresholds required to limit or neutralize entrenchment, we treat effective control as a continuous function of stock concentration, rather than separating the measure into a nominal variable. Ownership concentration (COC) is measured by the sum of the voting rights held by the five largest shareholders.

$$CONC = \sum_{i=1}^5 \alpha_i \quad (1)$$

with α_i = the voting rights of the shareholder (i). Other measures of the concentration, such as the Herfindahl measure and the entropy or Gini indices, are either less useful or impossible to use because of the empirical data employed.

No electronic databases on Canadian firm ownership exist. Therefore, data on the identity and size of the five largest shareholder holdings was collected manually. Six hundred Canadian firms were randomly selected from the *Stock-Guide* databank, and the following were eliminated: 21 foreign firms, 18 firms which had priced only preferential shares, and 5 mutual funds. Of the 556 remaining firms, information on the identity and percentage of voting rights held by the five largest shareholders was obtained from 3 sources: 1) *The Financial Post* (FP) "Survey of Industrials" and "Survey of Mines and Energy Resources" for 1989, 1990, and 1991; 2) *Stock-Guide* (where information is collected from proxy circulars), under the heading "Corporate Profile," for 1989, 1990, and 1991; 3) *Intercorporate Ownership in Canada* (LP) from Statistics Canada, 1989 and 1991.

The information was processed in two stages. In the first stage, an observation was kept if the three information sources concurred with both the principal shareholder's identity and the size of each block of shares that he or she owned or controlled. Cases where the sources had contradictory information on identity or block size were treated in a second stage. The objective at this second stage was to reconcile disagreements among information sources through additional research. We reversed the process while checking to see if the shareholder had in fact some holdings in the firm. The three sources of verification were LP, FP, and the proper sources of the "contradictory" block holder.

After the second stage, the number of observations meeting our sample criteria was 338 for the year 1989, 365 for 1990, and 348 for 1991. Rejection corresponds respectively to 40%, 35% and 37%, with a mean of 37%.

4. Descriptive Statistics

4.1. The Stability of Ownership Concentration

The second empirical investigation was motivated by the following question: Is ownership structure itself a strategic variable? If so, any index of ownership structure changes when external or internal stimuli occur. Otherwise, this index would be stable. The following model was developed for this study.

$$CONC_{it} = \mu + \gamma_i + \psi_t + INT + \epsilon_{it}, \quad (2)$$

where $CONC_{it}$ is a measure of concentration of the firm (i), in time (t). The variable γ_i is the effect of the firm on the mean concentration of the sample. The variable ψ_t is the time effect on the mean concentration of the sample. The variable $INT = (\gamma_i)(\psi_t)$, tests the effect of interaction. ϵ_{it} = an error term following a normal distribution, $N(0, \sigma^2)$, and μ = the global mean of concentration. To test the model, information on the "public float" (equivalent to the ownership concentration) was collected from the *Toronto Stock Exchange Review*. This data covered 512 firms over 59 months (from January, 1987 to December, 1991).

Table 2

Two-factor Analysis of Variance on the Stability of Concentration

	γ^A	ψ^B	E^C
Degrees of freedom	382	58	12270
Variance	8969.56	38.76	29.45
F-value	304.53	1.32	---
Level of significance	0.0001	0.0543	---

- (a) γ = intra-period variability
- (b) ψ = inter-period variability
- (c) E = variability not explained by the model

Since intra-period variability is significant with regard to inter-period variability, ownership can be considered stable (with an error of 5.43%). Time, as a factor, accounts for only 0.4% of the total variability observed: $S^2_{TIME} / (S^2_{FIRM} + S^2_{TIME} + S^2_E)$, while the firm effect accounts for 99.2%.

4.2. Cluster Analysis

Many empirical studies used dummy variables to classify firms by control type. Following more recent studies, our use of continuous measures is more appropriate. The question that arises is: what is the cutoff level of ownership that creates "sufficient incentive" for shareholders to engage in monitoring? Empirical research, mostly American, suggests 5% as a valid indicator for owners to be active in actual firm management (Rhoades and Rechuer, 1997; Tosi and Mejia, 1994). In fact, American firms are required to report all individuals or institutions holding 5% or more of their stock.

Canadian data on ownership is quite different and suggests higher cutoff levels. In order to test the sensitivity of the results to the somewhat arbitrary choice of cutoff level, "cluster analysis" for the variables CONC and BLC1 was performed, where BLC1 corresponds to the holdings of the largest shareholder. We used the cubic clustering criterion (CCC) based on the assumption that a uniform distribution on a hyper rectangle will be divided into clusters shaped roughly like hyper cubes (Wright and O'Brien, 1988).

Table 3

Results of Cluster Analysis for Concentration of Ownership (CONC) and the Holdings of the Largest Shareholder (BLC1)

Cluster	CONC					BLC1				
	N	Mean	Std. Dev.	Min.	Max.	N	Mean	Std. Dev.	Min.	Max.
1	145	25.410	12.837	0	42.267	222	38.079	12.578	10.400	56.533
2	332	66.190	14.821	43.090	100.000	128	71.872	10.896	57.100	100.000

After dividing the firms into two classes using our arbitrary cutoff and cluster-suggested cutoff levels of ownership, we tested our hypotheses using both linear and non linear (Pearson and Spearman) measures of association and univariate analysis of variance (ANOVA).

4.3. Measures of Ownership Concentration

In previous studies, concentration of ownership was measured using various cutoffs ranging from 5% to 25%. We used four different measures of ownership and categorized different types of owners in our analysis. The measures used are the following:

Overall measures of concentration: CONC – the largest five shareholders as determined by voting rights; BLC1 to BLC4 – the largest, second, third and fourth-largest shareholders as determined by voting rights.

Measures of breakdown of the largest shareholders as internal or external to the firm: BLCI-shareholder is either a manager or director of the firm (internal); BLCE-shareholder is neither manager nor director of the firm (external).

Measures of breakdown of firm's external shareholders: INDV-shareholder is an individual person; INSF-shareholder is a financial institution; AUTI-other type of organization; GOUV-shareholder is a government institution; GROU-shareholder is a conglomerate organization; FAML-shareholder is a family-owned firm.

4.4. Measures of Performance

In the analysis, we used five performance measures to analyze the effect of ownership concentrations. Although many possible performance measures are available and have been used in previous studies, we chose the following measures to study firm performance: return on investment (ROI), market/book ratio or price over book value (PB), price/earnings ratio (PE), profit margin on sales or net income over sales ratio (NIR), and return on equity (ROE).

By using such measures, we do not limit our analysis to accounting measures (unlike Earle et al., 2004), nor to the market-based ones (unlike Grant and Kirchmaier, 2004).

5. Empirical Results

5.1. Descriptive Statistics of Ownership Concentration

The analysis was broken down into three sets of empirical results. The first step is an overall general analysis of the level of ownership concentration by the major shareholders within studied firms. Results, summarized in Table 4, show that the ownership of many firms in Canada is concentrated in the hands of the top five shareholders (CONC of 53.05%, Table 1). Of these top five shareholders, the major shareholder alone holds the most votes on average as shown by BLC1 of 42.22%,

which is also shown in Panel B (see BLC1). Ownership within organizations tends to be dominated by insiders (either management or board of directors) with a BLCI averaging 39.09%, compared with 14.01% for outside controlling interests. In Panel B, this is especially prevalent at the 50th and 75th percentiles, where ownership by insiders translates to 43.8% and 62.04% respectively.

Table 4

Descriptive Statistics

Panel A: Descriptive Statistics of Ownership Variables				
Variable	N	Mean	Median	Standard Deviation
CONC	255	53.05	55.50	24.420
BLC1	255	42.22	43.10	23.630
BLC2	255	8.087	2.120	10.098
BLC3	255	1.839	0.000	4.695
BLC4	255	0.530	0.000	2.823
BLCI	254	39.09	43.80	30.300
BLCE	254	14.01	0.000	22.650
INDV	254	0.220	0.000	2.134
INSF	254	1.919	0.000	6.518
AUTI	254	9.940	0.000	20.770
GOUV	254	1.440	0.000	6.246
GROP	254	0.158	0.000	0.365
FAML	334	0.102	0.000	0.303
Panel B: Distribution of Ownership Variables				
Percentiles				
Variable	15	25	50	75
CONC	24.760	37.700	55.500	69.300
BLC1	17.238	23.900	43.100	59.000
BLC2	0.000	0.000	2.120	14.900
BLC3	0.000	0.000	0.000	0.000
BLC4	0.000	0.000	0.000	0.000
NGLC	1.000	1.00	1.000	2.000
BLCI	0.000	3.150	43.800	62.038
BLCE	0.000	0.000	0.000	20.200
INDV	0.000	0.000	0.000	0.000
INSF	0.000	0.000	0.000	0.000
AUTI	0.000	0.000	0.000	2.075
GOUV	0.000	0.000	0.000	0.000
GROP	---	---	---	---
FAML	---	---	---	---
Panel C: Descriptive Statistics of Performance Measures				
Variable	N	Mean	Median	Standard Deviation
ROI	330	-2.720	3.150	30.720
PB	329	2.704	1.346	9.678
PE	334	22.180	12.270	29.130
NIR	334	-17.930	1.140	177.200
ROE	334	-3.450	3.080	36.060

Table 4 shows that on average, companies are owned by other companies (9.94%), financial institutions (1.92%), and government institutions (1.44%). Panel B of Table 4 further corroborates this, with 2.075% ownership at the 75 percentile by other organizations (AUTI) relative to all other types of ownership studied.

Pearson and Spearman Correlations Matrix

Variable	ONC	BLC1	BLC2	BLC3	BLC4	NBLC	BLCI	BLCE	INDV	INSF	AUTI	GOUV	GROP	FAML	ROI	PB	PE	NIR	ROE
CONC	1.000*** (1.000)***	0.807*** (0.781***)	0.329*** (0.224***)	0.220*** (0.224***)	0.185** (0.224***)	0.342*** (0.241***)	0.677*** (0.649***)	0.178** (-0.091)	0.060 (-0.074)	0.116 (-0.101)	0.160* (-0.097)	-0.068 (-0.085)	0.133* (-0.117)	0.175** (0.175**)	-0.088 (-0.125*)	-0.001 (-0.203***)	-0.015 (-0.108)	0.053 (-0.040)	-0.054 (-0.111)
BLC1	255	1.000*** (1.000)***	-0.197** (-0.277***)	-0.249** (-0.265***)	-0.186** (-0.185**)	-0.185** (-0.221***)	0.576*** (-0.534***)	0.100 (0.013)	-0.014 (0.007)	-0.067 (-0.117)	0.143* (0.063)	-0.099 (-0.111)	0.143* (0.153*)	0.170** (0.162**)	-0.069 (-0.066)	-0.025 (-0.168**)	0.039 (0.002)	0.067 (-0.008)	-0.023 (-0.056)
BLC2	255	255	1.000*** (1.000)***	0.396*** (0.516***)	0.180** (0.294***)	0.625*** (0.839***)	0.148* (0.137*)	0.158* (0.190**)	0.130* (0.121)	0.320** (0.294***)	0.058 (0.104)	0.060 (0.110)	0.044 (0.012)	0.001 (-0.010)	-0.191** (-0.065)	0.020 (0.007)	-0.063 (-0.126*)	-0.064 (-0.026)	-0.180** (-0.074)
BLC3	255	255	255	1.000*** (1.000)***	0.626*** (0.609***)	0.724*** (0.661***)	0.107 (0.120)	0.098 (0.114)	0.123* (0.054)	0.185** (0.212***)	0.027 (0.103)	0.059 (0.111)	-0.052 (-0.037)	0.018 (0.050)	0.034 (-0.032)	0.015 (0.047)	-0.112 (-0.107)	0.045 (-0.011)	-0.009 (-0.024)
BLC4	255	255	255	255	1.000*** (1.000)***	0.626*** (0.437***)	0.164** (0.200**)	-0.020 (-0.026)	-0.023 (-0.029)	0.109 (0.128*)	-0.033 (-0.023)	-0.052 (-0.074)	-0.082 (-0.033)	0.086 (0.081)	0.135* (0.046)	0.020 (0.001)	-0.056 (0.024)	0.030 (0.046)	0.124* (0.060)
NBLC	255	255	255	255	255	1.000*** (1.000)***	0.232*** (0.183**)	0.062 (0.106)	0.089	0.207** (0.279***)	-0.004 (0.094)	0.041 (0.092)	-0.049 (-0.027)	0.025 (0.011)	0.076 (0.013)	0.047 (0.082)	-0.090 (-0.088)	0.028 (0.032)	0.004 (-0.024)
BLCI	254	254	254	254	254	254	1.000*** (1.000)***	-0.607*** (-0.607***)	0.000 (0.008)	-0.119 (-0.124*)	-0.535*** (-0.523**)	-0.200*** (-0.165**)	0.114 (0.117)	0.236** (0.238**)	-0.085 (-0.033)	-0.033 (-0.058)	-0.028 (-0.117)	0.023 (0.010)	0.001 (0.013)
BLCE	254	254	254	254	254	254	254	1.000*** (1.000)***	0.065 (0.104)	0.284*** (-0.371***)	0.889*** (0.804***)	0.194** (0.287***)	-0.010 (-0.027)	-0.128* (-0.132*)	0.018 (-0.077)	0.043 (-0.089)	0.021 (0.061)	0.026 (-0.077)	-0.060 (-0.140*)
INDV	254	254	254	254	254	254	254	254	1.000*** (1.000)***	-0.030 (0.036)	-0.013 (0.005)	-0.024 (-0.030)	-0.045 (-0.047)	0.041 (0.064)	-0.112 (-0.077)	0.123 (0.017)	-0.063 (-0.095)	-0.006 (-0.091)	-0.272** (-0.080)
INSF	254	254	254	254	254	254	254	254	254	1.000*** (1.000)***	0.011 (0.042)	-0.021 (-0.035)	-0.043 (-0.035)	-0.116 (-0.130*)	-0.014 (-0.052)	-0.034 (-0.094)	-0.020 (-0.037)	0.077 (-0.046)	-0.125* (-0.085)
AUTI	254	254	254	254	254	254	254	254	254	254	1.000*** (1.000)***	-0.075 (-0.062)	0.029 (0.024)	-0.086 (-0.076)	0.021 (-0.062)	-0.052 (-0.051)	0.020 (0.058)	-0.005 (-0.079)	0.005 (-0.086)
GOUV	254	254	254	254	254	254	254	254	254	254	254	1.000*** (1.000)***	-0.037 (0.005)	-0.039 (-0.063)	-0.024 (-0.088)	-0.030 (0.039)	0.024 (0.014)	0.026 (0.001)	-0.001 (-0.067)
GROP	254	254	254	254	254	254	254	254	254	254	254	254	254	1.000*** (1.000)***	-0.170** (-0.170**)	-0.030 (-0.006)	-0.049 (-0.003)	0.020 (0.029)	0.080 (0.050)
FAML	255	255	255	255	255	255	254	254	254	254	254	254	254	1.000*** (1.000)***	0.029 (0.025)	-0.230 (-0.025)	0.007 (-0.068)	0.038 (-0.025)	-0.009 (-0.003)
ROI	253	253	253	253	253	253	252	252	252	252	252	252	252	253	1.000*** (1.000)***	-0.058 (-0.242***)	0.110 (0.323**)	0.203** (0.782**)	0.676** (0.897**)
PB	252	252	252	252	252	252	251	251	251	251	251	251	251	252	252	1.000*** (1.000)***	-0.010 (0.226**)	0.002 (0.114)	-0.064 (0.176**)
PE	255	255	255	255	255	255	254	254	254	254	254	254	254	255	253	252	1.000*** (1.000)***	0.081 (0.391**)	0.123* (0.315**)
NIR	255	255	255	255	255	255	254	254	254	254	254	254	254	255	253	252	255	1.000*** (1.000)***	0.071 (0.806**)
ROE	255	255	255	255	255	255	254	254	254	254	254	254	254	255	253	252	255	255	1.000*** (1.000)***

- a. For descriptions of variables, see Table 1.
 - b. Spearman correlations are in parentheses.
 - c. The values to the left of the diagonal correspond to the number of the observations used in calculating the correlation. The values vary depending upon the intersections of paired variables.
- Note: ***p<0.001; **p<0.01; *p<0.05 two tail test.

5.2. Descriptive Statistics of Performance Measurement

In Table 4, Panel C, we find the main statistics for the five measures of performance which show a mean of -2.072% for the ROI with a standard deviation of 30.72%. The price-to-book value of the organizations in the study averaged 2.704%, while the price/earnings ratio traded at 22.18 times earnings despite a net income to sales ratio of -17.93% with a high volatility of 177.20 and negative ROE of 3.45%. These results confirm our belief that investors (major shareholders who are managers) may be more interested in other factors such as cash flows than in corporate performance.

5.3. Correlation Analysis

Linear and non-linear correlation analysis (Pearson and Spearman) found results similar to that of the descriptive analysis. These results are shown in Table 5 and show a high correlation of 0.807 between the top five shareholders and BLC1, meaning a high concentration of ownership by one individual or one organization in our sample. In the top five shareholders there is also a high positive and significant correlation of 0.677 between inside management or board of directors and ownership and between BLC1 and BLCI (0.576). Financial institutions (INSF) tended to correlate more strongly with lower holdings for BLC2 and BLC3 (0.320/0.294 and 0.185/0.212 for Pearson and Spearman correlations respectively). The financial institutions also showed a strong correlation with external shareholders (0.284/-0.371) using Pearson and Spearman correlations.

Government institutions showed a positive correlation with external shareholders (BLCE) (0.194/0.287) and a negative correlation with internal shareholders (BLCI) (-0.2000/-0.165) using the Pearson and Spearman correlations respectively.

Where families were involved, they tended to show a more positive correlation with the largest shareholder (BLC1) (0.170/0.162), than with internal shareholders (BLCI) (0.236/0.238), and a negative correlation with external shareholder (-0.128/-0.132) using the Pearson and Spearman correlations respectively.

A slightly less significant finding showed a correlation between the second largest shareholders (BLC2) and external ownership (BLCE) (0.158 and 0.190) for the Pearson and Spearman correlations respectively.

We also found little support for correlation between the block ownership of corporations in Canada and the five performance measures. Overall concentration of the top five shareholders (CONC) correlated negatively with both ROI (-0.125) and price/book value (-0.203) in the Spearman correlation.

BLC1 also correlated negatively with the price over book value (-0.168) using the Spearman correlation, while BLC2 correlated negatively with ROI (-0.191) and ROE (-0.180) using the Pearson correlation and -0.126 with price/earnings ratio using the Spearman correlation. There was a slightly positive correlation of BLC4 with both ROI (0.135) and ROE (0.124) using the Pearson correlation.

There was also a negative correlation of ROE with external shareholders BLCE (-0.140) using the Spearman correlation, and between ROE and the ownership by individuals INDV (-0.272) and ROE and financial institutions INSF (-0.125), using the Pearson correlation.

5.4. ANOVA Analysis

ANOVA analysis was used to test the relationship between the concentration of ownership and performance (see Tables 6, 7, and 8). The ANOVA analysis was performed in three phases. In each, we used four different concentration cutoff levels to see whether there is an optimal level of concentration cutoff. Our overall analysis revealed little significant relationship between the performance measures and the ownership concentration levels in the study.

The study was subdivided into three parts as shown in Tables 6, 7, and 8. Table 6 includes the overall concentration of the five largest shareholders (CONC). Table 7 includes the main shareholder (BLC1), and Table 8 shows the results of BLCI (inside shareholders as either managers or directors).

Each table is broken down into four panels sub-divided on the basis of four concentration cutoffs. The first of these panels uses an even split into thirds taking 33.33% as the cutoff point for ownership concentration. Panel B uses the cutoffs proposed by the Morck, Shleifer and Vishny study (1988) which used cutoffs of (<5%, 5-25% and > 25% ownership concentrations). Panel C uses extreme quartiles as the cutoffs (> 75% or < 25% ownership), while Panel D uses our cluster analysis results and proposes cutoffs of <56.6% and > 56.5% ownership.

Table 6

ANOVA Results of Ownership Concentration and Performance Measures

Var. (conc)	N	Mean	Std.	F	P-Value
Panel A: Three Equal Groups					
ROI					
G1 (0-33)	84	-0.67	17.95	2.04	0.1315
G2 (34-66)	84	1.44	21.78		
G3 (67-100)	85	-6.76	38.02		
PB					
G1 (0-33)	83	3.43	14.29	0.17	0.847
G2 (34-66)	84	3.02	11.93		
G3 (67-100)	85	2.44	4.64		
PE				0.8	
G1 (0-33)	85	23.84	25.70		0.4519
G2 (34-66)	85	19.14	20.41		
G3 (67-100)	85	23.86	35.92		
NIR					
G1 (0-33)	85	-27.62	154.03	0.25	0.7759
G2 (34-66)	85	-28.63	296.74		
G3 (67-100)	85	-9.04	101.64		
ROE					
G1 (0-33)	85	-1.63	24.73	0.59	0.5547
G2 (34-66)	85	-3.29	25.60		
G3 (67-100)	85	-6.02	29.15		
Panel B: Morck, Shleifer and Vishny (1988) Cutoffs					
ROI					
G1 (<5)	14	-2.41	16.40	0.2	0.8147
G2 (5-25)	25	1.21	13.74		
G3 (>25)	214	-2.51	29.31		
PB					
G1 (<5)	14	1.66	1.05	0.22	0.8
G2 (5-25)	25	1.94	1.08		
G3 (>25)	213	3.11	11.93		
PE					
G1 (<5)	14	18.43	21.30	0.29	0.7467
G2 (5-25)	25	25.47	31.91		
G3 (>25)	216	22.18	28.05		
NIR					
G1 (<5)	14	-75.57	277.76	0.81	0.4455
G2 (5-25)	25	-47.34	192.76		
G3 (>25)	216	-15.36	196.88		
ROE					
G1 (<5)	14	-5.03	23.21	0.04	0.9598
G2 (5-25)	25	-4.25	26.66		
G3 (>25)	216	-3.27	26.79		
Panel C: Quartile Extremes of Ownership Concentration					
ROI					
G1 (>75)	44	-8.34	48.02	1.03	0.3057
G2 (<25)	39	0.08	14.64		
PB					
G1 (>75)	44	2.17	4.17	0.48	0.6271
G2 (<25)	39	1.84	1.06		
PE					
G1 (>75)	44	25.23	38.70	0.3	0.7628
G2 (<25)	39	22.94	28.46		
NIR					
G1 (>75)	44	-6.94	131.54	1.27	0.2072
G2 (<25)	39	-57.47	223.72		
ROE					
G1 (>75)	44	-5.65	31.56	-0.18	0.8595
G2 (<25)	39	-4.53	25.16		

Table 6 (continuous)

Panel D: Cluster Analysis Cutoffs					
Var. (conc)	N	Mean	Std.	F	P-Value
ROI					
G1 (<56,5)	119	-5.15	35.30	-1.64	0.0509
G2 (<56,5)	134	0.53	17.84		
PB					
G1 (<56,5)	119	3.06	10.65	0.2	0.8412
G2 (<56,5)	133	2.78	11.32		
PE					
G1 (<56,5)	119	22.01	31.95	-0.15	0.8794
G2 (<56,5)	136	22.55	24.28		
NIR					
G1 (<56,5)	119	-4.98	99.35	1.25	0.1061
G2 (<56,5)	136	-36.52	258.91		
ROE					
G1 (<56,5)	119	-6.87	30.46	-1.93	0.0272
G2 (<56,5)	136	-0.48	22.17		

In the overall concentration analysis (CONC), there was no significant relationship between ownership and the performance measures using cutoffs in Panel A, B or C. The only significant relationships occurred in Panel D using cluster analysis cutoffs, where the p-values of ROI and ROE were 0.0509 and 0.0272 respectively.

At the second stage of our analysis, ANOVA analysis was used to analyze the relationship between the largest voting rights of the shareholder (BLC1) and the performance measures. There were no significant findings using the cutoffs proposed in panels A, B, or C. Again, the only significant results were derived using the cluster analysis cutoff of 56.5% concentration levels with ROI (p-value 0.0813) and price/earnings ratio (p-value 0.0973).

Table 7

ANOVA Results of the Principal Shareholder Ownership and Performance Measures

Var. (conc)	N	Mean	Std.	F	P-Value
Panel A: Three Equal Groups					
ROI					
G1 (0-33)	85	0.46	23.55	0.97	0.3796
G2 (34-66)	83	-1.53	25.41		
G3 (67-100)	85	-5.34	32.80		
PB					
G1 (0-33)	85	3.64	14.28	0.4	0.6683
G2 (34-66)	82	2.11	3.50		
G3 (67-100)	85	2.95	11.98		
PE					
G1 (0-33)	85	19.55	23.05	0.71	0.4938
G2 (34-66)	85	24.62	27.11		
G3 (67-100)	85	22.72	33.19		
NIR					
G1 (0-33)	85	-29.37	155.94	1.04	0.3534
G2 (34-66)	85	-39.32	306.79		
G3 (67-100)	85	3.29	53.94		
ROE					
G1 (0-33)	85	-1.86	24.92	0.23	0.7931
G2 (34-66)	85	-4.34	32.48		
G3 (67-100)	85	-4.18	21.07		
Panel B: Morck, Shleifer and Vishny (1988) Cutoffs					
ROI					
G1 (<5)	14	-2.41	16.40	0.3561	0.7007
G2 (5-25)	59	0.50	26.60		
G3 (>25)	180	-2.99	28.59		

Table 7 (continuous)

Var. (conc)	N	Mean	Std.	F	P-Value
PB					
G1 (<5)	14	1.66	1.05	0.8420	0.4321
G2 (5-25)	59	4.50	17.11		
G3 (>25)	179	2.49	8.58		
PE					
G1 (<5)	14	18.43	21.30	0.4707	0.6251
G2 (5-25)	59	19.94	24.05		
G3 (>25)	182	23.36	29.71		
NIR					
G1 (<5)	14	-75.57	277.76	0.5607	0.5715
G2 (5-25)	59	-24.56	131.04		
G3 (>25)	182	-16.77	213.28		
ROE					
G1 (<5)	14	-5.03	23.21	1.2447	0.2898
G2 (5-25)	59	1.31	21.01		
G3 (>25)	182	-4.89	28.21		
Panel C: Quartile Extremes of Ownership Concentration					
ROI					
G1 (>75)	20	-4.94	23.21	-0.8562	0.3941
G2 (<25)	77	0.27	24.49		
PB					
G1 (>75)	20	1.92	3.83	-0.5692	0.5706
G2 (<25)	77	3.85	15.00		
PE					
G1 (>75)	20	21.79	37.09	0.4141	0.6797
G2 (<25)	77	19.04	22.97		
NIR					
G1 (>75)	20	2.88	16.36	0.9776	0.3307
G2 (<25)	77	-33.04	163.47		
ROE					
G1 (>75)	20	-3.91	18.79	-0.2209	0.8256
G2 (<25)	77	-2.54	25.97		
Panel D: Cluster Analysis Cutoffs					
ROI					
G1 (<56,5)	67	-6.18	35.57	-1.4	0.0813
G2 (<56,5)	186	-0.69	23.98		
PB					
G1 (<56,5)	67	3.35	13.48	0.38	0.7022
G2 (<56,5)	185	2.75	9.97		
PE					
G1 (<56,5)	67	26.12	36.56	1.3	0.0973
G2 (<56,5)	188	20.94	24.30		
NIR					
G1 (<56,5)	67	-0.9	24.94	0.99	0.3229
G2 (<56,5)	188	-29.25	233.51		
ROE					
G1 (<56,5)	67	-5.32	22.00	-0.67	0.504
G2 (<56,5)	188	-2.8	27.96		

The third level of analysis was to analyze the results between inside ownership and performance levels. Panel A results for BLCI (insider shareholder ownership by either a manager or a director of the firm) highlight significant findings for ROI (0.019), with concentration ownership grouped in thirds. Panels B and C show no significant relationships between ownership and performance measures, while Panel D indicates a significant finding using cluster analysis cutoffs for ROI (p-value 0.0381).

Table 8

ANOVA Results of the Insider Shareholder Ownership and Performance Measures

Var. (conc)	N	Mean	Std.	F	P-Value
Panel A: Three Equal Groups					
ROI					
G1 (0-33)	85	-2.13	15.92	4.02	0.019*
G2 (34-66)	84	3.81	20.19		
G3 (67-100)	84	-8.11	39.62		
PB				0.56	0.57
G1 (0-33)	85	2.9	11.86		
G2 (34-66)	83	3.82	14.61		
G3 (67-100)	84	2.01	3.18		
PE				0.01	0.9921
G1 (0-33)	85	22.43	22.19		
G2 (34-66)	85	21.99	24.73		
G3 (67-100)	85	22.49	35.73		
NIR				0.93	0.3959
G1 (0-33)	85	-29.41	188.72		
G2 (34-66)	85	1.99	60.74		
G3 (67-100)	85	-37.98	286.62		
ROE				1.15	0.3162
G1 (0-33)	85	-4.92	18.62		
G2 (34-66)	85	0.09	29.03		
G3 (67-100)	85	-5.54	30.25		
Panel B: Morck, Shleifer and Vishny (1988) Cutoffs					
ROI				0.1467	0.8637
G1 (<5)	67	-0.48	13.99		
G2 (5-25)	28	-2.68	19.62		
G3 (>25)	158	-2.60	32.72		
PB				0.0851	0.9185
G1 (<5)	67	3.13	13.34		
G2 (5-25)	29	2.15	1.41		
G3 (>25)	157	2.96	10.88		
PE				0.0955	0.9089
G1 (<5)	66	22.34	21.65		
G2 (5-25)	28	24.57	30.91		
G3 (>25)	159	22.05	30.09		
NIR				0.0464	0.9546
G1 (<5)	66	-25.84	166.04		
G2 (5-25)	28	-28.58	212.40		
G3 (>25)	159	-18.78	214.37		
ROE				0.6485	0.5237
G1 (<5)	66	-1.70	13.88		
G2 (5-25)	28	-8.51	25.79		
G3 (>25)	159	-3.35	30.49		
Panel C: Quartile Extremes of Ownership Concentration					
ROI				1.5048	0.1349
G1 (>75)	31	-10.80	56.82		
G2 (<25)	96	-1.14	15.83		
PB				0.1220	0.9031
G1 (>75)	31	2.58	4.92		
G2 (<25)	96	2.84	11.16		
PE				0.3531	0.7246
G1 (>75)	31	20.56	37.19		
G2 (<25)	96	22.61	24.51		
NIR				-1.0242	0.3077
G1 (>75)	31	6.02	220.84		
G2 (<25)	96	-26.89	178.07		

Table 8 (continuous)

Var. (conc)	N	Mean	Std.	F	P-Value
ROE					
G1 (>75)	31	-6.60	36.32	0.3123	0.7554
G2 (<25)	96	-4.94	21.53		
Panel D: Cluster Analysis Cutoffs					
ROI					
G1 (<56,5)	76	-7.62	41.18	2.0843	0.0381*
G2 (<56,5)	177	0.21	18.61		
PB					
G1 (<56,5)	76	2.09	3.33	0.7840	0.4338
G2 (<56,5)	176	3.27	12.96		
PE					
G1 (<56,5)	76	23.64	37.11	-0.4947	0.6213
G2 (<56,5)	179	21.73	23.28		
NIR					
G1 (<56,5)	76	-7.06	49.70	-0.7615	0.4470
G2 (<56,5)	179	-28.05	237.84		
ROE					
G1 (<56,5)	76	-5.51	31.32	-0.8040	0.4221
G2 (<56,5)	179	-.259	24.21		

The Morck, Shleifer and Vishny (1988) cutoffs showed no significant relationships, nor were there any significant findings using quartile cutoffs (< 25% or greater > 75%) in any of the variables studied.

The study's results also show trends developing as concentration became internalized (greater); as ownership levels increased from 25% to 33% to 56.5%, the general level of significance of certain measures increased compared to lower concentration levels.

6. Conclusion and Recommendations

Our objective in this study was to contribute to the increasing body of empirical knowledge on the effects of ownership concentration on Canadian firm performance. We also used performance and cutoff measures that are different from previous studies. Our analysis shows that although there is little clear indication that ownership concentration affects firm performance (which confirms the results of Demsetz and Lehn, 1985), the most significant finding was slightly in favor of return on investment (ROI) as a measure that is affected by ownership concentration levels.

Our analysis concluded that Canadian company ownership is largely concentrated in the hands of one or a few major shareholders (as shown by voting rights), who tend to be organizations in most cases. These owners tend to be internal to the company, either managing the latter or having a seat on its board of directors.

Further, when major owners exist within a company, they tend to fall outside the traditional groups. Families were found to be primarily major shareholders (BLC1), and these firms were owner-controlled as they correlated highly with being insiders as opposed to outsiders. Financial institutions and individuals tended to hold smaller blocks, often being the second or third largest shareholder. Conglomerates tended to be main shareholders when they owned a significant amount of shares in corporations, but they typically only held shares without representation as directors or key executive officers.

Other findings in this study indicate that the level of concentration that has an effect on performance measure is much higher than that of other studies performed in the U.S. or the U.K. In contrast to those studies, our results indicate that ownership concentration needs to be much higher than the 56.5% cutoff in order to find significant relationships between ownership concentration and performance indicators, a result not shown in previous empirical studies.

Our research also confirms that there is room for further study. Currently, there is little research on the effects of ownership concentration on performance, particularly for Canadian firms. Other problems also need to be addressed in greater depth, such as defining control within an organization, exercising a determinable degree of control over an organization's future, and using

varied performance indicators in research. Finally, additional influences such as the impact of external versus internal boards of directors and debt structures need to be explored in the Canadian context.

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