

**VALUATION, OPERATING PERFORMANCE, EXPENDITURE DECISIONS  
AND MANAGEMENT OWNERSHIP OF LISTED CANADIAN DUAL-CLASS  
FIRMS**

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## **ABSTRACT**

# **VALUATION, OPERATING PERFORMANCE, EXPENDITURE DECISIONS AND MANAGEMENT OWNERSHIP OF LISTED CANADIAN DUAL-CLASS FIRMS**

Lei Fang

Dual-class capital structures, which are characterized by holders of one class of common stock having greater voting rights than holders of another class, are relatively common among Canadian corporations. The cash flow ownership and voting rights ownership of M&D (management and directors) diverge substantially for many Canadian firms with dual-class equity structures, and M&D voting rights ownership generally exceeds cash flow ownership. The relation between firm value and M&D voting ownership is negative and convex. In contrast, the relation between firm value and M&D cash flow ownership is indeterminate, which corresponds with the notion that the primary motive for dual-class equity structures is to ensure voting control. The relation between capital expenditures and M&D voting ownership is negative and convex with increasing M&D voting ownership. The relations between measures of operating performance (such as sales growth, net profit margin and return on equity) or combined R&D and advertising expenditures relative to assets and sales with either M&D cash flow or voting ownership also are indeterminate.

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**1. INTRODUCTION**

Corporate governance refers to how power is divided between a firm's management (broadly defined herein to include its directors) and its shareholders. Corporate governance ranges from management [shareholders] having little [much] power to management [shareholders] having much [little] power. Many studies examine the relationship between corporate governance and corporate performance in order to determine the ideal balance of power between these two groups so as to maximize shareholder wealth.<sup>1</sup>

One of the limitations of this literature is that two separate forces (namely, incentives and control) are measured using the same variable, ownership. In contrast, dual-class companies with their distinct corporate governance structures provide a rich laboratory for exploring the relationship between firm performance, value or decision making and corporate governance. Dual-class governance structures, which are relatively common among Canadian publicly traded corporations, are characterized by holders of one class of common stock having greater voting rights than holders of another class. Since management and other insiders often hold the superior voting class in greater proportions,

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<sup>1</sup> A selective review of these studies is provided below.



the voting rights ownership of management is generally much higher than its cash flow ownership. Furthermore, since the link between cash flow incentives and voting control can be separated for dual-class firms, the separate role of each of these two effects can be examined.

Thus, the primary objective of this thesis is two-fold: first, to investigate the characteristics of Canadian dual-class companies; and second, to examine the relationship between management (including director) ownership of both cash flow and voting rights with the value, operating performance, investment, and R&D+Advertising behaviors of dual-class firms. Based on ownership information collected for each class of common stock, the proportions of the total cash flow and voting rights that are held by management and directors (henceforth M&D) are calculated for Canadian dual-class firms listed on the Toronto Stock Exchange (TSX) over the period 1997-2004.<sup>2</sup>

This thesis makes four contributions to the literature. The first contribution is the observation that the two ownership measures used herein diverge substantially for many Canadian firms with dual-class equity structures, and that M&D voting rights ownership generally exceeds cash flow ownership. The second contribution is the finding that the relation between firm value (as measured by *Tobin's Q*) and M&D voting ownership is negative and convex in that firm value first decreases and then increases with increasing M&D voting ownership. In contrast, the relation between firm value and M&D cash flow

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<sup>2</sup> The beginning date corresponds with the availability of machine readable proxy statements on the web site of the Ontario Securities Commission called SEDAR.

ownership is indeterminate, which corresponds with the notion that the primary motive for dual-class equity structures is to ensure voting control. The third contribution is the finding that the relation between capital expenditures and M&D voting ownership is negative and convex with increasing M&D voting ownership. The fourth contribution is the finding that the relations between measures of operating performance (such as sales growth, net profit margin and return on equity) or combined R&D and advertising expenditures relative to assets and sales with either M&D cash flow or voting ownership are indeterminate.

The remainder of the thesis is organized as follows. Section 2 briefly reviews the literature on Canadian dual-class firms and on the relationship between a firm's governance and its operating performance. The sample, data and their characteristics are discussed in Section 3. Section 4 examines the relationship between the value, operating performance, capital expenditure and R&D+Advertising behaviors of Canadian dual-class firms and their M&D cash flow and voting ownerships. Section 5 concludes the thesis.

## **2. LITERATURE REVIEW**

### **2.1 Basics of Dual-class Shares**

Since the 1930s, academics, regulators and business commentators generally agree that large corporations with publicly traded securities face special problems in designing optimal corporate governance and ownership structures. Companies needing large amounts of equity capital to raise capital from numerous, dispersed shareholders, who for

a variety of reasons (such as lack of industry expertise, geographic dispersion and a large number of other investments) are unable to be actively involved in monitoring the underlying businesses.

As a result, shareholders in these corporations delegate the management of the corporation to the board of directors, which in turn empowers corporate officers to run the daily operations of these firms. To protect the values of their investments, shareholders retain the right to elect the board, and to vote on fundamental changes to the corporation (such as mergers and charter amendments). However, shareholders entrust most of the power over corporate strategy and its implementation to their agents (namely, the board and management). Thus, shareholders need to ensure that these agents are accountable and act in their best interests.

Customarily, all shareholders have equal rights to capture the economic benefits of ownership through dividends and price appreciation, and to exercise control over the corporation. In some cases, corporations issue more than one class of common stock with different voting or cash flow rights attached to each class. Although such arrangements can involve more than two share classes, they are referred to as “dual-class” structures herein as is customary in practice. Shares with different voting rights are primarily created to satisfy initial owners (company founders) and their families who want to retain control with minimal investment but need to access the public markets for equity financing. In most cases, these super-voting shares are either not publicly traded or are traded less frequently than their counterparts with inferior voting rights.

## **2.2 Arguments For and Against Dual-class Shares**

Proponents of dual-class equity structures argue that the practice insulates managers from the short-term orientation of stock market investors. Founders of firms generally have a longer-term performance horizon than investors who often focus on the most recent quarterly earnings. The stock class with the extra voting rights appeals to investors with longer expected holding periods because such stock often cannot be traded or is relatively illiquid. Having these more patient investors as part of the capital base should allow managers to focus more on long- versus short-run operating performance.

Opponents of dual-class equity structures concentrate on the inequities associated with such structures since a select few are allowed to pass a disproportionate amount of the financial risk onto other share classes given their investment. Families and senior managers that hold the superior voting shares can entrench themselves within dual-class firms, regardless of their abilities and performance. Dual-class structures may magnify agency costs by allowing entrenched managements to make bad decisions with few consequences. In a worst-case scenario, a shareholder that controls a company as the result of a dual-class structure can extract significant private benefits in the form of self-dealing transactions, compensation and perks. In such cases, other public shareholders have little ability to vote in a new board or otherwise take action to end the harmful behavior.

In the classical analysis of Jensen and Meckling (1976), managerial equity ownership helps to align the cash flow rights associated with the ownership interests of the manager and minority shareholders. However, managerial equity ownership has implications not

only for incentives but also control since the votes included with equity ownership can create entrenchment. In turn, an entrenched management may be immune to career concerns (Fama, 1980; Holmstrom, 1999), the discipline of the product market (Hart, 1983), monitoring by large shareholders (Shleifer and Vishny, 1986), and value-enhancing takeovers (Jensen and Ruback, 1983; Franks and Mayer, 1990). Given management entrenchment, managers may expropriate wealth from minority shareholders and extract the private benefits of control (Grossman and Hart, 1988). Although in principle incentives can be provided without giving up the control of equity, in practice the vast majority of managerial incentives come from equity ownership (Jensen and Murphy, 1990).

Hollinger International Inc. appears to present a good example of the potentially harmful effects of entrenchment through dual-class shares. Former CEO Conrad Black controlled all of the company's class-B shares, which gave him 30% of the equity and 73% of the voting power. He allegedly ran the company as if he was the sole owner as he allegedly extracted huge management fees, consulting payments, and personal dividends at the expense of the relatively uninformed and completely powerless group of other equity investors. Hollinger's board of directors was allegedly filled with Black's friends who did not forcefully oppose his authority. The other holders of the publicly traded shares of Hollinger had almost no power to make any decisions in terms of executive compensation, mergers and acquisitions, board construction, poison pills, or anything else of significance. The financial and share performance of Hollinger suffered while Black

exercised control over the firm.

The misalignment of cash flow and voting control rights, which is the characteristic of dual-class share structures, distorts incentives and leads controlling shareholders to make decisions that may not be in the best interest of public shareholders. As a result, agency costs increase since shareholders need to expend more effort monitoring the decisions made by controlling shareholders and the boards they elect.

Bebchuk et al (2000) provide various examples of the negative effects of misalignments in cash flow and voting control rights. First, the efficient transfer of control of dual-class firms is less likely since the control decision criterion depends upon the private benefits of control not only to the prospective acquirer but also to the controlling shareholder. Second, project selection becomes biased towards projects that provide greater private benefits to the controlling shareholder. Third, such companies are more likely to evolve into conglomerates than firms without such structures, since single-class firms have stronger governance mechanisms to constrain such behavior. On average, a share of a conglomerate trades at a 10-15% discount relative to the value imputed from single-segment companies in their corresponding industries.

Due to their relatively higher risks and higher agency costs, dual-class firms experience poorer performance than their single-class peers. For example, a 1996 study by Burgundy Asset Management finds that the dual-class firms in their sample of 413 Canadian firms underperformed their single-class counterparts. Similarly, Gompers, Ishii and Metrick (2003) find that the disproportionate voting control for insiders afforded by

dual-class structures correlated positively with poorer corporate performance for a large sample of U.S. firms.

Cronqvist and Nilsson (2003) find that agency costs are 6 to 25% higher at firms with controlling minority structures (CMSs) such as dual-class shares than for those without such structures for a sample of Swedish firms. The authors hypothesize that the associated price discount is due to the lower returns on assets earned by CMS companies.

In summary, dual-class structures supposedly violate the fundamental principle that public investors should have the ability to control the corporation in a fashion that is consistent with their economic interests. Dual-class equity structures may also give rise to a variety of risks that may impair the value of the investments of public shareholders.

### **2.3 Empirical Evidence on the Relation Between Firm Value and Ownership Rights of Management**

Since theoretical arguments identify both positive (incentive) and negative (control) effects of managerial ownership, an active empirical literature has attempted to disentangle the two effects and identify an optimal level of ownership. Morck, Shleifer and Vishny (1988) find that market value is related to insider ownership in a non-monotonic way. For the largest listed firms in 1980, market value increases [decreases] with increasing board ownership over the range of zero to five [five to twenty-five] percent, consistent with agency [entrenchment] theory. This result is confirmed in various other studies. For example, McConnell and Servaes (1990) find a similar non-monotonic relationship between ownership and *Tobin's Q* for a more comprehensive sample of firms,

and Holderness, Kroszner and Sheehan (1999) find a similar pattern for firms for a period from 1935 to 1995. Gompers, Ishii and Metrick (2003) find that corporate governance is strongly correlated with stock returns during the 1990s. Firms with stronger shareholder rights have higher firm values, higher profits, higher sales growths, lower capital expenditures, and fewer corporate acquisitions.

The relationship between insider ownership and firm value is also examined for non-U.S. firms. La Porta, Lopez-de-Silanes, Sheifer and Vishny (2002) examine the relationship between control ownership and firm value for 27 countries, and find that higher cash flow ownership by insiders is associated with increased firm value. Seifert, Gonenc and Wright (2002) find similar results for a much larger sample of firms drawn from the U.S., U.K., Germany and Japan. Pajuste (2005) investigates the fact that an increasing number of firms in continental Europe are unifying their shares into a single class and finds that firms that unify their dual-class shares are more active in issuing new equities, make more acquisitions, and have higher industry growth opportunities. Using a panel of Swedish firms, Cronqvist and Nilsson (2003) find that control of vote ownership is associated with a significant decrease in firm value. Kryzanowski and Zhang (1992) find statistically significant positive abnormal returns for the paired differences between voting and restricted voting shares in Canadian firms when dual-class shares are introduced using pro rata distributions.

Using dual-class shares alleviates a limitation of these studies, which is to use the sole variable, ownership, to measure two separate forces (namely, incentives and control).



Management and other corporate insiders often hold the superior voting class in greater proportion for a typical dual-class company.<sup>3</sup> Since dual-class equity structures break the link between cash flow incentives and voting control, determining the ownership structures of dual-class firms allows one to separate the role of the two effects of incentives and control.

Previous studies of dual-class firms suggest that the separation of voting and cash flow ownership may have significant negative implications for firm valuation. Bebchuk et al (2000) explore the costs of a manager's ability to separate cash flow rights from control rights. They argue that many of the common mechanisms, such as dual-class shares, can lead to large agency costs, and that the agency costs associated with such structures are larger than those existing in firms in which insiders own a majority of the shares. Amoako-Adu and Smith (2001) find that the managers of dual-class IPO firms are perceived generally as not pursuing the best interests of shareholders.

Emerging markets are an important source for these studies because of their larger potential for agency problems. Nevertheless, because of their legal, regulatory, and institutional differences from developed markets, it is difficult to generalize the inferences derived from emerging market studies to the more developed markets. Nevertheless, cash flow and control rights are often separated using multiple stock classes or pyramidal ownership structures in emerging markets. Lins (2003) examines the effect of separating

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<sup>3</sup> The value premium of the superior over the inferior voting shares is used to determine the value of a vote by Levy (1982), Nenova (2000) and Zingales (1995), amongst others.

cash flow and control rights in 18 emerging markets. He finds that firm value is lower when the voting ownership of management is higher than its cash flow ownership. Claessens et al. (2002) find that firm value increases with the cash flow ownership of the largest shareholder but decreases when the voting ownership exceeds cash flow ownership for 1300 firms from eight East Asian countries.

#### **2.4 Dual-class Governance and Ownership Structures of Canadian Firms**

Dual-class capital structures are relatively common among Canadian corporations with securities traded on the Toronto Stock Exchange (TSX). As of April 2005, 96 firms (or 6.57%) of the 1,459 companies listed on the TSX have dual-class share structures. Seven of these dual-class companies have three classes of common stock with different voting rights. Of the 96 dual-class firms, 31 have a class of common stock with no voting rights. While holders of both classes vote for the other dual-class firms, the number of votes per share varies among the classes. For example, subordinate [multiple] voting shares of FirstService Corporation carry one [20] vote[s] per share. As a result, the voting power ratios (i.e., the differences between the votes per share exercised by holders of different classes of stock) range from 1:3 for St. Lawrence Cement Group Inc. to 1:2085 for Onex Corporation. Only the inferior class of shares trade publicly for most of these firms, and all classes trade for a small number of these firms.

### **3. SAMPLE, DATA COLLECTION AND SAMPLE CHARACTERISTICS**

The 'restricted shares list' in the *TSX Monthly Review* is used to identify all the

dual-class companies over the period 1997-2004.<sup>4</sup> The removal of trusts and firms without “true” dual-class equity structures based on their proxy circulars and other firm documents, which are available at [www.sedar.com](http://www.sedar.com), reduces the initial sample set from 973 to 851 firm years. Data by class for outstanding shares, voting rights and number of shares held by members of the board of directors and management are also collected from these *Sedar*-deposited documents, and are used to calculate management cash-flow and voting ownership percentages for the final sample of dual-class firms. Due to differences in coverage for inactive firms by data vendor, the financial statement and market data for the dual-class firms are obtained from *Stockguide*, *Compustat*, *Corporate Retriever*, *Sedar* and *CFMRC*.

Summary data on the characteristics of the publicly traded dual-class firms in 2004 relative to their single-class counterparts (i.e., all publicly-traded, non dual-class companies in the Compustat database) are reported in **table 1**. Based on the p-values for Wilcoxon ranksum tests of the median differences of assets and equity market values, dual class firms are significantly larger than their single-class counterparts. To illustrate, the median total assets are 673.70 and 87.17 million dollars for dual-class and single-class firms, respectively. Similarly, dual-class firms have significantly higher median (0.1157 versus 0.0272) leverage ratios and significantly higher median (0.7320 versus 0.5134) book-to-market ratios than their single-class counterparts. According to the p-values for

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<sup>4</sup> This separate page lists all restricted shares including multiple voting shares, restricted voting shares, subordinate voting shares, limited voting shares and non-voting shares.

t-tests of mean differences for market values, total assets, leverage ratios and book-to-market ratios, dual-class firms only have significantly different (higher) mean market values than single-class firms.

The Global Industry Classification Standard (GICS) is used to classify the samples of single- and dual-class firms into 24 industry groups as of December 2004.<sup>5</sup> **Table 2** presents the numbers of single- and dual-class firms in 24 industry groups. The six industries with the largest numbers of dual-class firms in 2004 in descending order are media, diversified financials, capital goods, materials, energy and consumer durables & apparel. In contrast, the six industries with the largest number of single-class firms in 2004 in descending order are materials, energy, capital goods, software & services, pharmaceutical & biotechnology, and real estate. The high occurrence of dual-class companies in the media industry is as expected for two reasons. First, DeAngelo and DeAngelo (1985) argue that the non-pecuniary private benefits of consumption may be high in media-related firms and hence may lead founders to establish dual-class structures in order to preserve control. Second, dual-class equity structures in the Canadian media industry allow such firms to raise funds in foreign markets while satisfying Canadian ownership rules required by Canadian regulatory authorities.<sup>6</sup>

The ten largest dual-class companies in December 2004 based on market capitalization

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<sup>5</sup> Morgan Stanley Capital International (MSCI) and Standard & Poor's (S&P) are the developers of the GICS classifications.

<sup>6</sup> According to the regulator, Canadian Radio-television and Telecommunications Commission (CRTC), some media corporations cannot be controlled by persons that are not Canadians.

are listed in **table 3**. Not surprisingly, two of the ten largest dual-class companies in our sample are media firms. Nevertheless, the ten largest dual-class firms in terms of market cap belong to eight different industries. This strongly suggests that dual-class capital structures are relatively common among Canadian corporations.

The number of dual-class firms in our sample during each year from 1997 through 2004 is reported in panel A of **table 4**. The numbers reveal the effect of investor (especially institutional) pressures to move from dual- to single-class equity structures. The number of dual-class firms decreases gradually from its high of 128 in 1998 to 94 firms in 2004. The primary driver for this decline has been the pressure of especially institutional investors. Since the corporate scandals at Enron and Hollinger, institutional investors have placed greater emphasis on the corporate governance of the firms in which they invest given that the majority of Canadian and U.S. institutional investors believe that dual-class equity structures disadvantage public shareholders. Also, as reported in panel A of table 4, the most common voting structure is less than 1:10; that is, one in which the superior voting stock has up to ten votes for each share while the inferior voting stock has only one vote per share.<sup>7</sup> This reflects the voting power distortion caused by dual-class equity structures.

Based on the summary statistics for the cash flow and voting M&D ownership ratios presented in panel B of table 4, the M&D of dual-class firms have significantly greater

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<sup>7</sup> The most unfavorable ratio from the perspective of shareholders owning the inferior voting shares is 1:2085.2 for Onex Corp.

average ownership of voting versus cash flow rights. Specifically, the mean [median] voting ratios of 62.5% [64.7%] greatly exceed the corresponding cash flow ratios of 29.2% [23.0%]. However, the range almost covers all of the possibilities for both types of ownership ratios.

More complete views of the voting and cash flow equity ownership structures of these firms emerge from an examination of **table 5**, which provides a cross-tabulation of the various deciles for these two ownership metrics. First, voting rights ownership generally exceeds cash flow ownership since most of the firms lie in the lower off-diagonal (or shaded) cells of the table. Second, the cash flow ratio deciles exceed the voting rights deciles for only 9 of the dual-class firms. These results strongly suggest that the primary motive for dual-class equity structures is to ensure voting control.

#### **4. RELATION OF FIRM VALUE WITH VOTING AND CASH FLOW M&D OWNERSHIP**

Two null hypotheses are now tested. The first null hypothesis  $H_0^1$  is:

$H_0^1$ : All else held equal, firm value first decreases at an increasing rate and then increases at a decreasing rate with increasing M&D ownership of voting rights.

The second null hypothesis  $H_0^2$  is:

$H_0^2$ : All else held equal, firm value first increases at a decreasing rate and then decreases at an increasing rate with increasing M&D ownership of cash flow rights.

In order to examine the non-linear effects of voting and cash flow M&D ownership on performance, both ownership proportion and the square of the ownership proportion are used below. This quadratic specification allows the peak [trough] in the relation between firm performance and voting [cash flow] M&D ownership to be identified from the data rather than being pre-specified.

Our expectation is that we can separately identify and measure the entrenchment effect associated with M&D ownership of voting rights from the incentive effect associated with M&D ownership of cash flow rights. The expected relationship between firm value and M&D voting ownership is negative and convex so that the coefficients on voting ownership and its squared term are expected to be significantly negative and positive, respectively. This is consistent with an entrenchment effect of voting ownership where M&D insiders can pursue strategies that are at the expense of outside shareholders when M&D have more voting control.

Based on the view that ownership of cash flow rights by M&D insiders aligns incentives, our expectation is that the relationship between firm value and M&D cash flow ownership is positive and concave. In other words, the average coefficients on M&D cash flow ownership and its squared value are significantly positive and negative, respectively. As the fraction of M&D cash flow ownership increases, the incentives of M&D become more closely aligned with those of outside shareholders and thus leads to better decisions (from the outside shareholders' perspective) and higher valuations. The positive incentive effects of M&D cash flow ownership, however, decrease at higher levels of cash flow

ownership because of wealth effects that reduce the incentives for primarily CEOs to work hard as the CEOs become wealthier. Alternatively, the increasing lack of diversification on the part of M&D insiders at high levels of ownership may induce senior management to pursue less risky investment strategies than outside investors would prefer.

The regressions used to examine the relationship of firm valuation with control and incentives are of the following form:

$$Q'_i = a + bX_i + cW_i + e_i \quad (1)$$

In (1),  $Q'_i$  is the industry-adjusted Q (Tobin's Q for the firm minus the median industry Q).<sup>8</sup> This valuation measure has been used in corporate-governance studies since the work of Demsetz and Lehn (1985) and Morck, Shleifer, and Vishny (1988). Based on Kaplan and Zingales (1997), Tobin's Q is measured as the market value of assets divided by the book value of assets, where the market value of assets equals the book value of assets plus the market value of common equity less the sum of the book value of common equity and balance sheet deferred taxes. We assume that any nonpublicly traded classes of shares have the same per-share price as the publicly traded shares.

$X_i$  is a vector of ownership variables (managerial voting rights ownership and voting rights ownership squared or managerial cash flow ownership and cash flow ownership squared).

$W_i$  is a vector of firm characteristics, including the log of the book value of assets in constant dollars, free cash flow for the firm in constant dollars, the log of firm age as of

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<sup>8</sup> The median annual Q is calculated for each of the 24 industries based on the four-digit GICS group codes.



December of year  $t$  and three dummy variables for whether the firm is included in the S&P/TSX Composite Index, whether the firm is cross listed, and whether the firm has a coattail provision in case of a takeover bid.<sup>9</sup> The (log of) book value of assets is included as in Shin and Stulz (2000). The free cash flow for the firm is included because some studies use cash flows as a control variable. Firm age is included because previous work argues that younger firms may have higher Tobin's  $Q$  values due to higher future growth opportunities relative to assets in place. The dummy variable to capture S&P inclusion is based on the finding of Morck and Yang (2001) that S&P 500 inclusion has a positive impact on  $Q$ , and that the impact increased during the 1990s. The cross-listing dummy variable is included because King and Segal (2003) find that the relative valuation discount of Canadian firms relative to their U.S. peers is mitigated somewhat if the Canadian firm is cross-listed. The dummy variable for whether or not the dual-class firms have coattail provisions is included because the takeover protection afforded to inferior shareholders from such provisions should have a positive impact on firm valuation.

As in La Porta et al (1998), a corporation is deemed as having a controlling shareholder if the shareholder's (in)direct voting rights in the firm exceed 20 percent. As a result, we form a constrained sample of the dual-class firms by deleting the firms with M&Ds holding voting rights proportions of less than 20 percent. This sample is referred to hereafter as the constrained sample.

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<sup>9</sup> A coattail provision protects the shareholders of inferior shares by giving them the right to exchange inferior shares for superior shares given a change in the control of the firm.

Since the distribution of  $Q'_i$  is very positively skewed (skewness of 6.98) with some outliers and also clustered (kurtosis of 78.58), pooled median regressions are run for the full sample and the constrained sample.<sup>10</sup> Based on **table 6**, the first hypothesis can not be rejected since the estimated relation between firm value and M&D voting ownership is negative and convex. Specifically, the estimated coefficients for M&D voting ownership and its squared term are significantly negative and positive, respectively. This implies that relative firm value first decreases at increasing rate and then increases at decreasing rate with increases in insider voting ownership when the level of insider cash flow ownership is held constant. This is consistent with an entrenchment effect of voting ownership. In other words, M&D insiders can pursue more strategies that are at the expense of outside shareholders when M&D insiders exert more voting control.

Based on the estimated coefficients reported in **table 6**, the second hypothesis is rejected since the estimated relations between firm value and M&D cash flow ownership have coefficients with the correct signs but are not statistically significant.<sup>11</sup>

To better understand the estimated relationships, we now plot the relationships between firm value and each measure of M&D insider control. The total effect on firm value of control (voting + voting<sup>2</sup>) due to changes in the proportional voting ownership of

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<sup>10</sup> The largest condition number for collinearity analyses on the independent variables is 13.62. Belsey, Kuh, and Welsch (1980) suggest that weak dependencies may be starting to affect the regression estimates when the conditioning number is around 10, and that the estimates may have a fair amount of numerical error when the conditioning numbers are larger than 100. In addition, an R-square value is not produced in SAS for median regression, thus we do not report R-square value in the tables of regression results.

<sup>11</sup> Only the estimated coefficient for M&D cash flow ownership is significant at the 0.10 level, and this is only for the constrained sample.

M&D insiders is plotted in **figure 1**. Tobin's Q is reduced by about 34 percent when M&D insider voting ownership increases from zero to 50 percent. The total effect on firm value of incentives (cash flow + cash flow<sup>2</sup>) due to changes in the proportional ownership of cash flows by M&D insiders is plotted in **figure 2**. Tobin's Q decreases by about 46 percent points from the minimum value for M&D cash flow ownership to its maximal effect.

With regard to the control variables, the estimated coefficients of the log of the book value of assets are negative and significant for the full and constrained samples. This implies that the firms with lower book values of assets tend to have higher firm valuations, all else held equal. This result is consistent with the literature that smaller firms have relatively less assets in place and relatively greater growth opportunities. The coefficients for the free cash flow variable are insignificant, which implies that the amount of free cash flow available to the dual-class firm has no significant impact on its value, all else considered. The coefficients for the log of firm age also are insignificant, which implies that firm age has no significant impact on the values of Canadian dual-class firms, all else considered. As expected, the estimated coefficients of the dummy variable 'S&P/TSX' are positive and significant, which implies that firms included in the S&P/TSX index tend to have higher firm valuations, all else considered. The estimated coefficients of the dummy variable 'cross-listed' also are positive and significant, which implies that dual-class firms that trade in the U.S. have higher firm valuations. The estimated coefficients of the dummy variable 'coattail' are positive but insignificant, which implies that coattail

provisions have no significant incremental impact on the valuation of Canadian dual-class firms.

## **5. RELATION BETWEEN OPERATING PERFORMANCE AND M&D VOTING AND CASH FLOW OWNERSHIP**

The relations between operating performance and M&D ownership of voting rights and cash flows are examined in this section of the thesis. To this end, the relations between each of three measures of firm performance (namely, sales growth, net profit margin and return on equity where each is adjusted for the median industry performance) with lagged values of each of the two measures of M&D control (i.e., of voting power and cash flows) and various control variables are examined using median regressions. The independent variables are lagged to reflect the operational and strategic decisions of previous M&D. The lagged industry adjusted Tobin's Q is included to control for differences in the opportunity sets of the studied firms. This ensures that the estimated relationships are not driven by the relationship of the ownership variables with Q.

The results for the three measures of operational performance for the full and constrained samples are summarized in **table 7**. Only two of the performance-ownership relations are significant. Specifically, negative and convex relationships exist between sales growth and cash flow ownership for the full sample, and between net profit margin and voting rights ownership for the constrained sample. Thus, there appears to be little relationship between accrual measures of operating performance and M&D ownership of

either voting or cash flow rights. In contrast, all of the coefficient estimates for the lagged industry-adjusted Tobin's Q are positive and significant, as expected.

## **6. RELATION OF CAPITAL AND R&D+ADVERTISING EXPENDITURES WITH M&D VOTING AND CASH FLOW OWNERSHIP**

In this section, we explore the relationship between capital expenditures and between R&D+Advertising expenditures and M&D voting and cash flow ownership. The dependent variables are the ratio of capital expenditures to assets, the ratio of capital expenditures to sales, the ratio of R&D+Advertising expenditures to assets and the ratio of R&D+Advertising expenditures to sales. As in the previous sections, each dependent variable is adjusted for the median level of performance within each firm's industry. The independent variables include lagged cash flow and voting rights ownership and their squared terms.

Based on the regression results summarized in **table 8**, we find that the relations between capital expenditures and voting rights ownership are negative and convex, as was reported earlier for Tobin's Q. This finding is consistent with the view that voting ownership decreases the willingness of managers to invest for more rapid growth. While the estimated coefficients of cash flow ownership and their squared term carry their expected signs (i.e., positive and negative, respectively), they are not all significant. Thus, this provides little support for the view that the alignment of incentives through higher M&D cash flow ownership has a positive effect on the level of investment.

Investment in future business opportunities usually takes the form of research and development activities or advertising expenditures, especially for firms that do not have significant physical assets. While much of these costs are expensed, they still represent investments in the intangible assets of the firm. Since many dual-class firms do not report R&D or advertising expenditures separately, the dependent variable is assumed to be truncated at zero if it is missing.

The estimated relations between the summation of these two types of expenditures relative to asset values and sales with M&D ownership of cash flows and voting rights are reported in **table 8**. None of the coefficients for the ownership variables or their squared terms, with the exception of the (negative) coefficients of voting ownership squared in the regressions on R&D plus advertising relative to assets, are significant. While each measure of relative R&D plus advertising expenditures is negatively related to Tobin's Q, the estimated coefficients are only significant for the R&D plus advertising expenditures to assets measure.

## **7. CONCLUSION**

This thesis examined the relation between firm valuation, performance and specific expenditure decisions and M&D ownership of voting power and cash flows for Canadian listed dual-class firms. Because dual-class structures allow for the separation of voting and cash flow ownerships, the various impact of these two kinds of ownership can be independently identified. Firm value as measured using Tobin's Q and capital

expenditures relative to either assets or sales both have a significantly negative and convex relationship with M&D voting ownership but an insignificant relationship with M&D cash flow ownership. No consistently significant relationships are identified between sales growth, net profit margin, return on equity or R&D+Advertising to assets or sales and the voting and cash flow M&D ownership variables.

These empirical results can be interpreted as follows: The entrenchment effect becomes stronger as M&D voting rights ownership increases. Thus, with greater voting control, insiders directly active in corporate governance can pursue strategies that are at the expense of outside shareholders.

It is of course possible that the observed patterns of voting and cash flow ownership are endogenous responses by firms to their different environments. While some part of the ownership structures across a broad group of firms is certainly endogenous to other firm characteristics, it is difficult to reconcile the full set of results reported herein with any plausible model of this endogeneity. Also, since the regression results reported herein are estimated on an industry-adjusted basis for samples that include only dual-class firms, any endogeneity factor must work within this sample and not through selection into the dual-class category.

**APPENDIX**  
**DEFINITIONS OF THE REGRESSION VARIABLES**

This list includes all variables used as regressors. Specifically:

*Adjusted Q – Tobin's Q* minus the median for the corresponding industry where medians are calculated by matching the four-digit GICS group codes for the firms with those of the 24 industries.

*Age* – The log of the firm's age measured in months as of December of each year.

*Assets* – The log of the book value of assets in millions of dollars as of December of each year.

*CAPEX/Assets* – Capital Expenditures (*CAPEX*) divided by book value of assets as of December of each year.

*CAPEX/Sales* – Capital Expenditures (*CAPEX*) divided by Net Sales as of December of each year.

*CFOwn* – The percentage total ownership by officers and directors (M&D) to the dual-class firm's cash flows. Rights to the firm's cash flows are assumed to be proportional to the ordinary dividends of that class if dividend data exist. If dividend data do not exist or if the dividend distribution is not ordinary, cash flow rights are assumed to be equal across classes.

*CFOwnSq* – Square of *CFOwn*.

*Coattail* – A dummy variable equal to one if a "COATTAIL" provision is triggered in the event of a takeover bid (zero otherwise).

*Cross-listed* – A dummy variable equal to zero if the firm is listed only on the TSX



(one otherwise).

*FCFF* – Free cash flow to the firm, which is equal to EBIAT + Depreciation/Amortization/Depletion Expense – CAPEX – Increase in NWC or net working capital where EBIAT is earnings before interest, amortization and taxes.

*Net Profit Margin* – Income before Extraordinary Items, which represents the income of a company after all expenses but before provisions for common and/or preferred dividends, divided by Net Sales.

*(R&D&A)/Assets* – The sum of research, development and advertising expenses divided by book value of assets.

*(R&D&A)/Sales* – The sum of research, development and advertising expenses divided by sales.

*Return on Equity* – Income Before Extraordinary Items, which represents income of a company after all expenses but before provisions for common and/or preferred dividends, divided by Total Equity.

*S&P/TSX* – A dummy variable that is equal to one if the dual-class firm is included in the S&P/TSX composite index as of the end of the previous year or to zero otherwise.

*Sales Growth* – Change in annual net sales divided by the previous year's sales or (Current net sales- previous net sales) / previous net sales.

*Tobin's Q* – The ratio of the market value of assets to the book value of assets, where the market value of assets is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes.

The market value of equity for dual-class firms with classes that are not traded publicly is calculated using shares outstanding from proxy statements and assuming equal prices across classes.

*VTOwn* - The percentage of total votes owned by officers and directors (M&D) across classes, as reported in the proxy statements.

*VTOwnSq* – Square of *VTOwn*.

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**Table 1. Summary Statistics for Various Firm Characteristics for 2004 for Single- and Dual-class TSX-listed Canadian Firms**

This table reports the means and medians of several firm characteristics for 1062 single- and 94 dual-class, TSX-listed Canadian firms in 2004. The statistics are calculated for the full dual-class sample examined herein, and for single-class firms in the *Compustat* database. *Assets* is the book value of assets in millions of dollars. *Debt/Assets* is the ratio of long-term debt to assets. *Market Value* is market value in millions of dollars at the end of 2004, where the market values for dual-class firms with nonpublicly traded common equity classes are calculated using shares outstanding from proxy circulars and assuming equal prices across classes. *BM* is the ratio of book value (the sum of book common equity and deferred taxes) to market value at the end of 2004. Significant differences for the means and medians are indicated at the 0.10, 0.05 and 0.01 levels by \*, \*\* and \*\*\*, respectively. The p-values for the t-tests of the means and the Wilcoxon ranksum tests for the medians are given in parentheses in the “difference” column.

<b>Firm Characteristic</b>	<b>Statistic</b>	<b>Single-class</b>	<b>Dual-class</b>	<b>Difference</b>
Assets	Mean	3011.57	4195.29	-1184 (0.4251)
	Median	87.17	673.70	-586.53 (0.0000)***
Debt/Assets	Mean	0.1459	0.1683	-0.022 (0.3686)
	Median	0.0272	0.1157	-0.0885 (0.0000)***
Market Value	Mean	1073.56	1587.22	-513.7 (0.0948)*
	Median	106.70	525.57	-418.87 (0.0000)***
BM	Mean	0.8662	1.0399	-0.174 (0.2993)
	Median	0.5134	0.7320	-0.2186 (0.0000)***

**Table 2. Numbers of Single and Dual-class Firms in Each Four-digit GICS Industry**

This table provides the numbers of single- and dual-class firms in each of 24 industries as of December 2004 based on a match of the four-digit GICS codes for the firms with the codes for the 24 industries. The industries are in descending order of number of single-class firms.

Industries	Number of Firms	
	Single-class	Dual-class
Materials	278	8
Energy	189	7
Capital Goods	71	8
Software & Services	62	1
Pharmaceuticals & Biotechnology	58	1
Real Estate	48	3
Technology Hardware & Equipment	47	3
Diversified Financials	40	9
Food, Beverage & Tobacco	33	3
Health Care Equipment & Services	29	0
Retailing	24	5
Commercial Services & Supplies	21	5
Utilities	21	2
Media	20	16
Transportation	19	1
Consumer Durables & Apparel	17	6
Consumer Services	17	4
Banks	15	0
Insurance	15	2
Telecommunication Services	12	1
Automobiles & Components	11	3
Semiconductors & Semiconductor Equipment	8	0
Food & Staples Retailing	5	5
Household & Personal Products	2	1



**Table 3. Ten Largest Dual-class Firms at Year-end 2004**

This table lists the ten dual-class firms with the largest market capitalizations (caps) at the end of 2004, their market caps and their industries based on their four-digit GICS codes. The market values for the dual-class firms with nonpublicly traded common equity classes are calculated using shares outstanding from proxy circulars and equal prices across classes. The firms are reported in descending order of their market caps. The market cap of each firm is reported in the third column.

<b>Firm</b>	<b>Industry</b>	<b>Market Cap (\$ millions)</b>
Telus Corp.	Telecommunication Services	12701.88
Power Corp. of Canada	Diversified Financials	12265.86
Brascan Corp.	Diversified Financials	11223.80
Magna International Inc.	Automobiles & Components	9563.71
Rogers Communications Inc.	Media	7817.73
Teck Cominco Ltd.	Materials	7141.87
Canadian Tire Corp. Ltd.	Retailing	5162.70
Shaw Communications Inc.	Media	4734.01
Bombardier Inc.	Capital Goods	4647.78
Canadian Utilities Ltd.	Utilities	3901.62

**Table 4. Voting and Ownership Ratios of Managers and Directors (M&D)**

This table reports the voting and ownership ratios for managers and directors (M&D) for the sample of dual-class firms. Panel A reports summary statistics on the number of dual-class firms with voting ratios below, at and above 1:10 for each year over the 1997-2004 period. The voting ratio is calculated as the votes per inferior share class divided by the votes per superior share class. Panel B provides summary statistics on the distribution of M&D cash flow and voting ownership ratios in the dual-class firms for 2004. *VTOwn* and *CFOwn* are the percentage entitlements of M&D to total votes and to total cash flows across all share classes, as reported in the proxy circulars. Entitlements to the firm's cash flows are assumed to be proportional to the ordinary dividends of that class if dividend data exists. If dividend data do not exist or if the dividend distribution is not ordinary, cash flow rights are assumed to be equal across classes.

<b>Panel A: Voting ownership ratios</b>								
	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Number of dual-class firms	120	128	126	118	118	113	106	94
<b>Dual-class voting ratios</b>								
Voting ratio > 1:10	12	17	15	16	13	14	12	10
Voting ratio = 1:10	45	49	48	44	45	43	36	32
Voting ratio < 1:10	63	62	63	58	60	56	58	52
<b>Panel B: Voting and cash flow ownership ratios</b>								
<b>Ratio</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Minimum</b>	<b>Maximum</b>			
<i>CFOwn</i>	0.2917	0.2304	0.2230	0.0001	0.9250			
<i>VTOwn</i>	0.6250	0.6472	0.2523	0.0003	0.9992			

**Table 5. Relationship between M&D Ownerships of Votes and Cash Flows**

This 10x10 contingency-type table reports the number of firm years for various decile combinations of the voting and cash flow ratios for managers and directors (M&D) for the sample of dual-class firms for the 1997-2004 period. Voting ratio is the percentage of the total number of votes owned by M&D across all common share classes as reported in the proxy circulars. Cash-flow ratio is the percentage of the total cash flows of the firm that M&D are entitled to. Rights to the firm's cash flows are assumed to be proportional to the ordinary dividends of that class if dividend data exist. If dividend data do not exist or if the dividend distribution is not ordinary, cash flow rights are assumed to be equal across classes. The lower off-diagonal elements are shaded to reflect cases where the voting ratio decile exceeds that of the cash flow ratio decile. The cells on the diagonal report the number of firms as mentioned above and the number of firms where the voting ratio exceeds the cash flow ratio in brackets besides it.

		Cash Flow Ratio (%)									
		00-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Voting Ratio (%)	0-10	69[45]	2	0	0	0	0	0	0	0	0
	10-20	10	6[3]	4	0	0	0	0	0	0	0
	20-30	15	11	7[2]	0	0	0	0	0	0	0
	30-40	1	15	22	2[2]	0	0	0	0	0	0
	40-50	7	30	16	13	14[0]	2	0	1	0	0
	50-60	17	42	44	15	3	10[8]	0	0	0	0
	60-70	22	45	38	41	37	13	2[2]	0	0	0
	70-80	8	20	24	20	11	11	15	7[4]	0	0
	80-90	0	20	18	17	18	9	8	5	4[4]	0
	90-100	1	6	17	5	3	20	29	23	21	7[7]

**Table 6. Summary Results for Regressions of Tobin's  $Q$  on Ownership Proxies**

This table presents summary results for median regressions of industry-adjusted Tobin  $Q$  ratios on M&D ownership variables over the 1997-2004 period. The second and third columns contain the mean coefficients and standard errors (in parentheses) for the full and constrained samples of dual-class firms, respectively. The constrained sample consists only of those dual-class firms with M&D voting rights of more than 20%.  $Q$  is the ratio of the market value of assets to the book value of assets, where the market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes. The market value of equity for dual-class firms with nonpublicly traded equity classes is calculated using shares outstanding from the proxy statements and assuming equal prices across classes.  $CFOwn$  and  $VTOwn$  are as defined in Table 4, and  $CFOwnSq$  and  $VTOwnSq$  are their respective squared values.  $Assets$  is the log of the book value of assets in millions of constant dollars.  $Age$  is the log of the firm's age measured in months as of December of each year.  $S\&P/TSX$  is a dummy variable equal to one if included in the S&P/TSX Composite Index as of the end of the previous year (zero otherwise).  $Cross-listed$  is a dummy variable equal to zero if listed only on the TSX (one otherwise).  $Coattail$  is a dummy variable equal to one if a "COATTAIL" provision is triggered in the event of a takeover bid (zero otherwise).  $FCFF$  is free cash flow to the firm. Industry adjustments are made by subtracting the industry median, where the medians are calculated by matching the four-digit GICS group codes from December of each year for the firms to those of the 24 industries.  $N$  is the sample size. Significance at the 0.10, 0.05 and 0.01 levels are indicated by \*, \*\* and \*\*\*, respectively.

Independent Variable/Statistic	Dependent Variable	
	Tobin's $Q$	
	Full Sample	Constrained Sample
<i>Constant</i>	0.2352 (0.1275)*	0.7147 (0.1871)***
<i>CFOwn</i>	-0.4552 (0.3113)	-0.5975 (0.3106)*
<i>CFOwnSq</i>	0.0790 (0.3585)	0.1437 (0.3573)
<i>VTOwn</i>	-0.4900 (0.2577)*	-1.4639 (0.5295)***
<i>VTOwnSq</i>	0.8298 (0.2417)***	1.5470 (.4152)***
<i>Assets</i>	-0.0415 (0.0112)***	-0.0545 (0.0117)***
<i>Age</i>	0.0071 (0.0163)	-0.0033 (0.0170)
<i>S&amp;P/TSX</i>	0.1025 (0.0410)**	0.1329 (0.0420)***
<i>Cross-listed</i>	0.1002 (0.0394)**	0.1401 (0.0409)***
<i>Coattail</i>	0.0177 (0.0337)	0.0041 (0.0347)
<i>FCFF</i>	-0.0032 (0.0085)	-0.0049 (0.0084)
<i>N</i>	851	766

**Table 7. Summary Results for Regressions of Measures of Operating Performance with M&D Ownership Variables**

This table reports summary results for the median regressions of measures of operating performance (specifically, sales growth, net profit margin and return on equity) on lagged M&D ownership variables, lagged ownership variables squared and lagged  $Q$  ratios over the 1997-2004 period. The mean coefficients and standard errors (in parentheses) are reported for the full and constrained samples in panels A and B, respectively.  $CFOwn$  and  $VTOwn$  are defined as in Table 4, and  $Q$  is defined as in Table 5. Each dependent variable is net of the industry median, which is accomplished by matching the four-digit GICS group codes of all firms to the 24 industries. Significance at the 0.10, 0.05 and 0.01 levels is indicated by \*, \*\* and \*\*\*, respectively.

Independent Variable/Statistic	Dependent Variable		
	<i>Sales Growth</i>	<i>Net Profit Margin</i>	<i>Return on Equity</i>
<b>Panel A: Median regressions for the full sample</b>			
<i>Constant</i>	-0.0181 (0.0143)	0.0058 (0.0071)	0.0459 (0.0139)***
<i>CFOwn</i>	-0.1602 (0.0800)**	-0.0287 (0.0395)	-0.0011 (0.0772)
<i>CFOwnSq</i>	0.1710 (0.0936)*	-0.0203 (0.0463)	-0.0500 (0.0905)
<i>VTOwn</i>	0.1164 (0.0677)*	-0.0286 (0.0335)	-0.0957 (0.0656)
<i>VTOwnSq</i>	-0.0745 (0.0630)	0.0717 (0.0312)**	0.0979 (0.0611)
$Q$	0.0079 (0.0038)**	0.0146 (0.0019)***	0.0368 (0.0036)***
<i>N</i>	692	692	698
<b>Panel B: Median regressions for the constrained sample</b>			
<i>Constant</i>	0.0339 (0.0481)	0.0763 (0.0159)***	0.0551 (0.0384)
<i>CFOwn</i>	-0.1672 (0.0953)*	-0.0140 (0.0314)	0.0269 (0.0762)
<i>CFOwnSq</i>	0.1757 (0.1112)	-0.0423 (0.0367)	-0.0744 (0.0892)
<i>VTOwn</i>	-0.0088 (0.1619)	-0.2434 (0.0534)***	-0.1276 (0.1293)
<i>VTOwnSq</i>	0.0013 (0.1273)	0.2237 (0.0420)***	0.1142 (0.1020)
$Q$	0.0079 (0.0045)*	0.0150 (0.0015)***	0.0368 (0.0036)***
<i>N</i>	625	625	631

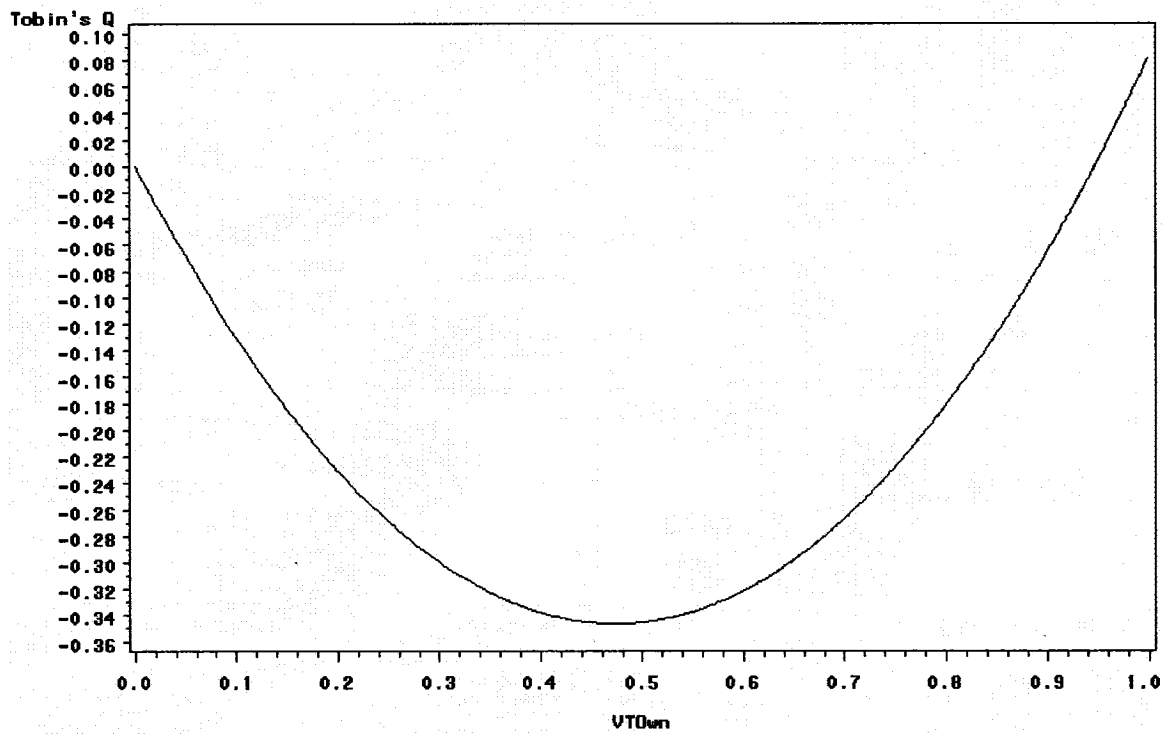
**Table 8. Summary Results for Regressions of Capital Expenditures and of R&D+Advertising Expenditures on the M&D Ownership Variables**

This table reports summary results for the median regressions of capital expenditures and of R&D+Advertising expenditures on the lagged M&D ownership variables (including their squares) and lagged  $Q$  ratios for the 1997-2004 period. The mean coefficients and standard errors (in parentheses) are reported for the full and constrained samples in panels A and B, respectively.  $CF_{Own}$  and  $VT_{Own}$  are defined as in Table 4, and  $Q$  is defined as in Table 5.  $CAPEX/assets$  and  $CAPEX/sales$  are capital expenditures to total assets and sales, respectively.  $(R\&D\&A)/Assets$  is the ratio of R&D plus advertising expenditures to total assets.  $(R\&D\&A)/Sales$  is the ratio of R&D plus advertising expenditures to sales. Each dependent variable is net of the industry median, which is accomplished by matching the four-digit GICS group codes of all firms to the 24 industries. Significance at the 0.10, 0.05 and 0.01 levels is indicated by \*, \*\* and \*\*\*, respectively.

Independent Variable/Statistic	Dependent Variable			
	CAPEX/Assets	CAPEX/Sales	(R&D&A)/Assets	(R&D&A)/Sales
<b>Panel A: Median regressions for the full sample</b>				
<i>Constant</i>	0.0146(0.0041)***	0.0087(0.0042)**	-0.0276 (0.0238)	-0.0018(0.0308)
<i>CF<sub>Own</sub></i>	0.0362 (0.0228)	0.0089 (0.0231)	0.0238 (0.0403)	0.0133(0.0519)
<i>CF<sub>Own</sub>Sq</i>	-0.0527(0.0268)**	-0.0258 (0.0270)	0.0084 (0.0563)	0.0310(0.0727)
<i>VT<sub>Own</sub></i>	-0.0890(0.0195)***	-0.0466(0.0196)**	0.1275 (0.0777)	0.0212(0.1008)
<i>VT<sub>Own</sub>Sq</i>	0.0952 (0.0181)***	0.0527(0.0183)***	-0.1636 (0.0624)**	-0.0659(0.0809)
<i>Q</i>	0.0002 (0.0011)	0.0007 (0.0011)	-0.0049(0.0017)***	-0.0025(0.0022)
<i>N</i>	693	687	121	122
<b>Panel B: Median regressions for the constrained sample</b>				
<i>Constant</i>	0.0389 (0.0115)***	0.0345(0.0104)***	-0.0276 (0.0238)	-0.0018(0.0308)
<i>CF<sub>Own</sub></i>	0.0387 (0.0228)*	0.0091 (0.0207)	0.0238 (0.0403)	0.0133(0.0519)
<i>CF<sub>Own</sub>Sq</i>	-0.0596 (0.0267)**	-0.0317 (0.0242)	0.0084 (0.0563)	0.0310(0.0727)
<i>VT<sub>Own</sub></i>	-0.1686(0.0387)***	-0.1256(0.0351)***	0.1275 (0.0777)	0.0212(0.1008)
<i>VT<sub>Own</sub>Sq</i>	0.1565 (0.0305)***	0.1119 (0.0276)***	-0.1636 (0.0624)**	-0.0659(0.0809)
<i>Q</i>	0.0002 (0.0011)	-0.0003 (0.0010)	-0.0049(0.0017)***	-0.0025(0.0022)
<i>N</i>	627	621	121	122

**Figure 1. Plot of Tobin's Q Against the Voting Rights Ownership Ratios of Managers and Directors (M&D)**

This figure plots the estimated relationship between industry-adjusted Tobin's Q for the dual-class firms and the M&D voting rights ownership variable, VTOwn. The plot uses the parameters reported in the third column of Table 6 (i.e., for the constrained sample) and holds the control variables fixed at zero.



**Figure 2. Plot of Tobin's Q Against the Cash Flow Ownership Ratios of Managers and Directors (M&D)**

This figure plots the estimated relationship between industry-adjusted Tobin's Q for the dual-class firms and the M&D cash flow ownership variable, CFOwn. The plot uses the parameters reported in the third column of Table 6 (i.e., for the constrained sample) and holds the control variables fixed at zero.

