





**HEC MONTRÉAL**

**The Time-Behaviour of Control Value in Canadian Dual Class Firms**

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## Résumé

Ce mémoire évalue le comportement temporel de la valeur attribuée aux votes et au pouvoir qu'ils confèrent à ses détenteurs principaux. Un échantillon de 61 sociétés canadiennes ayant une structure de capital à deux paliers entre 1998 et 2014 a été analysé. La valorisation de ce pouvoir est estimée selon une mesure développée par Nenova (2001). Celle-ci représente la valeur limite inférieure des bénéfices que peuvent extraire les actionnaires dominants. Le modèle d'analyse chronologique croisée utilisé dans ce mémoire est une extension du modèle d'analyse croisée entre pays présenté par la même auteure. En moyenne, la valeur du pouvoir sur la période évaluée était de 1.3 pourcent la valeur des entreprises. Sur une base annuelle, la moyenne de cette valeur atteignit un haut de 2.7 pourcent en 2002 pour redescendre à une moyenne de moins de 1 pourcent de 2010 à 2014. Les résultats présentés indiquent que la valeur du pouvoir a tendance à augmenter lors de périodes d'incertitudes économiques et de récessions. La moyenne de la valeur du pouvoir des entreprises familiales était également significativement plus basse que celle des autres entreprises. Puisque les variables explicatives précédemment identifiées étaient peu concluantes et significatives, les résultats obtenus suggèrent que les motifs pour l'utilisation d'une structure de capital à deux paliers et les mécanismes internes de gouvernance d'entreprise peuvent expliquer en partie les différences dans la valeur des bénéfices associés au contrôle entre diverses entreprises.

**Mots clés :** bénéfices liés au contrôle, prime de vote, structure à deux paliers, entreprises familiales



## **Abstract**

This thesis assesses the time-behaviour of the value of corporate voting rights and control in a sample of 61 dual class firms in Canada between 1998 and 2014. The value of control-block votes as a measure of the lower bound value of corporate control benefits was developed by Nenova (2001). The cross-sectional time-series regression model is an extension of the author's cross-country model. The value of control-block votes averaged 1.3 per cent of firm value over the period of interest, with annual averages decreasing from a high of 2.7 per cent in 2002 to less than 1 per cent from 2010 to 2014. Results also suggested that this value increases in times of economic downturn and heightened uncertainty. The average value of control-block votes for family-controlled firms was significantly less than other firms. While known determinants of control value were found to be mostly inconclusive and non-significant, results pointed towards motives for dual class structure and internal corporate governance monitoring measures as potential differentiator of the value of control benefits.

**Keywords:** corporate control benefits, voting premium, dual class firms, family-controlled firms



# Table of Content

Résumé .....	iii
Abstract .....	v
Table of Content.....	vii
List of Tables.....	ix
List of Figures .....	xi
Acknowledgement.....	xiii
Chapter 1 Introduction .....	15
Chapter 2 Literature Review .....	19
2.1. Security Ownership, Corporate Control and the Agency Problem .....	20
2.2. Value of Corporate Voting Right .....	23
2.3. Recent Literature on the Use and Impact of Dual Class Share Structure and Unification.....	26
2.4. Overview of the Debate on Dual Class Share Structure .....	28
2.5. Overview of the Canadian Regulatory Environment .....	30
2.6. Concentration of Corporate Control as General Theme .....	35
2.7. Family-Owned Corporations and Dual Class Structure .....	37
Chapter 3 Model and Hypotheses .....	41
3.1. A Model for Corporate Control Valuation .....	41
3.2. Time Behaviour of Vote Value .....	45
3.3. Main Hypotheses .....	46
Chapter 4 Data and Methodology .....	49
4.1. Sample and Data Sources .....	49
4.2. Dual Class Firm Definition .....	50
4.3. Control Value as Dependent Variable.....	50
4.4. Determinants of Control Value/Voting Premium .....	50
4.5. Other Variable Considerations .....	56
Chapter 5 Testing and Results.....	57
5.1. Sample Characteristics .....	57
5.2. Testing and Regressions .....	65

5.3.    Discussion of Results .....	71
5.4.    Further Issues and Considerations .....	74
Chapter 6 Conclusion.....	77
References.....	79
Appendix A Toronto Stock Exchange Coattail Provision Requirement .....	89
Appendix B Additional Regression Output .....	91
Appendix C Correlation and Covariance Matrices of Determinant Variables .....	97

## List of Tables

<b>Table 4.1.</b> Summary of Determinant Variables and Impact on Control Value .....	51
<b>Table 4.2.</b> Characteristic Variables of Interest .....	56
<b>Table 5.1.</b> Sample Ownership Characteristics from 1998 to 2014.....	59
<b>Table 5.2.</b> Participation of the Dominant Owner in Firm Supervision and Management from 1998 to 2014.....	60
<b>Table 5.3.</b> Sample Power-Concentrating Charter Provisions from 1998 to 2014 .....	61
<b>Table 5.4.</b> Sample Voting Premium and Control-Block Value from 1998 to 2014.....	63
<b>Table 5.5.</b> T-tests for the Difference in Mean Value of Control across Different Sub- Samples .....	65
<b>Table 5.6.</b> Estimation of Control Value as a Share of Firm Market Capitalization .....	68
<b>Table 5.7.</b> Summary of Key Financial Events that Affected Businesses from 1998 to 2014.....	69
<b>Table 5.8.</b> Institutional Determinants of Control Value as a Share of Firm Market Capitalization .....	70
<b>Table B.1.</b> Estimation of Control Value as a Share of Firm Market Capitalization for the Sub-Sample of Firms with a Voting: Non-Voting Equity Structure.....	91
<b>Table B.2.</b> Estimation of Control Value as a Share of Firm Market Capitalization in Information Industry Firms .....	92
<b>Table B.3.</b> Estimation of Control Value as a Share of Firm Market Capitalization for Each Year over the 1998 – 2014 Period.....	93
<b>Table B.4.</b> Estimation of Control Value as a Share of Firm Market Capitalization – Additional Characteristics of Principal Shareholders and Alternative Measures of Ownership Concentration.....	94
<b>Table C.1.</b> Correlation Matrix of Determinant Variables .....	97
<b>Table C.2.</b> Covariance Matrix of Determinant Variables .....	98



## **List of Figures**

<b>Figure 2.1.</b> Corporate Control Structure of Single and Dual Class Firms .....	22
<b>Figure 5.1.</b> Total Sample Count between 1998 and 2014 .....	58
<b>Figure 5.2.</b> Canadian Rule of Law Index between 1998 and 2014 .....	62
<b>Figure 5.3.</b> Box Plot of Control-Block Value between 1998 and 2014 .....	64



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## **Chapter 1**

# **Introduction**

Over the past decades, and even more so in recent years, there has been growing interest in corporate governance from government bodies, as well as academia and the general public. The well-known corporate and accounting scandals of Enron in 2001, Lehman Brothers in 2008 and Bernie Madoff in 2008 were followed by many more, including the more recent case of Toshiba who admitted in 2015 to overstating its earnings over a period of 7 years. The 2002 Sarbanes-Oxley Act (for improving corporate and auditing accountability, accuracy and reliability of corporate disclosures) and 2010 Dodd-Frank Act (for improving accountability and transparency of the financial system) in the United States, along with the OECD (Organization for Economic Co-operation and Development) Code of Best Corporate Governance Practices in Europe, are examples of laws and standards that have been implemented to strengthen corporate governance and disclosure regimes (Fray (2005) and Lauterbach and Pajuste (2016)). Moreover, countries around the world have increasingly been adopting International Financial Reporting Standards (IFRS) for the external reporting of publicly traded companies (Hong, 2013), which, in many countries, has been accompanied by corporate governance regime improvement as well as better enforcement of corporate securities laws (Christensen et al., 2011). The emphasis has particularly been on sound corporate leadership to ensure controlling shareholders and top management do not exploit their power to the expense of minority shareholders.

However, an ongoing debate remains in today's literature: the use of dual class equity structures, which creates a wedge between the ownership and control of a corporation. Dual class share companies issue two common classes of shares with differentiating voting rights for the same cash flow rights. In this type of ownership structure, it is common that the principal controlling shareholder, family or coalition, owns principally

shares with the higher votes, whereas public shareholders hold the less expensive and lower-vote (or non-voting) shares (Lauterbach and Pajuste, 2015). The resulting wedge is that the controlling shareholder (or group of shareholders) exerts control over “ $\alpha\%$  of a firm’s vote while owning less than  $\alpha\%$  of the firm’s equity” (Lauterbach and Pajuste, 2015, p.171). Such equity structure has been highly criticized in the public and professional community as well as in the academic literature. Notably, Bebchuk and al. (2000) argued that the “wedge” created by dual class structure allows controlling shareholders to afford lower equity holdings, thereby reducing the cost associated with the extraction of private benefits not available to minority shareholders. Such discount was effectively argued by the author to further encourage the controlling shareholder to increase private benefit consumption. Similarly, Cipollone (2012) argued that the dual class structure, as examined in the Canadian regulatory regime, erodes “the traditional internal and external monitoring mechanisms that serve as effective monitoring and disciplinary mechanisms in more dispersed ownership structures” (Cipollone, 2012, p.64). And more recently, Orsagh (2014) discussed the implications of the recent Alibaba’s initial public offering (“IPO”) of dual class shares, noting that the adoption of dual class share structure is effectively “sending the message that they want to control a majority of the votes but not take a majority of the risk. Another way to say it is that they want the public’s capital, just not their opinion” (Orsagh, 2014, p.1).

While the value of corporate voting right as a measure of private benefits of control has been the subject of extensive empirical studies since the mid-1980s, most of them have focus on the marginal premium of the superior voting shares over the restricted voting shares. The one outlier has been Nenova (2001) who argued that the value of marginal vote is not informative in comparing values across firms and countries. As part of her thesis, the author developed a measure for the value of control-block votes, measuring the total value of half the votes, scaled by the market capitalization of the firm, while adjusting for the aforementioned mechanical determinants of the value of control.

Following Nenova’s approach to valuation of corporate voting right, the current thesis aims to evaluate the time-behaviour of the control-block value of Canadian dual

class firms over the 1998 – 2014 period. The model used for this thesis is essentially rooted in that of Nenova (2001), with only a few adjustments proposed, taking into consideration the Canadian time-behaviour perspective of this study versus the cross-country assessment Nenova originally conducted.

Overall, this thesis found that the value of control-block votes averaged 1.3 per cent of Canadian firm value over the period of interest, with annual averages decreasing from a high of 2.7 per cent in 2002 to less than 1 per cent from 2010 to 2014. Results also suggested that this value increases in times of economic downturn and heightened uncertainty. The analysis further revealed that average value of control-block votes for family-controlled firms was significantly less than other firms. While known determinants of control value were found to be mostly inconclusive and non-significant, results pointed towards motives for dual class structure and internal corporate governance monitoring measures as potential differentiator of the value of control benefits.

The analysis conducted therein contributes to the existing body of knowledge on dual class premium by evaluating the stability of the control-block value over time, which has not been performed. While Canada was included in Nenova's cross-country study, the author's assessment was only for data collected in 1997. Beyond the different time horizon, the current study aims to assess the dynamics of control-value over longer period of time, providing a more fulsome picture of the use of dual class share structure among Canadian firms over economic cycles. The study takes into consideration the composition of dual class firms, differentiating between family-controlled and non-family-controlled firms. It also tests the known determinants of voting premium in the context of changing market conditions and evolving regulations and demand for sound corporate governance practices. The findings of this study also provide insights for the regulation of dual class firms in Canada, furthering the arguments that have already been advanced by different sources.

The remaining of this thesis is structured as follows. **Chapter 2** provides a review of relevant literature on security ownership, corporate control and the related agency

problem. Theoretical and empirical work is presented, followed by a closer examination of the debate on the use of dual class equity structure and an overview of the Canadian landscape in terms of regulations and ownership concentration. **Chapter 3** presents the model used for corporate control valuation, followed by the main hypotheses of this paper. **Chapter 4** details the data and methodology used. The results and key findings are discussed in **Chapter 5** in addition to a number of additional issues and considerations for future research. Lastly, **Chapter 6** concludes.

## **Chapter 2**

# **Literature Review**

Dual class shares represent a form of equity capital structure whereby firms issue at least two classes of shares with differentiating voting rights associated with the classes that do not match with the number of shares held. There are generally different voting ratios between the superior voting shares (SVS) and the restricted voting shares (RVS). Common structures include: voting and non-voting common share classes; multiple voting class (the SVS, with 10 or more votes/share) and a subordinate voting class (RVS, with 1 or no vote/share); and restricted voting shares, which place other limitations on the voting rights of the RVS class of equity (e.g. right to elect only 30% of the board of directors)<sup>1</sup>. In essence, the SVS class is generally entitled to elect the majority (or substantial number) of a firm's directors without owning the majority of its equity.

This Chapter aims to provide the necessary background on corporate control, security ownership, the well-documented agency problems arising from dual class corporate share structure, as well as the costs associated with these agency issues. Sections 2.1 through 2.3 lay out the fundamental theories and more recent literature on the subject, providing insights in the expanding body of knowledge. Section 2.4 summarizes the different arguments for and against the use of dual class share structure, which feed the ongoing debate surrounding their regulation. Section 2.5 provides an overview of the Canadian regulatory environment, detailing how it has impacted the use of dual class equity structure. The recurring theme of Canadian ownership concentration is discussed in Section 2.6, followed by Section 2.7, which concludes with a brief review of literature on family-controlled firms' mechanisms of control, including dual class equity structure.

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<sup>1</sup> In reviewed literature, restricted-voting and limited-voting shares are sometimes used interchangeably. While the superior- and restricted-voting shares are preferred terms, the word "limited" might be used in this paper.

## 2.1. Security Ownership, Corporate Control and the Agency Problem

The modern theory of the firm that has evolved from the fundamental work of Coase (1937, 1960), Alchian and Demsetz (1972) and Jensen and Meckling (1976) views an organization as a set of contracts between the various factors of production (including managerial labour and technology). In this model, the owner-manager and profit-maximizer *homo economicus* is replaced by a group of agents motivated by their self-interest, while understanding that the firm's ability to compete will directly impact their own outcome (Fama, 1980).

For large corporations, the security ownership and control of a firm's activities are typically two distinct functions, separating the bearing of risk from the financial and investment decisions of the firm (Fama, 1980). That is, management commonly bears the control function or decision-making, whereas the risk-bearing function is typically associated with capital ownership that can in turn be allocated in different proportions to different types of investors (Fama, 1980). However, large corporations typically have a myriad of individual investors, each of them only holding a small fraction of the total share count, without any significant voting power over the firm's decision (Levy, 1982). Moreover, these investors typically hold a diversified portfolio of securities across many firms precisely for the purpose of avoiding a high dependence of total wealth upon a single firm (Fama, 1980). Investors of corporations with such diffuse security ownership have therefore only a limited interest in overseeing the firm's activity and managerial decisions. The decision-making thus effectively lies within the hands of a small group of individuals, i.e. the management, who control the firm (Fama, 1980).

Potential conflicts of interest that may arise between the two groups are the subject of numerous studies on corporate governance, managerial entrenchment and corporate voting right. The underlying principal-agent dilemma (or "agency problem") is concerned with whether or not the managers are given incentives and opportunities to extract perquisites not available to outside investors. Jensen and Meckling (1976) questioned whether the payoff function of shareholders depends on the extent to which others assume the control function, i.e. the existence of moral hazard on the capital structure. Their analysis separated shareholders into two groups: the inside or

controlling shareholders or the firm's management who has exclusive voting power and the outside shareholders who own non-voting shares. While both classes were entitled to the same dividend payments per share, inside shareholders with low capital investment might have an incentive to act in their own interest, while negatively impacting the value of the firm. Hence, inside shareholders could increase their future welfare through investment and financing decisions that would yield non-pecuniary advantages only available to them and at the expense of outside shareholders. Such benefits could include prestige and status, but also more tangible advantages like the exclusive access and use of a firm's assets and resources or compensation packages that may be excessive (Jensen and Meckling (1976) and Lease et al. (1983)).

On that note, agency problems can exist for single class as well as dual class equity structures, although the specific nature of these issues and costs varies. Smith, Amoako-Adu and Kalimipalli (2009) effectively summarized these differences in agency problem stemming from corporate control structure in their paper titled *Concentrated control and corporate value: A comparative analysis of single and dual class structures in Canada*. Figure 2.1 extracted from their paper emphasizes that dual class share structure can lead to two potential groups of outside shareholders: those with a noncontrolling interest in the SVS class and RVS shareholders.

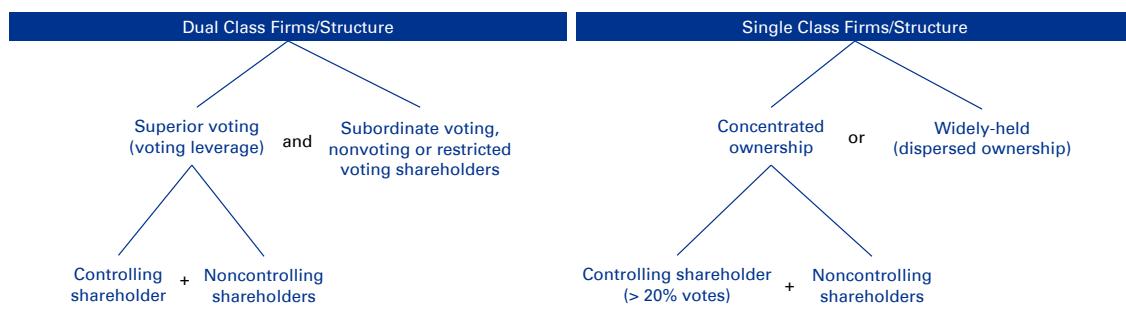
As discussed in Jensen and Meckling (1976), agency costs generally arise from the conflict of interests between the controlling and each class of noncontrolling shareholders, depending on the scenario. These costs typically include monitoring costs for the noncontrolling shareholders, and for controlling shareholders, various expenditures to ensure the firm is managed smoothly with the support of noncontrolling shareholders as well as some residual welfare loss due to the difference in interests between the different voting classes (Amoako-Adu and Kalimipalli, 2009).

Gomes (2000) further argued that these agency costs might be due to a corporate governance structure that effectively shields the controlling shareholder group or insufficient protection of shareholder rights from the legal system. Indeed, the author showed that when controlling shareholders have significant wealth tied up in the

company, the incentive to maximize firm value and performance is strong enough and these shareholders might be less incentivized to be entrenched, regardless of the legal framework.

**Figure 2.1. Corporate Control Structure of Single and Dual Class Firms**

The agency problem and related costs vary depending on whether a company is controlled with a dual class or single class structure. As explained in Amoako-Adu and Kalimipalli (2009), control is said to be concentrated when a shareholder (or affiliated group) owns more than 20 per cent of the shares and associated votes – a stake sufficiently large to be able to block a hostile takeover. It is considered unlikely that the noncontrolling shareholders normally comprised of individual or smaller blocks be able to form a coalition to replace management. On the other hand, there are two groups of minority or noncontrolling shareholders under a dual class structure: those holding the restricted shares and those holding a minority of the superior voting shares. Under the latter structure, the agency costs will reflect the disagreement and monitoring costs amongst the three groups of shareholders, which could be argued to be associated with larger agency problem and costs than when there are fewer groups (as in the case of single class firms).



Sources: Smith (2009) and Kalimipalli (2009, p.958)

Similarly, Bebchuk, Kraakman and Triantis (2000) argued that, as the controlling shareholder's share ( $\alpha$ ) of cash flow rights decreases, the agency costs to non-controlling shareholders can “increase at a sharply increasing rate” (Bebchuk et al., 2000, p.452). The authors further argued that the rate at which these agency costs effectively increase depends on whether additional constraints are put on the controlling shareholders. Their approach also examined cases of corporate investment project choices and decisions on scope. The authors demonstrated that when  $\alpha$  is large, the controlling shareholder can choose the project yielding the highest value to the firm, as it should increase the value of its equity investment, although personal benefits could, in theory, still be extracted. However, when  $\alpha$  is small, the authors argued that the controlling shareholder can choose the project that will ultimately yield the largest private benefits, while at the same time increasing agency costs to non-controlling shareholders since much of the decline in resulting share price is externalized to the

minority group. A similar line of reasoning (through mathematical proof) was used in discussing the controlling shareholder's decision regarding whether to expand or contract the company's scope of operations.

Cipollone (2012) further suggested that in the case of dual class firms, internal monitoring mechanisms are eroded by the fact that shareholders' right to vote – an important means of ensuring shareholders' interest are not only heard, but protected – is greatly altered. The author argued his point, discussing some previous studies and cases. And in the particular instance where RVS shareholders are not entitled to vote (unless prescribed by the law), the author made the point that without voting power attached to equity, "even large institutional investors cannot monitor or counterbalance the influence, activities, and interests of controlling minority shareholders" (Cipollone, 2012, p.74).

Lastly, in their comparative empirical analysis of single and dual class structures, Smith et al. (2009) suggested that agency costs were also the greatest for dual class firms due to monitoring costs associated with two groups of noncontrolling shareholders (as depicted in Figure 2.1.). The authors found that Canadian dual class firms sold at a significant discount to closely-held single class firms over the period of analysis, consistent with the hypothesis that "dual class structure should lessen corporate value" (Smith et al., 2009, p.973) as it weakens the alignment between shareholders and management, thereby increasing the agency problem.

## **2.2. Value of Corporate Voting Right**

The hypothesis that corporate control is valued by capital markets was originally examined by Lease, McConnel, and Mikkelsen (1983). Their ground work, along with that of several other researchers studied the market valuation of voting right through the stock price analysis of companies with dual or multiple classes of common shares (Nenova, 2003). As noted by Lease et al. (1983), Articles of Incorporation specify that the holders of these differential classes of security be entitled to the same future dividend payments and capital distribution. However, as previously mentioned, these share classes will generally differ in the matters upon which each class may vote,

including the participation in the election of the members of the board of directors, though the exact degree of control conveyed by the extra vote is specific to each firm. As such, dual class ownership structure allows for the possibility of one class of common shareholder to exercise a greater control over the firm's decisions than the other through its superior voting power (Lease et al., 1983). Since traditional finance theory states that any two securities with "identical future payoffs" (Lease et al., 1983, p.466) in all possible states of natures must have identical current prices, sustained differences in the prices of these dual classes of common stocks must reflect variations in the future benefits granted by each class (Lease et al., 1983). A consistently higher price for SVS over RVS would therefore be consistent with the hypothesis that the controlling (or SVS) class of security would receive a higher payoff than the non-controlling (or RVS) class in at least one state of nature (Lease et al., 1983). Together, these premises have formed the basis for the valuation of corporate voting right.

In the years that followed the fundamental work development on dual class equity structure, several empirical studies have documented a consistent marginal (i.e. non-control-block) premium of SVS over RVS across many different countries, including Canada (Joy and Riding (1986), Smith and Amoako-Adu (1995) and Robinson et al (1996), the United States (Zingales, 1995), Israel (Levy, 1982), England (Megginson, 1990), Switzerland (Horner, 1998), Sweden (Rydqvist, 1996), and Italy (Zingales, 1994). According to Jensen and Meckling (1976), Manne (1965) and others, the market price premium allocated to the superior voting shares could be attributed to the voting control conferred by this class, the latter deriving its market value from the perquisites and additional non-direct compensations that controlling shareholders may extract for themselves. However, as duly noted by Lease and al. (1983), this line of reasoning, though representing an important milestone to subsequent research, can only partially explain the price premium of SVS over RVS. A number of additional theoretical explanations for such temporally stable voting premiums were advanced over the years, including the Extra Merger Hypothesis, the Ownership Structure Hypothesis and the Voting Power Hypothesis, all of which have been argued extensively. Each of these theories is summarized below.

The essence of the **Extra Merger Hypothesis** was first mentioned by Lease, McConnell and Mikkelsen (1983), and then elaborated by Levy (1982), Stulz (1988), and De Angelo and De Angelo (1985). The authors suggested that in the event of a control contest, a differential bid might be given to shareholders, with a higher price offered for those shares with superior voting rights (Megginson, 1990). The differential price could then be construed as a premium paid to shareholders who alone can sell control over the firm (Megginson, 1990). As such, the theory implies that the voting premium associated to a firm's SVS be directly related to the likelihood of a control contest and the likelihood that a higher price be paid for SVS given that such control contest occurs. Empirically, De Angelo and De Angelo (1985) documented such premium in four of the cases they studied.

However, while the Extra Merger Hypothesis may provide a suitable explanation for small voting premiums, other factors are likely to be influential as to account for larger voting premiums such as the 45% reported in Levy (1982). A complementary explanation is offered by the **Ownership Structure Hypothesis**, which relates insider shareholdings, that is, managerial holding of voting equity, to the valuation of a firm's multiple classes of shares (Megginson, 1990). A number of studies have documented the dual effects of managerial shareholdings and the intrinsic valuation tradeoff they yield. While ownership of additional shares may incentivize managers to perform in the best interest of the firm, at least when insider shareholding is initially low, managers may rather become entrenched in office when insider holding is initially high (Megginson, 1990). The resulting outcome is a lower total firm value, which derives from the inability of outside shareholders to properly discipline the entrenched management, either directly, or indirectly through takeover measures (Morck, Shleifer, and Vishny, 1988). Extending this line of reasoning to dual class shares, the Ownership Structure Hypothesis suggests that relative valuation of dual class shares may be explained by their respective fraction of insider ownership. The full entrenchment effect of concentrated insider SVS holding would be expressed as a discount on the value of RVS compared to SVS (i.e. if both classes had the identical voting rights). Hence, assuming that insider ownership was concentrated into RVS holdings, entrenchment incentives would be lower, which would in turn temper the discount on valuation. Conversely,

insider holding of SVS would heighten the discount and thus increase the price gap between the two classes of equity. Finally, the theory proffers that there is a direct relationship between the voting premium and the fraction of equity used to gain voting control. That is, “the greater the concentration of voting power in the SVS class relative to its fractional cash flow rights, the more easily can management entrench itself and the higher the voting premium is expected to be” (Megginson, 1990, p.180-181).

At last, the **Shapley/Shubik Voting Power Hypothesis**, which was concurrently developed by Rydqvist (1993) and Robinson and White (1996), holds some explanatory power for the documented dual class premium. The theory effectively asserts that the composition and the stability of a firm’s controlling coalition (or block) of shareholders can affect the valuation of non-control-block shares. As such, when control of a firm is likely to be subject to a takeover or contest, that is, when the control coalition is unstable, SVS not part of the control-block should sell at a marginal premium to RVS. However, when control is tightly held by one or by a handful of shareholders, the corresponding voting premium is expected to be smaller (Rydqvist, 1993).

Taken together, these theoretical hypotheses suggested that the higher market value of SVS over RVS can be explained by the ownership structure, the probability of a control contest, and the probability of a differential bid being offered, the former and latter being intrinsically linked to the country’s laws and regulations (Nenova, 2001).

### **2.3. Recent Literature on the Use and Impact of Dual Class Share Structure and Unification**

While earlier publications focused on measuring the voting premium or control-block value as proxy for the magnitude of private benefits extraction by the controlling shareholders, more recent literature appears to have focused either on 1) the various effects associated with this capital structure, 2) the impact of increased corporate governance regulation and standards (direct or indirect) on the performance of dual class firms and on the voting premium, or 3) on the impact of dual class unification on such performance. Notably, Hong (2013) studied the impact of mandatory IFRS adoption of dual class firms and found that the voting premium of adopting firms decreased by 8 per

cent on average after the mandatory IFRS adoption, a statistically significant difference compared to the corresponding effect for firms that did not adopt IFRS. This effect was found to be more pronounced in countries where legal enforcement is known to be strong and for firms that experienced increased transparency and comparability of reported information under IFRS, suggesting that IFRS adoption may provide an effective mechanism to limit the extraction of private benefits from controlling shareholders. In the United States, Amit and Villalonga (2009) argued that the use of dual class shares as a control enhancing mechanism in U.S. family-controlled firms has adverse effects on minority shareholders and negatively impacted firm value. Also, a disproportionate frequency of poor acquisitions in U.S. dual class firms was documented in a study published by Masulis et al. (2009). Specifically, the authors examined the impact of the wedge between insider voting and cash flow rights on managerial extraction of private benefits of control and found that “as this divergence widens, corporate cash holdings are worth less to outside shareholders, CEOs receive higher compensation, managers make shareholder value-destroying acquisitions more often, and capital expenditures contribute less to shareholder value” (Masulis et al., 2009, p.1697).

Other studies on the valuation of dual class shares suggest that, as the issuing firms mature or circumstances change, the agency costs associated with the dual class structure exceeds the original benefits it may have originally provided. For instance, Bennedsen and Nielsen (2010) found that dual class structure discounts European firm market value by 20 per cent on average. This discount is greater than that observed for firms with alternative equity structures, such as pyramids, that also distort the 1:1 proportion between ownership and control. Similarly, Gompers and al. (2010) documented the adverse effects of dual class share structure in U.S. firms’ valuation. And, in Canada, King and Santor (2008) reported a lower valuation of family-owned companies with a dual class structure of 17%, on average, relative to widely held firms.

More recently, a growing number of studies have investigated the unification of dual class share companies. Notably, Dittmann and Ulbricht (2008) studied the unifications of dual class in Germany and reported a positive market response to unification

announcements. The authors reported a 4 per cent increase in firm value, on average, on the day of the announcements, which could be attributed, in part, to the ownership structure and changes in liquidity. Next, using a sample of 121 firms that voluntarily unified their dual class share structure in Europe (over the 1996 – 2009 period), Lauterbach and Pajuste (2015) found evidence of a “positive valuation response to governance improvements and a negative valuation response to possible financial tunneling” (Lauterbach and Pajuste, 2015, p.171). The study’s findings also suggested that, on average, the positive effect of corporate governance improvement on firm valuation prevailed and that voluntary unifications were generally associated with a statistically and economically significant increase of Tobin’s Q (a measure of firm performance). Lastly, Maury and Pajuste (2011), Lauterbach and Pajuste (2014) and Betzer and al. (2013) all advanced some evidence on the reasons for voluntary unification, which essentially suggested that unifications should increase the market value of firms as they improve the firms’ stock liquidity, raising of capital and public image.

However, amidst the evidence published on the structure of equity ownership and on the impact of control-enhancing mechanisms (like dual class share structure) that create a wedge between ownership and control (including the agency problem), it should be noted that these studies haven’t gone unchallenged by findings that contradict the evidence presented in these studies<sup>2</sup>. Notably, dual class share structure has been argued to offer clear benefits and some empirical studies have provided supporting evidence for the use of dual class structure. The main arguments for and against the use of such equity structure are outlined in the following section.

## **2.4. Overview of the Debate on Dual Class Share Structure**

The use of dual class equity structure remains a subject of debate in today’s literature, and there is much discussion as to how to best regulate these firms given the mixed

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<sup>2</sup> Some of the advantages of dual class structure are documented in this study. However, for a recent and extensive review of recent research on the structure of equity ownership and related effect on firm value, you can refer, notably, to Basu, Nilanjan (2014).

findings and arguments that suggest dual class share structure can sometimes prove to be beneficial<sup>3</sup>.

As discussed in earlier sections, dual class equity structures are subject to various risks, including:

- **Managerial entrenchment:** The risk that “dual class equity structure can entrench poorly performing management” as well as shield them from “accountability for their actions” (Mercley, 2015, p.3).
- **Non-assertive board of directors:** The risk that dual class equity structure results in “passive” board members given that SV shareholders may have a disproportionate ability to elect/replace board members (Mercley, 2015).
- **Private benefit extraction:** The risk that holders of SVS and controlling shareholders make decisions or exert influence on a company to extract private benefits, including non-pecuniary items, at the expense of minority shareholders (Mercley, 2015).
- **Disproportionate economic exposure:** The argument that the voting power conferred by the SVS class is well beyond the economic interest of these shareholders, whereas most of the “financial risk is borne by” holders of SVS (Mercley, 2015, p.3).

On the other hand, several arguments have been advanced by proponents of dual class share structures (CCGG (2013), Mercley (2005), Cipollone (2012)). Notably, it has been argued that such structure leads to increased participation of family-controlled or entrepreneurial firms in public equity markets. Given the original investment of these founders, it is argued that many would only access public capital markets if the capital structure allowed them to maintain control over their firm. Moreover, dual class share structure offers public investors the opportunity to invest in these companies, which would otherwise not be possible.

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<sup>3</sup> Key arguments for and against the use of dual class structure are well summarized in a number of articles and in the public domain; Notably in CCGG (2013), Mercley (2015), Gray (2005), and Cipollone (2012). Section 2.4 effectively summarizes arguments presented in these sources, most of which overlap.

Another benefit argued in the literature is that dual class share structures allow controlling shareholders that hold SVS, management and the board of directors to focus on the long-term success and profitability of the corporation, as opposed to being concerned with satisfying short-term financial expectations. Related to this argument, others have suggested that dual class equity structure may act as an effective shield from hostile or opportunistic takeovers (that may take advantage of short-term fluctuations related to long-term value creation).

Lastly, although there are several more arguments advanced by proponents, it has been asserted that, contrarily to what has been advanced in financial theory, the “interests” of “controlling shareholders with meaningful equity” (Mercley, 2015, p.2) stake in SV shares and of minority shareholders are aligned with regards to management supervision and discipline, thus minimizing the agency costs. Moreover, it is argued that such controlling SV shareholder would be not only be well positioned, but also have the right incentive and authority to supervise the conduct of management.

As the debate continues in Canada, several have proposed alternatives to improve corporate governance in dual class firms and minimize the risks listed above, while continuing to allow the use of such capital structure<sup>4</sup>. To provide some context to the Canadian debate in light of this study, the following section delves further into the Canadian market of dual class firms and the past and current regulatory features that have shaped this market.

## **2.5. Overview of the Canadian Regulatory Environment<sup>5</sup>**

Canadian companies have been documented to use dual class shares in order to access capital markets for nearly 90 years. In their article titled *Dual Class Shares in Canada: An Historical Analysis*, Ben Ishai and Puri (2006) offer an extensive historical evaluation of the use of dual class shares in Canada, covering its emergence and evolution and considering the legal framework that has driven the use of such corporate

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<sup>4</sup> For instance, Allaire, Yvan (2006) offered a proposal for dual class regulation. Other sources would include: Gray, Tara (2005), Cipollone (2012) and CCGG (2013)

<sup>5</sup> Section 2.5. effectively summarizes the key historical elements and arguments presented in Ben Ishai and Puri (2006). Additional sources, as referred therein, complemented this overview.

control structure. Accordingly, the authors argued that nationalist policies, legislations and discourses have played a legitimating role to the initial adoption and persistence of dual class shares in Canada. That is, policy and legislation (from both an economic development and corporate standpoint) have generally acted to address concerns with respect to the foreign ownership and domination of Canadian business, especially from the United States. One of the main impact of such nationalist environment has been the use of dual class share structure to attain or maintain a mostly Canadian ownership/control of companies, while also raising equity capital for growth and addressing changing market conditions and demand. However, throughout the 20<sup>th</sup> century, several “themes” (Ben Ishai and Puri, 2006, p.117), as documented by the authors, have influenced the share structure of Canadian corporations, including: the high concentration of ownership of Canadian companies, the different regulators in securities and corporate law, the post-recession market conditions and demand for new equity, the use of non-voting shares to reward/motivate employees (through stock ownership plans), the growth in corporate pension plans, the gradual convergence between shareholders and other stakeholders as pension funds and other institutional investors became more prominent towards the end of the century, and the rising shareholder activism that accompanied the growing prominence of institutional investors who gained a voice in corporate governance issues and debates.

### ***Regulation of Dual Class Shares in Canada***

In comparison with other countries, Canada has relatively few regulations regarding the adoption of dual class share structure<sup>6</sup> and is likely one of the reason for its sustained prominence over the years. In their Canadian historical analysis, Ben Ishai and Puri (2006) highlighted the 1984 Policy from the Ontario Securities Commission (OSC), which required, generally, that holders of restricted shares (including prospective ones) be made aware of the difference in rights compared to that of common shareholders, that they received materials sent to common shareholders, that some rights be granted to restricted shareholders to attend and speak at meetings of voting shareholders, and that

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<sup>6</sup> Nenova (2001) offers a cross-country analysis of voting rights and dual class shares regulatory environment in its Essay on Corporate Control forming its doctoral thesis. Amoako-Adu and Smith (2001) also offer some cross-country evaluation of the regulatory environment for corporate control.

these shareholders be entitled to approve, by a majority of the minority vote, the creation/issuance of restricted shares<sup>7</sup>. Moreover, as documented by Amoako-Adu and Smith (2001), while the TSX listing generally poses some requirements for dual class shares, it was only in 1987 that the exchange made mandatory the adoption of a coattail provision for any company listing either one class or both classes of shares on the TSX. Coattail provisions allow holders of non-voting, subordinate voting or restricted voting shares to be entitled to receive the same offer made to purchase superior voting shares in cases of takeovers. It is notably argued that this is one of the reasons why Canadian dual class firms' superior voting shares have since been trading "at some of the smallest premiums" (Cipollone, 2012, p.80) globally<sup>8</sup>. However, as the TSX requirement was only for newly listed firms, dual class firms that were listed before the effective date were then "grandfathered" (Cipollone, 2012, p.80), resulting in outstanding TSX-listed dual class issuers without coattail provisions. Additionally, the TSX does not specify the terms and conditions of the coattail provisions of its issuers<sup>9</sup>. While the terms must be pre-cleared by the exchange<sup>10</sup>, coattail provisions are not standardized, thereby leaving variability in the relative strength of the protection conferred to minority shareholders by the provisions. In its recent review of the dual class equity structures in Canada, Cipollone (2012), argued at length, through examples of abusive transactions, that the effectiveness of the coattail provision is curtailed by the lack of retro-activeness of the TSX requirement for such provisions in 1987. Although the number of companies without such coattail provisions listed on the exchange has decreased over the years, there remains a tangible risk to the minority shareholders of dual class firms (as those documented by the Shareholder Association for Research and Education (SHARE) in Cipollone (2012).

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<sup>7</sup> All dual class firms listed on the TSX (including grandfathered ones) are presently subject to a number of provisions that focus on full disclosure and clarity, avoiding confusing share nomenclature. These include: 1) OSC Rule 56-501 and part 12 of National Instrument 41-101 – General Prospectus Requirements, regarding criteria for the creation of and conversion to dual class structure; 2) Part 10 of National Instrument 51-102 – Continuous Disclosure Obligations, requiring expanded continuous disclosure requirements; and 3) Item 10.6 of Form 41-101F1 – Information Required in a Prospectus and Item 7.7 of Form 44-101F1 – Short Prospectus, for criteria imposed on detailed prospectus disclosure.

<sup>8</sup> Nenova (2001). The author reported control premiums in the range of 2 to 4 per cent in Canada.

<sup>9</sup> Second Class Investors. The use and Abuse of Subordinated Shares in Canada (April 2004) in Cipollone (2012).

<sup>10</sup> TSX Company Manual, section 624(I). Refer to Appendix A for the terms and conditions from the TSX.

Moreover, as previously noted, the mandatory coattail provision adoption in Canada was the exchange listing requirement and not a securities law (Ben Ishai and Puri, 2006). And amidst the attempt of Canadian regulators and public stock exchanges to impose some requirements on firms with dual class structure (which are essentially limited to the aforementioned OSC and exchange laws and regulations), some loopholes have remained that contribute to further exacerbate the relative effectiveness of coattail provisions in Canada. Notably, as discussed in Amoako-Adu (2001), the Ontario Securities Act and Regulation offers a provision whereby investors may buy as many shares of a company without having to extend the offer to all shareholders if these shares are purchased from 5 or less sellers and the offer price does not exceed 115% of the market price prior to the offer. As such, Canadian regulations allow change of control to be exempt from the coattail provision under these circumstances, thereby sanctioning controlling/dominant shareholders to extract a premium from the sale of their controlling interest that is not available to minority shareholders (Amoako-Adu, 2001). Once again, Cipollone (2012) detailed examples of such instances in his argument about the effectiveness (or lack thereof) of Canadian legislations regulating corporate governance of dual class firms.

Lastly, contrarily to Sweden, Finland and Denmark, for instance, that restrict the voting ratio between superior voting and restricted voting shares (Bergstrom and Rydqvist (1990), Rydqvist (1996) and Teall (1997)), Canadian legislation remains permissive, without requiring any maximum voting ratio on dual class firms (Zyngales, 1995). As such, one can observe a wide array of voting ratios on the Canadian stock exchanges: voting and non-voting shares (with a 1:0 voting ratio), but also multiple voting shares and subordinate voting shares, with voting ratios typically ranging from 50:1 to 3:1, although other scenarios are possible (with various types of restrictions). Nonetheless, there are clear outliers that remain with 150:1 or greater ratios. Exemplifying the disproportionate voting power segregation, Magna International Inc. had the largest gap in votes, with a 500:1 voting ratio between SVS and RVS (though the latter decreased to 300:1 in 2008).

### ***FIRA and NEP Regulations: Sector Concentration of Dual Class Firms***

In their historical review of Canada's policy and regulatory framework, Ben Ishai and Puri (2006) noted two government interventions in the 1970s that have influenced the use of dual class shares, even though the primary purpose of these interventions was to curtail foreign direct investments in the Canadian economy, particularly from the U.S. Notably, in 1973, the *Foreign Investment Review Act* led to the creation of the Foreign Investment Review Agency (FIRA), which would assist in the administration of the Act and in the supervision/screening of acquisitions of control and foreign direct investment. Foreign investors had to seek approval from the Canadian government to establish new business or acquire a Canadian business – the process involved filing a notice with FIRA and providing evidence of the significant benefit to Canada. Proposals were evaluated on a case-by-case basis. The authors suggested that FIRA provided incentive for companies to increase or “boost” their Canadian profile, including through share restructuration via dual class equity (Ben Ishai and Puri, 2006, p.134). Other documented amendments to Canadian legislation targeted the regulation of specific “key sectors” of activity, which included broadcasting (communication) and energy. These interventions required a minimum level of Canadian directors (generally 75% Canadian citizens) and ownership for companies in these key sectors (restriction to 25% foreign ownership of outstanding voting shares, or 10% for single non-Canadian investors). However, it should be noted that the various legislations that restricted the ownership of Canadian firms by non-Canadian investors did not entail that firms should adopt a dual class structure (Reiter, 2010). The Canadian government actually only required that firms comply with the ownership limits. As such, one can observe firms in the telecommunication sector (or other related sectors) that opted to only adopt a clause in their by-laws that notes that the Board of Directors may restrict the transfer of shares to foreign owners in order to ensure compliance with legislative limits. In other documented cases, the two classes of shares are distinguished by the nationality of the ultimate owner; that is, whether they are Canadian or non-Canadian. However, both

classes of shares are entitled to one vote per share, to the extent that the ratio is being respected<sup>11</sup>.

Lastly, in the early 1980s, the Liberal government introduced the National Energy Program (NEP), taking root in two legislations: The *Petroleum Incentive Payments Act* and the *Canadian Ownership and Control Determination Act*. Grants, which covered up to 80% of the costs of drilling on Canada lands, favored Canadian-owned companies, thereby putting foreign investors at a competitive disadvantage and prompting increased Canadian interest of foreign companies – including through recapitalization into dual class shares (Ben Ishai and Puri, 2006).

Ultimately, these government interventions are argued to have led to a higher proportion of dual class shares being observed in a few sectors; Notably, the telecommunications, broadcasting, media and entertainment, airlines (Gray, 2005) and energy sectors (Ben Ishai and Puri, 2006).

#### ***Restrictions on Institutional Investors***

At last, another legislative consideration outlined in Ben Ishai and Puri (2006) is that of the restriction institutional investors faced until 2005 with regards to foreign ownerships in the portfolio of RRSPs and pension funds – a limit that was previously set at 30%. The authors contended that liquidity requirements of portfolio managers might have prompted the ownership of non-voting shares if these were more liquid as a class. Conversely, the retraction of the 30% limit was speculated to potentially lead to future recapitalization of companies into a single class of share.

### **2.6. Concentration of Corporate Control as General Theme**

Ben Ishai and Puri's historical review of Canadian laws and regulations bodes well with the reported number of TSX-listed firms with dual class structures, a number that rose significantly over the decades leading to the 21<sup>st</sup> century<sup>12</sup>. The number of “new” classes of non-voting, subordinate voting or restricted voting shares that were listed on

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<sup>11</sup> It should be noted that these firms were excluded from the current study, as they did not meet the dual class criteria set forth in the methodology Chapter of this study.

<sup>12</sup> Note that different criteria may be used to define dual class firms by different authors and, as such, the reader should consider these numbers as general points of reference, rather than exact numbers.

the TSX grew from 7 in the 1940s, to 13 in the 1950s and 12 in the 1960s (OSC, 1984). As of 1979, the TSX comprised 64 companies with dual class shares. This number increased to 130 in 1983 (Ben Ishai and Puri, 2006). And, based on the analysis conducted by Amoako-Adu and Smith in their paper titled *Dual class firms: Capitalization, ownership structure and recapitalization back to single class*, a total of 177, 164 and 148 dual class firms were listed on the TSX in 1988, 1993 and 1998, respectively. Nonetheless, as duly noted by Merckley (2015), the number of dual class firms listed on the TSX has since decreased, maintaining a level well below one hundred<sup>13</sup>.

More generally, however, Canada's concentration of corporate ownership appears to have been a recurring theme in the legislative framework of the country and a differentiating factor, for instance, with its neighboring country – the United States. In a paper titled *The Rise and Fall of the Widely Held Firm: A History of Corporate Ownership in Canada*, Morck et al. (2004) reported that the Canadian corporate landscape at the beginning of the 20<sup>th</sup> century was mostly comprised of large pyramidal corporate groups owned and controlled by affluent individuals or families. The incidence of pyramidal groups further increased after World War II, amidst the presence of widely held firms. In 1990, whereas 63 per cent of companies listed on the U.S. Fortune 500 were widely held, there were only 14 per cent of such companies listed on the TSX (Morck et al., 2004).

Circulating back to the country's decades-long regulatory encouragement of Canadian ownership of firms and to the argument in favor of the use of dual class share structure by family-owned firms (as it leads to better performance and lower agency costs), the two topics appear to have been central to Canadian corporations. The following section delves further into the literature on family-owned corporations.

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<sup>13</sup> The Canadian Coalition for Good Governance (CCGG) published an article in September 2013 that specified: "according to the TSX July 2013 eReview, there are 77 DCS [dual class structure] companies (exclusive of investment funds) listed on the TSX." It should also be noted that this number is inclusive of all firms with a dual class structure, regardless of their specifics (i.e. clauses on convertibility, details of differences between the two classes, whether both classes are listed and traded on an exchange, etc.).

## **2.7. Family-Owned Corporations and Dual Class Structure**

A brief review of existing literature documented that family-owned corporations generally tend to invest an important part of their wealth and assets in order to maintain control of their corporation. However, alternative means of preserving power also include various “control-enhancing mechanisms” (CEMs), such as the use of “dual class shares, pyramidal structures, voting agreements, cross shareholdings” (Jewartowski and Kaldonski, 2015, p.174), and disproportionality between ownership and control. These mechanisms are generally used to allow firms to alter the one-share-one-vote rule and the proportionate relationship between control and ownership (Jewartowski and Kaldonski, 2015). The use of CEM mechanisms by family-controlled firms has been documented in several studies (Claessens et al. (2000), Faccio and Lang (2002) and Villalonga and Amit (2009)).

The principal motive for corporate capital structure decisions in these firms has also been the focus of a number of studies. Notably, Ellul (2010) investigated an international sample of 3,608 companies across 36 countries, comprised of non-family and family-controlled firms. The study compared leverage between the two groups and found a relatively higher leverage for family-controlled firms, especially in regions of weaker protection for minority shareholders. His findings also revealed that, when a family’s stake in a corporation is sufficiently high as to ensure control, or when CEMs are used, family-owned firms tend to use less debt. According to the author, the results support the important role of control motivations in corporate capital structure decisions. Additionally, Hagelin et al. (2006) reached similar conclusions in a sample of Swedish companies. The authors hypothesized that family-controlled firms use dual class share structure, as an alternative to debt, in order to maintain control and reduce the family’s portfolio risk. And more recently, using an unbalanced panel of 105 firms listed on the Warsaw Stock exchange (over the 2006 – 2010 period), Jewartowski and Kaldonski (2015) investigated capital structure decisions of family firms when dual class shares are restricted. The authors hypothesized that, in this context, founders of family firms may use debt in order to maintain corporate control. Together, these findings suggested that

financial decisions of dual class family firms are driven by control motivations, but also by country-specific regulations regarding security design (Morck et al., 2004).

However, the empirical evidence on the relative performance of family-controlled dual class firms versus family-owned firms with a single class of shares appears to be inconclusive. For instance, King and Santor (2008) found that family-owned Canadian firms with a one-share-one-vote capital structure showed similar market performance (as measured by Tobin's q ratios) than other firms, while showing “superior accounting performance based on ROA,” and were more leveraged (higher debt-to-total assets) over the 1998 – 2005 period – representing results that corroborated prior findings from U.S. studies (Claessens et al. (2000) and Anderson and Reeb (2003a)). On the other hand, the authors found that although family-owned dual class firms showed similar ROA and financial leverage than other firms, these shares traded 17 per cent lower, on average, consistent with other U.S. and international studies (Daniels and Halpern (1995) and Claessens et al. (2000)). These studies were consistent with the hypothesis that firms that exhibit a capital structure that creates a wedge between cash-flow rights and control rights are valued at a discount due to a higher risk of expropriation (Gompers et al., 2010).

More recently, Spizzirri and Fullbrook (2013) investigated “the impact of family control on the share price performance of large Canadian publicly-listed firms” (Spizzirri and Fullbrook, 2013, p.1) between 1998 and 2012. Specifically, the authors studied the performance of 23 family-controlled firms listed on the TSX over the 15-year period, 18 of which were dual class firms. Share price performance for 435 firms listed on the S&P/TSX Composite Index for all or part of the period of interest was also evaluated. The findings revealed that family-controlled firms with a dual class share structure outperformed non-family firms with respective 8.8 per cent and 6.1 per cent cumulative average growth rates (CAGR) over the period. They also found that family-controlled dual class firms outperformed those with a single class of equity (with a CAGR of 5.1 per cent). Spizzirri and Fulbrook concluded “family firms often appear best able to create value for their shareholders when they choose not to adhere to typical best practices in share structure and independence” (Spizzirri and Fulbrook, 2013, p.2). Yet,

no recent studies have been found in the literature review that specifically investigated the voting premium or control value of Canadian family-owned firms with a dual class equity structure.



## Chapter 3

# Model and Hypotheses

As highlighted in Chapter 2, the use of dual class equity structure remains a going concern for regulators as well as investors. Building on the vast body of knowledge that exists, the current paper aims to provide more recent as well as historical information on the control value associated with the use of such structure by Canadian firms. In the first Section of this Chapter, the model used to measure corporate control valuation is explained, whereas Section 3.2 introduces the main hypotheses advanced.

### 3.1. A Model for Corporate Control Valuation<sup>14</sup>

The model used for this study is rooted in the theoretical model originally advanced by Grossman and Hart (1988) and Harris and Raviv (1988), which formally connected the price of votes and the value associated with the private benefits of control. Several studies further extended this framework for dual class firms, including Zingales (1994, 1995), Rydqvist (1996) and Nenova (2001) – the latter being the main model for this paper. The theoretical framework, key assumptions and equations of this model are presented below.

#### *Competitive Market for Corporate Control*

As previously noted, the existence of dual class firms allows for the observation – through market measures – of the benefits that controlling shareholders derive from the value of corporations. Assuming there is a positive probability of a control-contest in the future, in a competitive market for corporate control, a prospective control contestant would be willing to pay a “premium” for the marginal voting shares (Nenova, 2001 & 2003). In this expectation, shares have been argued to trade at a “premium” over their

<sup>14</sup> Section 3.1 effectively summarizes Nenova (2001), Appendix A on pages 157-160 and Nenova (2003). Additionally, other sources referenced therein were consulted to deepen the understanding of the model for corporate control valuation.

security value that reflects their voting power. However, such voting premium can only be observed in firms with more than one class of shares that differ only in their voting rights (Nenova, 2001 & 2003). Defining control as the ownership of enough voting power to take decisions on important company matters (generalized to be 50% of the votes), Nenova (2001) built upon the previous work that examined the marginal vote value and created a measure for control value.

### **Dual Class Security Voting Structure**

As in Zingales (1995) and Rydqvist (1993), Nenova's model assumes there are two classes of shares: M (for multiple or superior voting class) and L (for limited voting class), with 1 and  $k < 1$  votes per share, respectively. The voting power of the M class is normalized to 1. Let  $N_M$  and  $N_L$  represent the number of shares outstanding for each class,  $y_M$  and  $y_L$  be the verifiable cash flows per shares and  $p_M$  and  $p_L$  be the respective prices for each class. The differential in cash flow between the two classes is defined as follows:  $\Delta y \equiv y_M - y_L$ .

### **Private Benefits of Control Valuation**

Assuming there are two parties in the contest for control of any given corporation ( $n=1, 2$ ), then  $Z_1$  and  $Z_2$  represent the present value of the gross private benefits the contestants may excerpt from the firm's value (i.e. not available to all other shareholders), such that  $firm\ value \equiv N_M P_M + N_L P_L \geq Z_{1,2}$ .  $Z$  accrues to the controlling shareholder in addition to the verifiable cash flows going to all shareholders, and the two contestants are assumed to be as competent. The model further accounts for the inefficiency inherent to the extraction of private benefits  $Z$  by introducing related costs that are strictly positive and related to the minority investor protection provisions in effect in the institutional, legal and corporate charter environment (with stronger protection raising the costs associated with the diversion of firm value). Accounting for these environmental factors, the cost function is expressed as  $i(Z, \gamma) = \gamma Z$ ,  $0 < \gamma < 1$ , where a  $\gamma$  closer to 1 suggests stricter investor protection laws/charters better enforcement. Given that there are costs associated with blockholding, including the cost of participating in a control contest, of financing the control-block and of bearing

idiosyncratic risks from holding a large stake in the company, a block-holding cost function is introduced:  $C_{1,2} = c(\eta_M, \eta_L)$ , where  $\eta$  represents the number of M and L shares held (Nenova, 2001).

### ***Marginal Vote Value***

A key assumption in deriving the value of a marginal vote is that “value” can only be derived when the marginal vote is sold to a control contestant. That is, marginal vote held by dispersed shareholders does not confer “control value” to their owner (due to coordination issues and information asymmetry) (Nenova, 2001). As such, a marginal voting share will be valued higher than its verifiable cash flow rights (i.e. at a premium) given that:

1. Control is valuable to a large shareholder; and
2. There is a positive probability that this large shareholder will demand marginal votes to attain control.

In other words, the marginal vote has to be sold to a shareholder who values control.

Hence, at any time  $t$ , the value of a marginal vote  $V$  equals the expected discounted equilibrium market value of a vote at the time of a control contest, with the expectation being taken with respect to the probability  $\pi$  of a differentiated bid-control contest (vote actually sold).

Once derived, the equilibrium value of a marginal vote in a control contest  $V^*$  is found to equal the net benefits from control per vote in a control-block, as presented on the right-hand side of the following equation:

$$V \equiv \frac{P_M - P_L - \Delta y}{1 - k} = E[V^*] = \pi^* \left[ \frac{Z_2 - \gamma Z_2 - C_2}{(N_M + kN_L)/2} \right]$$

The left-hand side of this equation represents the value of the marginal vote  $V$ , which equals  $V^*$  multiplied by the probability  $\pi$  of actually selling that vote in a control contest<sup>15</sup>.

### ***Control Value Measure***

Nenova (2001) however argued that the value of marginal vote presented in the above equation is not informative in comparing values across firms and countries as marginal vote value is linked to the concentration of voting power in the different multiple voting shares, the relative number of shares in each class and on the respective size of a corporation. The model developed by Nenova differed from previous ones by accounting for block-control (i.e. measuring total value of half of the votes) and scaling vote value by the market capitalization of the firm. The author suggested that not making these adjustments would be misleading in that focus is put on mechanical determinants of the value of control (e.g. number of M shares issued) as opposed to “substantial” determinants. The resulting equation measuring the total value of control-block (CBV) as a share of firm market value can be expressed as follows:

$$\begin{aligned} CBV &= \frac{[P_M - P_L]}{1 - k} * \frac{[N_M + N_L k]/2}{N_M P_M + N_L P_L} \\ &= \frac{\pi(1 - \gamma)Z_2}{N_M P_M + N_L P_L} - \frac{\pi C_2}{N_M P_M + N_L P_L} + \frac{\Delta y}{1 - k} * \frac{[N_M + N_L k]/2}{N_M P_M + N_L P_L} \end{aligned}$$

On the left-hand side of the above equation, the proxy measure for control value is expressed as the product of two terms: 1) the value of a single vote prior to any subtraction of the differential benefits between the two classes of equity (i.e.  $\Delta y/(1 - k)$ , which is taken to the right-hand side of the equation) and 2) half the total number of votes (i.e.  $[N_M + N_L k]/2$ ) and divided by the firm’s market value (i.e.  $N_M P_M + N_L P_L$ ).

On the right-hand side of the equation, the first and second terms correspond to the control value measure (i.e. expected control benefits as a share of the firm market value) and the block-holding costs (as a share of firm market value). The control value is

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<sup>15</sup> Note that vote value was derived in the case where contestant 1 won the control contest. As presented in Grossman and Hart (1988) and Harris and Raviv (1988), the contestant that expects the highest private benefits of control is said to win.

negatively affected by the quality of the legal environment (protecting shareholders' rights)  $\gamma$ , the costs associated with large block holding and financing  $C_2$  and the excess benefits of the limited voting security class over the multiple voting class  $-\Delta y$  (Nenova, 2001).

### ***The Impact of Coattail Provisions on the Model***

In the model presented above, the probability  $\pi$  that a marginal vote be sold to a control contestant is assumed to be exogenous. However, as noted by Nenova (2001), a country's regulations can impact the probability of control change if contestants are required to share the premium with all shareholders (such as in the case of coattail provisions), thereby lowering the private benefits that the contestant can extract. Amoako-Adu and Smith (2001) also argued how coattail provisions may ultimately impact the takeover screening process and the need for monitoring by noncontrolling shareholders. Yet, the distinctive feature of the Canadian market, namely the non-retroactive and non-standardized coattail provision requirement for dual class firms listed on the TSX, could potentially alter this relationship in some level.

## **3.2. Time Behaviour of Vote Value**

In her thesis, Nenova (2001) provided an extensive cross-country evaluation of the value of corporate control-block votes, using a sample of 661 dual class firms across 18 different countries (data from 1997). While the author noted that the relationship examined between control-block vote value and the legal and ownership structure determinants assumed the overall time stability of regulations and block-holdings, Nenova also alluded to the limited data available on such stability. From a country-level analysis, Megginson (1990) reported a marginal voting premium that was stable for dual class firms in the United Kingdom over the 1955 – 1982 period of examination (sample of 152 firms). However, Partch (1987) and Rydqvist (1996) showed that at the firm-level, marginal vote value fluctuated around the time of a control contest, increasing in the prospect of a higher probability of individual investors realizing the “value” associated with their votes. Smith and Amoako-Adu (1995) also found that around the time of the TSX regulatory reform of 1987 – requiring coattail

provisions for all listed dual class firms – the average marginal vote value of dual class firms increased from 4.2 per cent (between 1981 and 1986) to 6.4 per cent (between 1988 to 1992). And as noted in Chapter 2, Hong (2013) found that the voting premium of adopting firms decreased by 8 per cent on average after the mandatory IFRS adoption.

Additionally, the probability of a takeover is linked to the stability of the controlling coalitions as well as the state of the economy (Nenova, 2001). As such, the magnitude of marginal vote premium can be expected to change with the state of the economy, increasing in periods of heightened stress (like economic downturn) and decreasing in periods of growth and calm. While some studies have looked at the time-behaviour of the marginal vote premium, these studies principally looked at data prior to the recent financial and economic crisis. The literature review did not yield any study that sought to evaluate the stability of the control-block vote value developed by Nenova (2001) over time.

### **3.3. Main Hypotheses**

In light of the recent scandals and rising concerns for sound corporate governance and effective protection of shareholders' rights, the level of corporate monitoring as to minimize the risk of managerial entrenchment is postulated to have increased over the past decade. In this context, the perceived benefits associated with a dual class share structure, from a managerial entrenchment standpoint would be expected to have decreased over time. The main motivation for maintaining or issuing restricted voting shares would have returned to maintaining control of closely-held/family-owned businesses, for instance. Nonetheless, the use of dual class share structure remains a topic of interest and concerns for Canadian regulators as well as investors. The current paper therefore aims to shed light on the evolution of the control-block value associated with such equity structure in Canada. More specifically, the main hypotheses for this study are as follows:

**Hypothesis 1:** A decrease in the total number of firms with a dual class share structure listed on Canadian exchanges would be observed over the period of observation.

**Hypothesis 2:** The voting premium associated with the SVS and the value of control are both hypothesized to have decreased over the period. One would further expect an increase in control-block value in times of economic downturn or heightened market uncertainty.

**Hypothesis 3:** The control-block value is expected to be lower in family-controlled dual class firms compared to non-family-controlled firms.

Ultimately, this thesis will investigate whether the voting premium and control-block determinants previously identified in the literature and used in Nenova's doctoral thesis still account for the observed premium associated with the ownership of superior voting shares.



## **Chapter 4**

# **Data and Methodology**

The first two sections of this Chapter present the approach used in data collection, which follows closely the methodology used by Nenova (2001). The independent, determinant and characteristic variables investigated in the regression and descriptive analyses of this paper are then described in Sections 4.3 and 4.4. In line with the objectives and main hypotheses of this paper, a few adjustments have been proposed, mostly taking into consideration the Canadian time-behaviour perspective of this study versus the cross-country assessment Nenova originally conducted.

### **4.1. Sample and Data Sources**

The sample includes all dual class firms listed on Canadian exchanges and covered by DATASTREAM or CFMRC/TSX Databases. DATASTREAM is a financial and macroeconomic data platform covering historical information for equities, stock market indices and company fundamentals, amongst others, across 175 countries and 60 markets globally. The Canadian Financial Markets Research Centre (CFMRC) Summary Information Database provides daily and monthly historical market data and other historical information (such as dividends, stock splits, etc.) for securities traded on the TSX. Potential dual class firms were first identified using two different identifiers from DATASTREAM. Security-voting structure information found on SEDAR or on companies' website was then used to identify Canadian firms that met the criteria for dual class structure (defined in 4.2). SEDAR is the official website that contains most public securities documents and information filed by the issuers with the Canadian Securities Administrators (or "CSA"). A total of 61 firms were identified for which all required financial or other information was available over the period for which dual class equity structure existed (for part of or the full period).

## 4.2. Dual Class Firm Definition

Following Nenova (2001 & 2003), dual class firms for the current study must comply with the following specifications:

- $\geq 2$  publicly traded share classes, with unequal voting per cash flow rights;
- Both classes are listed and traded over the period of analysis, ranging from January 1998 to December 2014, depending on the companies;
- Limited-voting class cannot be converted into multiple voting class;
- Neither class may receive fixed dividend independently of the other; and
- Neither class is redeemable or callable at the option of the firm at a preset price (debt-like). (Nenova, 2003, p.332)

## 4.3. Control Value as Dependent Variable<sup>16</sup>

The control-block value (CBV) measure was calculated based on monthly share prices using the following equation (from Nenova, 2001):

$$CBV = \frac{[P_M - P_L]}{1 - k} * \frac{[N_M + N_L k]/2}{N_M P_M + N_L P_L}$$

It can be “interpreted as a lower bound” value of corporate control benefits (Nenova, 2003, p.325).

## 4.4. Determinants of Control Value/Voting Premium

Several studies have evaluated the determinants of dual class voting premium. Following Nenova (2001), determinants of control value for the current paper focus on the strictness of the legal/investor environment, on the possibility of a control change, on the costs associated with holding and financing a control block, and on the excess security value of limited- over multiple-voting shares, as detailed below<sup>17</sup> and summarized in Table 4.1.

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<sup>16</sup> Refer to Section 3.1 of this thesis for a description of how the variable was derived.

<sup>17</sup> Refer to Nenova (2001) for a full discussion of each determinant variable.

**Table 4.1. Summary of Determinant Variables and Impact on Control Value<sup>18</sup>**

Summary of the determinant variables and their expected impact on the dependent variables, the value of control are presented. As in Nenova (2001, 2003), determinant variables can be grouped into four broad categories: the strictness of the legal and/or investor protection environment, the possibility of a change in control, the cost of holding and financing a control block and security-value differences between the two share classes.

Determinant Variable	Variable Description	Expected Impact Sign
<b>Strictness of Legal/Investor Environment</b>		
Rule of Law ( <i>law</i> )	Proxy for law enforcement developed by La Porta et al (1998). In Nenova (2001), the assessment of the law and order tradition in the country produced by the country risk-rating agency <i>International Country Risk</i> (ICR) was used and rescaled 0 to 1, with higher values indicating stricter rule of law. The metric reported in this study was the Rule of Law index published annually in the IMD Yearbook. ( <b>country level variable</b> )	Negative
Investor protection ( <i>invp</i> )	Average of 6 indicator variables: (1) 1 if shareholders can mail their proxy votes, (2) 1 if the shares are blocked before a general shareholder meeting, (3) 1 if cumulative voting is permitted by law, (4) 1 if oppressed minority provisions are incorporated in the law, (5) 1 if shareholders have a preemptive right over future issues, and (6) 1 if the vote percentage required to convene an extraordinary shareholder meeting is at or below 10%. Higher values indicate a better protection of investors' right. ( <b>mostly country level indicators</b> )	Negative
Takeover regulations ( <i>toreg</i> )	Average of 3 indicator variables of investor protection during a corporate contest: (1) 1 if the legal code requires a control contestant to offer all classes the same tender price, zero otherwise; (2) 1 if the legal code requires a buyer of a large or majority block to pay minority shareholders the same price as for the block shares by share class, zero otherwise; and (3) 1 minus the level of ownership at which a dominant vote-owner is legally required to make an open market bid for all shares, zero is there is no such provision in the law. Once again, higher values indicate stricter takeover law and increased investor protection during a corporate contest. ( <b>country level indicators</b> )	Negative
Charter provisions ( <i>charter</i> )	Aggregate of six charter provisions that concentrate power in the hands of dominant shareholders: (1) golden shares, i.e. special decision-making rights of dominant shareholders; (2) coattails, i.e. a provision that the limited-voting shares become convertible into multiple-voting at the time of a control change; (3) poison pills, i.e. provisions that make it costly for outsiders to purchase large stakes; (4) voting caps, i.e. an upper limit on the votes that a single shareholder can cast; (5) the right of the Board of Directors to limit transfer of shares; and (6) the right of limited-voting shares to attain full voting power in case of dividend nonpayment, sale of assets, or excessive concentration of voting power to cash-flow rights. The aggregate is rescaled from 0 to 1, with higher values indicating lower power concentration with the controlling party. ( <b>company level indicators</b> )	Negative

<sup>18</sup> The table essentially summarizes the determinants from the model put forth by Nenova in her thesis (2001) and later publication (2003), and also presented in table format in Nenova (2001, Table 2 on p.332-333). Most of the wording in this table was transferred verbatim from Nenova (2001 & 2003) given that the definitions used extremely concise wording.

Determinant Variable	Variable Description	Expected Impact Sign
<b>Possibility of a Change in Control (company level variables)</b>		
Relative Shapley value ( <i>RSV</i> )	The Shapley value solution of a voting game reflects the payoff or value of participating players, measured as the extent to which each player is pivotal to the voted decision. A higher cumulative Shapley value of all dispersed shares (i.e. lower ownership concentration) increases the likelihood of a control contest. The measure is from 0 (majority controlled firm) to 1 (widely held firm). Following Zyngales (1994), a Relative Shapley Value is obtained by dividing the Shapley value of votes held by small shareholders (those owning less than 5 per cent of the votes) by the fraction of votes they hold. The oceanic Shapley value <sup>19</sup> measures were obtained using the algorithms developed by professors Dennis Leech (University of Warwick) and Robert Leech (Imperial College of London) <sup>20</sup> .	Positive
Herfindahl Index of largest voting stakes ( <i>hi</i> )	Calculated as the sum of the square of the dominant vote owners voting stake.	Positive
Voting stake of the largest dominant vote-owners ( <i>SH<sub>1</sub></i> ) or ( <i>Top5_SH</i> )	The voting stake of the largest or several dominant vote owners (top 5).	Positive
<b>Costs of Holding and Financing a Control Block (company level variables)</b>		
Relative firm market value (firm size) ( <i>firmsz</i> )	Natural logarithm of the firm market value divided by the Canadian stock market capitalization, to adjust for companies that are generally larger and with a greater ability to attract capital in some countries. (This adjustment was introduced by Nenova to allow for cross-country comparison and was kept for comparability)	Negative
<b>Excess Security Value of Limited- Over Multiple-Voting Shares (company level variables)</b>		
Excess dividend of limited-voting shares (Dividend ratio) ( <i>divratio</i> )	Excess dividend payment to a limited- over a multiple-voting share, scaled by the total dividend to a limited-voting share	Negative
Dividend dummy 1 ( <i>DD1</i> )	Indicator for guaranteed minimum limited-voting dividend	Negative
Dividend dummy 2 ( <i>DD2</i> )	Indicator for cumulative dividend for the limited-voting class	Negative
Dividend dummy 3 ( <i>DD3</i> )	Indicator for preference for the limited-voting class	Negative
Dividend dummy 4 ( <i>DD4</i> )	Indicator for convertibility of multiple into limited-voting shares	Positive
Dividend dummy 5 ( <i>DD5</i> )	Indicator for higher registration cost of the multiple relative to the limited-voting class	Negative
Difference in turnover of classes (liquidity differences) ( <i>diffturn</i> )	Turnover is the ratio of the average daily trading volume of the class over all business days to the number of shares outstanding for the month. The variable consists of the natural logarithm of the limited-voting class turnover over multiple-voting class turnover	Negative

Sources: Nenova (2001, 2003), Zyngales (1994)

<sup>19</sup> The oceanic Shapley Value follows the original work from Milnor and Shapley (1978).

<sup>20</sup> The Shapley-Shubik index was calculated for an “oceanic game” using the ssocean computer algorithm available online at: <http://homepages.warwick.ac.uk/~ecaae/>.

### ***Strictness of the Legal Environment***

Generally, the strictness of a country's legal environment and the laws in place to protect shareholders are expected to increase the cost associated with the extraction of private benefits due to the probability of incurring a lawsuit, as well as monetary and reputation loss. Specifically, the overall quality of law enforcement, the extent of shareholders' protection, the quality of takeover laws and regulations and the extent to which corporate charter provisions regulate the power that can be concentrated in dominant shareholders (Nenova, 2001).

While data was collected on Canadian takeover regulations and investor protection laws (refer to Investor Protection index and Takeover Regulations index in Table 4.1.) as in Nenova (2001), little to no variations were observed over the period of interest, which led to some omission of these variables in later cross-sectional time-series regressions. The Rule of Law index, a country-level variable, was also omitted due collinearity in later regressions (values are documented in the next Chapter). As such, the Charter Provision index was the main indicator of investor protection for the current study.

### ***Probability of a Control Contest***

As discussed in Zingales (1994), an inverse relationship exists between the ownership concentration of a firm and the probability of a control contest. However, the relationship may not necessarily be a linear one since greater vote ownership is likely to increase the bargaining power of existing shareholders (who may ask for higher premium). A number of measures have been documented as proxy for the probability of a control contest<sup>21</sup>. The first one is the voting stake of the largest or several dominant vote-owners. However, this measure does not account for the number, composition and interactions amongst the different voting shareholders. Another commonly used measure is the Herfindahl index, calculated as the sum of the squared voting share of principal shareholders. While the HHI ownership measure controls for the number and composition of voting shareholders, it does not account for possible interactions

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<sup>21</sup> For a review of the different measures of ownership concentration available, refer to Overland, C. et al. (2012).

amongst players; That is, the possibility of any two or more shareholders to form a winning coalition (Nenova (2001) and Overland et al. (2012)).

Originally, the Shapley-Shubik (SS) index was developed to account for the possibility of interactions amongst players (Shapley and Shubik, 1954)<sup>22</sup>. More specifically, the SS index measures the probability of any given individual player to affect the decision making in a voting game, while considering its voting share and that of other shareholders – the *a priori* probability that his vote is pivotal. Central to this measure is that it emphasizes that the relationship between a shareholder's ownership and his power is not linear. In a game with n total players, the SS value of any given player is calculated as the number of times his vote is pivotal over the total number of possible voting sequence ( $n!$ ). The following simplified example illustrating the measure can be found in many literatures.

- Game with 5 players with voting shares 40%, 35%, 20%, 10% and 5%;
- There are  $5! = 120$  possible sequences for players to vote;
- The corresponding SS values are 0.450, 0.200, 0.116, and 0.033.

That is, in 54 out of the 120 alternative sequences (45%) the largest player will be pivotal – which is actually larger than its actual voting share (Overland et al., 2012).

However, the oceanic Shapley value of all dispersed shareholders developed by Milnor and Shapley (1978) offers a more complete proxy measure of control-contest probability, by correcting for interactions between voting shareholders (in addition to considering the other aspects measured by the other two proxies)<sup>23</sup>. The relative Shapley value (RSV) of votes held by small shareholders was advanced by Zyngales (1994) and is used as proxy of the probability of a change in control in the current study. It is the

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<sup>22</sup> Banzhaf (1965) independently developed a similar index around the same time as Shapley and Shubik. The index measures whether a player is critical (i.e. order in which voters cast their vote does not matter) rather than pivotal. The current study followed previous literature on voting premium and bloc value analysis, using the oceanic shapley-shubik value of small shareholders. However, an alternative would have been the Banzhaf index measure for large voting games, the methods of which were developed by Owen (1972, 1975) and further elaborated by Leech (2003).

<sup>23</sup> For a simplified understanding of the oceanic Shapley-Shubik index calculation as well as a detailed critique of this measure, refer to: Leech, D. (2001). An Empirical Comparison of the Performance of Classical Power Indices [online]. London: LSE Research Online.

oceanic Shapley value of all small shareholders divided by the fraction of votes held by these shareholders.

### ***Cost of Holding and Financing a Control Block***

The value of a control-block vote is also thought to be influenced by the costs associated with participating in a contest for control, of financing a large control-block and of bearing the intrinsic risks of holding a large part of a company. In the literature, these costs are said to be directly linked with a firm's market capitalization, the proxy of firm size (Nenova, 2001).

### ***Differences in Dividends between the two Classes of Shares***

Security characteristics can further influence the control value. In some cases, restricted-voting shares may be entitled to higher dividends than the superior-voting shares, which would lower the price difference between the two compared to the case where, for the same voting structure, the two classes receive equal dividends. The different metrics used to capture these differences in dividends are described in Table 4.1 (Nenova, 2001).

### ***Liquidity Differences between the two Classes of Shares***

Securities can further differentiate themselves according to their respective liquidity; That is, the extent to which shares can be rapidly traded. Specifically, limited-voting shares that display higher liquidity can bias downward the control value. The log-difference in average daily turnover ratios between the two classes of shares can be used to measure this determinant, as presented in Table 4.1 (Nenova, 2001).

## 4.5. Other Variable Considerations

Other sample characteristics that were reported in Nenova (2001) included the identity of the dominant vote-owners and their participation in the firm supervision and management, as summarized in the Table 4.2:

**Table 4.2. Characteristic Variables of Interest**

Summary of other sample characteristic variables related to the identity of the dominant vote-holders and the participation of the dominant owner in firms supervision and management.

Variable	Definition	Measure/ Specification
<b>Identity of the Dominant Vote-Holders*</b>		
<i>Widely-Held</i>	Companies with no owner (or ownership chain) of 20% or more of the votes, or with a widely held entity at the end of a 20% chain, are considered widely held. (Nenova, 2001)	1 if yes; 0 if not.
<i>Government</i>	The ultimate controller of the company is the government.	1 if yes; 0 if not.
<i>Family</i>	A family-owned business may be defined as any business in which two or more family members are involved and the majority of ownership or control lies within a family.	1 if yes; 0 if not.
<i>Foreign Entity</i>	The ultimate controller of the company is a foreign entity. Foreign owners are defined to be ultimate owners whose business is mainly in a country other than the country of listing of the firm. (Nenova, 2001)	1 if yes; 0 if not.
<b>Participation of the Dominant Owner in Firm Supervision and Management</b>		
<i>Member of the Board</i>	(At least) One of the principal/dominant vote-holder is a member of the Board of Directors (BoD).	1 if yes; 0 if not.
<i>CEO</i>	One of the principal/dominant vote-holder is the Chief Executive Officer (CEO) of the Company.	1 if yes; 0 if not.
<i>Member of the Board or CEO</i>	Principal/dominant vote-holder(s) of the Company is (are) members of the BoD and the CEO.	1 if yes; 0 if not.

\*For the largest block-holder, as with Nenova (2001) a 20% chain of ownership is traced to the ultimate owner (in a manner identical to Laporta et al. (1999)).\*

Additional variables that were not considered in the model proposed by Nenova (2001) include industry dummies for the Broadcasting, Telecommunication and Energy sectors. As previously noted, the Canadian legislative and regulatory environments have influenced corporate structure in Canada (i.e. into adopting dual class share structure) and particular sectors. While other “target” sectors (such as airlines) may have been adopting dual class equity structure, due to the conditions set forth by Nenova’s model for qualifying dual class firms, these have been excluded from the final sample. The industry dummy variables would determine whether the historical restriction on non-Canadian ownership in these sectors has not only impacted the capital structure, but also the control-block value.

## **Chapter 5**

# **Testing and Results**

The first Section of Chapter 5 presents relevant characteristics of the collected sample of Canadian dual class firms. Regression results and key findings are discussed in Section 5.2, followed by considerations for further research in Section 5.3.

### **5.1. Sample Characteristics**

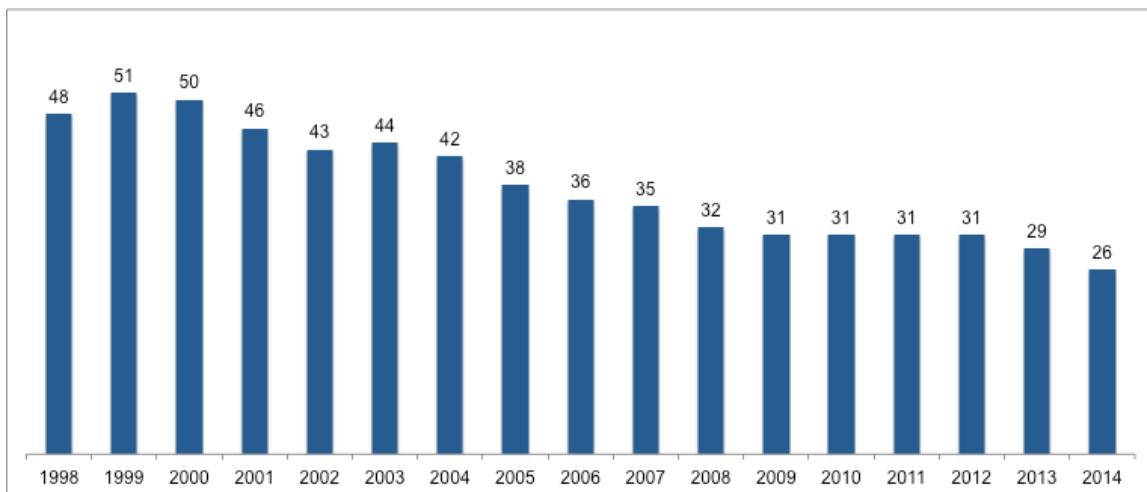
A total of 61 Canadian companies with a dual class share structure for which required data was available have been identified over the 1998 – 2014 period. Figure 5.1 shows that the total number of dual class firms (excluding those that do not list and trade both classes of shares on an exchange or otherwise excluded for reasons set forth in the Data and Methodology chapter) has decreased from 48 in 1998 to 26 in 2014, representing a 3.5 per cent decrease per year on average (CAGR) and a total decrease of 45.8 per cent. Only 19 companies (or 31.1 per cent of the sample) have data for the complete period of interest.

Mergers and acquisitions represented the principal reason why companies did not have a dual class equity structure on the full of interest in 42.9 per cent of the cases, whereas capital structure consolidation (or unification) was the principal reason in 19.0 per cent of the cases.

Looking at the difference in voting power between SVS and RVS for the complete sample, 52.5 per cent (32) of the dual class firms had a voting ratio of 1:0 and 29.5 per cent (18) had a voting ratio of 10:1. However, voting ratios of 20:1 (3), 25:1 (2), 100:1 (3) and 500:1 (1) were also observed in the sample.

**Figure 5.1. Total Sample Count between 1998 and 2014**

Total number of dual class firms between 1998 and 2014 that complied with the following specifications: ≥2 publicly traded share classes with unequal voting per cash flow right; Both classes are listed and traded over the period of analysis; Limited-voting class cannot be converted into multiple voting class; Neither class may receive fixed dividend independently of the other; and, Neither class is redeemable or callable at the option of the firm at a present price.



From an industry classification perspective, approximately 40 per cent of the dual class firms operated in the Information, Resources or Utilities industries (corresponding to the higher level NAICS codes 51, 21 and 22, respectively), with close to 25 per cent operating in the Information industry.

Table 5.1. summarizes key characteristics of the sample ownership structure over the 1998 – 2014 period of observation and for individual years. On average, the largest shareholder held 54.2 per cent of voting power over the full period, whereas the average cumulative stake of the five largest shareholders was 67.4 per cent. These figures somewhat differ from those reported in Nenova (2001): the mean (standard deviation) and median values of the largest owner in Canada in 1997 were 49.7 (0.2286) and 47.2 per cent, and for the five largest owners, these values were 53.5 (0.2337) and 54.7 per cent, respectively<sup>24</sup>. The Herfindahl index of the 5 largest shareholders and the relative Shapley value of all small shareholders averaged lower values, reflecting the non-linearity between ownership and concentration, with 36.4 and 30.7 per cent averages.

<sup>24</sup> The mean stake of the largest shareholder for older Canadian studies was 60 per cent - refer to Nenova (2001); Robinson et al (1995); and Smith Amoako-Adu (1995).

The RSV average for the full period is in line with that reported in Nenova (2001) in 1997 (0.31).

**Table 5.1. Sample Ownership Characteristics from 1998 to 2014**

Ownership data for the sample firms (N=61) were collected from annual company filings from SEDAR or company websites. Annual averages of firms' largest single shareholder, top 5 largest shareholders, Herfindahl index of the top 5 shareholders and Shapley-Shubik value of all small shareholders are reported below for each year, as well as for the full period from 1998 to 2014. The Shapley-Shubik values were calculated as detailed in the methodology section of this paper. Minimum values are not displayed as they all equal 0.

Year	N	Largest Shareholder Average	Top 5 Shareholders Average	Herfindhal Index Average	Relative Shapley Value Average
1998	48	0.492010	0.638049	0.320202	0.421908
1999	51	0.500063	0.644637	0.315175	0.357799
2000	50	0.518583	0.653396	0.332681	0.343851
2001	46	0.549785	0.675219	0.366235	0.285885
2002	43	0.569862	0.694651	0.384528	0.273597
2003	44	0.563480	0.691525	0.373715	0.251021
2004	42	0.569799	0.685674	0.380560	0.239735
2005	38	0.549469	0.664162	0.364326	0.258606
2006	36	0.551841	0.669555	0.371568	0.273315
2007	35	0.542428	0.656233	0.359765	0.269898
2008	32	0.542612	0.663167	0.366628	0.301057
2009	31	0.540028	0.672022	0.370030	0.315667
2010	31	0.541322	0.678688	0.374034	0.316638
2011	31	0.541357	0.689528	0.378355	0.331134
2012	31	0.550813	0.705835	0.395836	0.327856
2013	29	0.556856	0.706450	0.390727	0.318277
2014	26	0.570799	0.723668	0.409002	0.321520
<b>1998 - 2014</b>					
Average	61	0.541974	0.674364	0.364071	0.307589
Std. Deviation	61	0.220346	0.187448	0.225742	0.415660
Median	61	0.539100	0.685588	0.319965	0.000000
Max	61	0.947000	1.000000	0.896809	1.369246

Of the 61 dual class firms, nearly half (31) were classified as family-controlled. Considering only firms present on the full period, this number decreased to 14, representing, however, 73.7 per cent of the sub-sample. Over the 1998 – 2014 period, only 8 dual class firms were at some point<sup>25</sup> classified as widely held, 3 had a principal foreign shareholder, and 2 had government as a principal shareholder, accounting for 13.1, 4.9 and 3.3 per cent of the sample firms, respectively. Nenova (2001) reported that 89 per cent of its Canadian sample (N=64) in 1997 were family-owned, versus 9, 5 and 2 per cent were widely-held, foreign-entity-owned and government-owned, respectively.

<sup>25</sup> That is, generally not over the full time period, especially for government/foreign owners, which generally only accounted for a few years as owners in each company.

Looking more closely into family-dominated firms, the extent to which the controlling family members are involved in the supervision and management of the firm was assessed using the two measures used in Nenova (2001); That is, whether the controlling individual or members of his family are at the head of the management of the company (holding the position of Chief Executive Officer (CEO), Managing Director or President) and whether any of them sit on the Board of Director (holding an executive or non-executive position). As shown in the Table 5.2, all family-dominated firms had at least a member that sat on the Board of Director over the period of analysis and, in 42 to 59 per cent of the cases, one of the family members acted as CEO over the period of analysis<sup>26</sup>.

**Table 5.2. Participation of the Dominant Owner in Firm Supervision and Management from 1998 to 2014**

The percentage of family-controlled firms ( $nfam=31$  over 1998 - 2014) where (at least two) members of the controlling family are involved in the management or supervision of the firm was calculated for each year over the 1998 – 2014 period. Column 3 presents the percentage of such firms where the controlling individual or members of his family are at the head of the management of the company, holding the CEO (or Managing Director or President) position. Column 4 presents the percentage of firms where family members sit on the Board of Director (or “the Board”) or the equivalent supervisory body.

Year	nfam	Member of the Board	CEO
1998	28	100%	50%
1999	29	100%	55%
2000	29	100%	59%
2001	28	100%	57%
2002	27	100%	52%
2003	27	100%	48%
2004	26	100%	42%
2005	23	100%	43%
2006	22	100%	45%
2007	20	100%	50%
2008	19	100%	53%
2009	19	100%	42%
2010	19	100%	42%
2011	20	100%	45%
2012	20	100%	45%
2013	19	100%	47%
2014	17	100%	47%

As reported in Nenova (2001), the mandatory offer threshold for Canada is 20 per cent, control contestants are required to offer all classes the same tender price and buyers of a large or majority block must pay minority shareholders the same price as for

<sup>26</sup> Out of the 57 Canadian family-owned firms (in 1997) evaluated in Nenova (2001), the author reported that 93, 75 and 96 per cent of these firms had a member of the family that sat on the Board, managed the company (CEO) and either supervised or managed the firm, respectively.

the block shares. Together, these three indicators form the Takeover Rule index for Canada, which was constant over the period of analysis with a value of 0.933<sup>27</sup>.

Given that the coattail provision requirement from the TSX was non-retroactive, the number of dual class firms with coattail provisions is reported for each year over the period of analysis in the Table 5.3.

**Table 5.3. Sample Power-Concentrating Charter Provisions from 1998 to 2014**

Charter Provisions index for the sample firms (N=61) were calculated using data collected from annual company filings from SEDAR or company websites. Charter Provisions index represent the aggregate of six provisions concentrating power in the hands of dominant shareholders. The index is rescaled from 0 to 1, with higher values indicating less power concentration with the controlling shareholders. Average values for the index are presented for each year and for the 1998 – 2014 period. The number of firms with coattail provisions is also provided given the non-retroactive requirement for such provision from the TSX.

Year	N	Charter Provisions Index Averages	Number of Firms with Coattail Provisions	% of Sample with Coattail Provisions
1998	48	0.118	29	60.4%
1999	51	0.127	32	62.7%
2000	50	0.133	31	62.0%
2001	46	0.143	30	65.2%
2002	43	0.147	29	67.4%
2003	44	0.144	29	65.9%
2004	42	0.151	28	66.7%
2005	38	0.149	25	65.8%
2006	36	0.153	24	66.7%
2007	35	0.167	27	77.1%
2008	32	0.169	26	81.3%
2009	31	0.167	25	80.6%
2010	31	0.167	25	80.6%
2011	31	0.167	25	80.6%
2012	31	0.167	25	80.6%
2013	29	0.172	24	82.8%
2014	26	0.154	21	80.8%
<b>1998 - 2014</b>				
Average	61	0.150		
Median	61	0.167		
Min	61	0.000		
Max	61	0.500		

While 60.4 per cent (n=29/48) of the sample in 1998 had coattail provisions in their company charter, this proportion increased to 80.8 per cent (n=21/26) in 2014. The presence of a coattail provision represented the main favorable component of the Power-Concentrating Charter Provisions (or “Charter Provisions”) index in the sample studied.

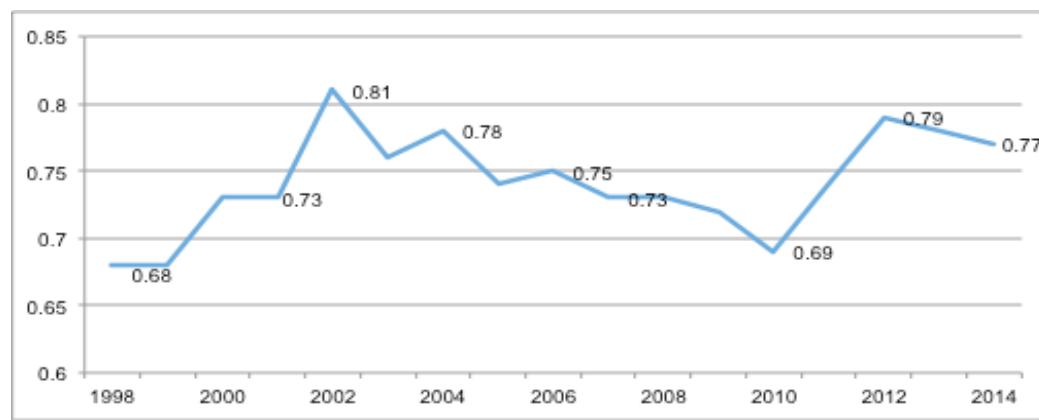
<sup>27</sup> It should be noted that while the reported values for the Takeover Rule index in this study were the same as that reported by Nenova (2001), the Takeover Rule Index value itself differed from the author for unidentified reasons. The same descriptions of variables as the author provided were used (provided in the methodology section of this paper). However, Nenova reported a Takeover Rules Index of 0.70 in both her thesis (2001) and her later publication (2003).

In limited cases, poison pills or provisions of the right of the Board of Directors to limit transfer of shares were identified; the latter being mostly firms operating in the Information industry (telecommunication and media) and the clauses pertained with maintaining the minimum threshold of Canadian ownership/voting power. Over the period of analysis, the Charter Provisions index averaged 0.150, a median value of 0.167 and a maximum value of 0.50, with values closer to 1 indicating less power concentration with the controlling or largest shareholders<sup>28</sup>.

Other measures of institutional determinants of control value used in Nenova (2001) included the Rule of Law index, a proxy for the country's law enforcement, and the investor protection index, as previously described. The value of the Investor Protection (IP) index for Canadian firms over the 1998 – 2014 period solely varied due to the indicator of whether shareholders were allowed to mail their proxy votes, with differences mostly identified in earlier years of the period of interest (with this ability being clearly indicated in later years). As such the IP index either took a value of 0.50 or 0.67. As for the Rule of Law index, this measure is publically disclosed in the IMD World Competitiveness Yearbook<sup>29</sup> and presented in Figure 5.2.

**Figure 5.2. Canadian Rule of Law Index between 1998 and 2014**

Plot of Canada's Rule of Law index – a proxy for law enforcement –over the period of interest.



<sup>28</sup> It should be noted that an average Charter Provisions Index value of 0.94 and 0.53 were reported for Canada in Nenova (2001) versus Nenova (2003) for 1997 (sample of 65 firms), both values being greater than the average value of this study's sample. However, the reason for the difference between Nenova's thesis and later published article is not known.

<sup>29</sup> Rule of Law Index Value from IMD World Competitiveness Yearbook. Prior to 2002, data was available every two years (1998, 2000, 2002) and the same data as previous year was used. Moreover, values reported by IMD are similar to that of World Justice Project. However, WJP does not report data prior to 2011.

Canada's Rule of Law index fluctuated from 0.68 in 1998 to 0.77 in 2014, pointing towards the evolving nature of such metric.

While the value of control-block votes as a share of firm market value is the independent variable of interest for the current study, marginal voting premium were also computed for comparison<sup>30</sup>. Table 5.4. presents average measured control value as well as voting premium for the 1998 – 2014 sample and for each year. The average and median control value measure of 0.0128 and 0.0021 for the full period of analysis are somewhat smaller than the values reported in Nenova (2001) for 1997; That is, a mean of 0.0276 and a median of 0.0047.

**Table 5.4. Sample Voting Premium and Control-Block Value from 1998 to 2014**

The values of control-block votes to firm market value were calculated using monthly data for the sample firms (N=61), for a total of n=7,406 observations over the 1998 – 2014 period. Averages are calculated for each year and for the full period based on monthly observations.

Year	N	n	Voting Premium Average	Control-Block Value Average
1998	48	564	0.094828	0.010885
1999	51	586	0.160805	0.017245
2000	50	557	0.247725	0.019327
2001	46	521	0.269574	0.020177
2002	43	516	-0.498186	0.027494
2003	44	505	-0.793985	0.024041
2004	42	474	0.648005	0.007184
2005	38	429	0.368083	0.010316
2006	36	399	0.407460	0.008636
2007	35	373	0.323495	0.010069
2008	32	374	0.095439	0.009961
2009	31	372	0.112793	0.011588
2010	31	366	0.118617	0.007847
2011	31	367	0.028433	0.000346
2012	31	369	0.034939	0.002378
2013	29	322	0.083040	0.008298
2014	26	312	0.082231	0.005469
<b>1998 - 2014</b>				
Average	61	7,406	0.096302	0.012851
Std. Dev.	61	7,406	6.025206	0.056869
Median	61	7,406	0.027855	0.002155

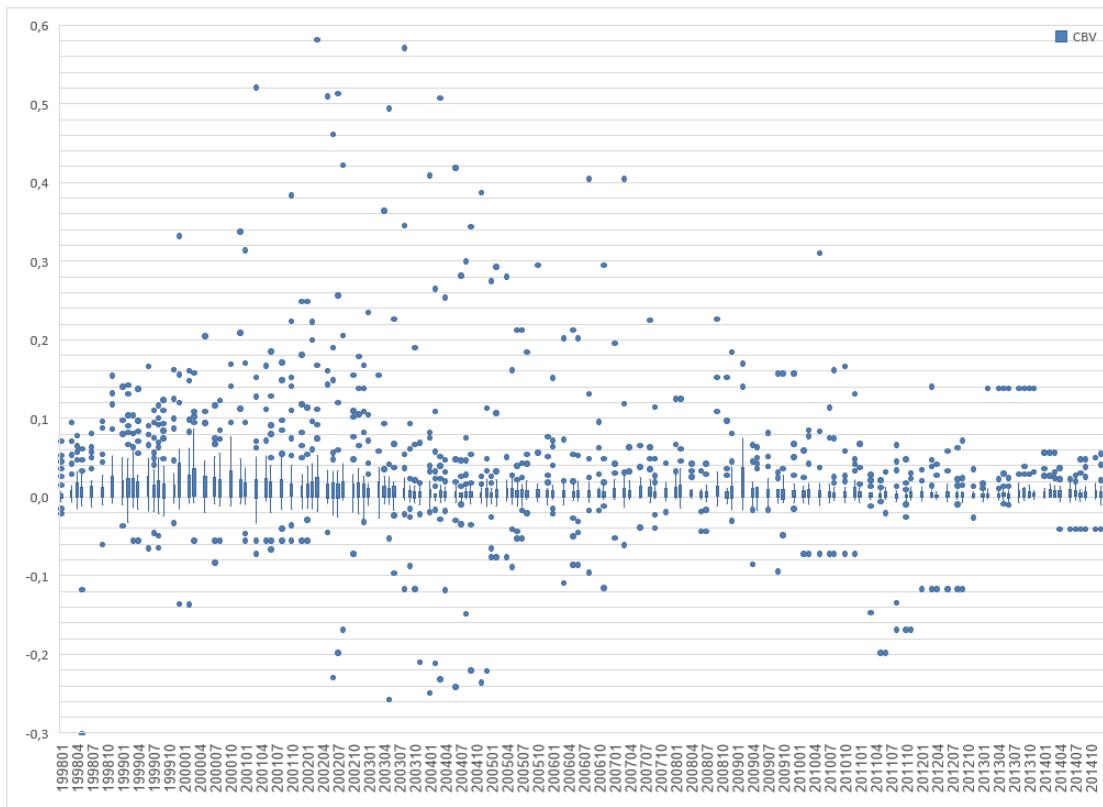
While the average marginal voting premium appears to have fluctuated importantly over the period of interest, the averages for 1998 and 2014 were of a similar magnitude. As for the control-block value, averages appear to have decreased over the same period,

<sup>30</sup> Voting premiums were calculated using the equation derived by Nenova (2001) and presented in the model presentation under Chapter 3.

amidst some fluctuations. Figure 5.3. illustrates the evolution of control-block value over the period of analysis (with few other outliers outside of the presented scale):

**Figure 5.3. Box Plot of Control-Block Value between 1998 and 2014**

Box plot of control-block values as a percentage of firm value over the period of interest, showing dispersion and outliers.



The value of control appears to have concentrated towards lower values over the years, with greater variations observed between 1999 and 2003 and then in 2008 and 2009.

## 5.2. Testing and Regressions

The significance of the control value over time for Canadian dual class firms was evaluated across different sub-groups for the period of interest, followed by various regression analyses with different independent variable specifications. The results are presented and discussed in the following sub-sections.

### *Significance of the Control-Block Value*

As a starting point, the null hypothesis that the average control-block value (CBV) for the full sample is zero was tested using a single sample t-test and was rejected at the 1 per cent significance level. Then, independent group t-tests allowed determining whether the difference of mean control values for different groups was equal to zero. Differences in mean CBV for three pairs of groups were tested: 1) firms present on the full period vs. those not present on all 17 years, 2) firms with a voting/non-voting equity structure (1:0) vs. those with a multiple voting (MV):1 voting structure, and 3) family-owned firms vs. those that are not. Table 5.5 summarizes key statistics for these tests.

**Table 5.5. T-tests for the Difference in Mean Value of Control across Different Sub-Samples**

The table presents results from the one sample t-test for the control-block-value (CBV) for the full sample, with a null hypothesis ( $H_0$ ) that mean (CBV) = 0, and three different two-samples t-test with null hypotheses  $H_0 : \text{mean (groupA)} - \text{mean (groupB)} = 0$ .  $H_a$  refers to the alternative hypotheses that the difference is significantly different than 0 ( $\neq 0$ ) or positive ( $> 0$ ). t: t-statistic and df: degrees of freedom.

Variable	N. obs	Mean	Std. Dev	t	df	p-value	
						$H_a: \text{mean} \neq 0$	$H_a: \text{mean} > 0$
<b>One-Sample t-test</b>							
CBV full sample	7,406	0.0128	0.0569	19.446	7,405	0.0000	0.0000
<b>Two-Samples t-test</b>							
Not present on full period	3,530	0.0200	0.0797	10.424	7,404	0.0000	0.0000
Present on full period	3,876	0.0063	0.0174				
MV:1 voting equity structure	3,136	0.0176	0.0814	6.225	7,404	0.0000	0.0000
1:0 voting equity structure	4,270	0.0093	0.0266				
Not family-owned	2,803	0.0262	0.0830	16.020	7,404	0.0000	0.0000
Family-owned	4,603	0.0047	0.0288				

For all three groups, the null hypothesis that the difference was equal to zero was rejected at the 1 per cent significance level. More precisely, looking at the alternative hypotheses, for a positive difference, results indicated that the mean control-block value

was greater for companies not present on the full sample, with a MV:1 voting equity structure and not family-owned (versus their corresponding alternatives).

### ***Cross-Sectional Time-Series Regressions***

A series of time- and firm-fixed effect regressions were estimated to control for previously identified determinants of voting premium and control-block value in addition to institutional determinants. The basic regression for this model is represented by the following equation:

$$CBV_{it} = \alpha_0 + \alpha_1 RSV_{1,it} + \alpha_2 firmsz_{2,it} + \alpha_3 diffturn_{3,it} + \alpha_4 divratio_{4,it} + \gamma_2 E_2 \\ + \cdots + \gamma_n E_n + \delta_2 T_2 + \cdots + \delta_n T_n + u_{it}$$

where  $CBV$  is the control-block value (dependent variable),  $RSV$  is the relative Shapley value of small shareholders,  $firmsz$  is the relative market value of firms,  $diffturn$  is the log difference in class turnover and  $divratio$  is the dividend ratio.  $\alpha_0$  is the constant,  $\alpha_n$  is the coefficient for the independent variables,  $u_{it}$  is the error term,  $E_n$  is the entity n (using binary dummies, you have n-1 entities included in the model),  $\gamma_n$  is the coefficient for the binary regressors (entities),  $T_n$  is time as binary variable (for t-1 time periods), and  $\delta_n$  is the coefficient for the binary time regressors.

Specifically, a Hausman test using the basic regression suggested a firm fixed effect (fe) model was preferred over a random effect one. Results from a modified Wald test for groupwise heteroskedasticity in fixed effect regression model pointed towards the presence of heteroskedasticity, and as such, Huber/White estimators and standard errors are presented in this section. The results from the Wooldridge test failed to reject the null hypothesis of no serial correlation. A joint test to determine whether dummies for all years are equal to 0, that is whether time-fixed effect must be used in running fe model, favored the use of time-fixed effect models (testparm in Stata).

Regressions I to IV of Table 5.6 estimate monthly control value for the full Canadian sample of firms using alternative control sets, whereas regressions V and VI isolate the sub-sample of 19 firms present on the full 1998 – 2014 period. The regressions control for the probability of a control-contest using the relative Shapley value of all small

shareholders. Contrary to previous findings, a higher Shapley value, and thus a greater probability of the free float shares being purchased in case of a contest for corporate control, decrease control value (negative coefficient). However, the RSV coefficient was not significant across all regressions. Regressions with alternative measures for the probability of a control contest, namely the voting stake of the largest shareholder and the Herfindahl Index measure of ownership concentration, yielded positive but non-significant coefficients (refer to Appendix B). Relative firm market value was used as proxy for block-holding costs. As anticipated, larger firm market value typically decreased the value of control, though the effect was only significant at the 5 per cent level in regression III. Coefficients for liquidity differences were not significant and of the opposite expected sign (positive). Coefficients for the dividend ratio were also not significant, though negative, as expected. Regressions using alternative controls for security-value differences also yielded results contrary to expectations, some of which was significant. Notably, coefficient for the indicator variable for guaranteed minimum limited-voting dividend (DD1) was positive and significant at the 1 per cent level, suggesting that such preferential indications for the restricted voting class increase control value significantly. Regressions with other such indicators, namely for preference for the limited-voting class (DD3) and for convertibility of the superior- into the limited-voting class (DD4), also implied a positive relationship with the value of control-block, though the coefficients were only significant the 10 per cent level in the former and not significant in the latter case. For the sub-sample of firms present on the full 1998 – 2014 period, none of the controls' coefficients were significant and, interestingly, most of the coefficients changed sign.

Generally, relatively low overall R-Squared were obtained across regressions (in the range of about 1 per cent). The models explained 5.8 to 7.0 per cent of the variance within the panel units (within R-Squared relatively small). While the between R-Squared was greater for regressions estimated using firms with complete data over the period of interest (between 10.7 and 17.4 per cent), the model generally only partly explained variance between the separate panel units. The basic regression model was also estimated for the sub-sample of firms with a voting: non-voting equity structure and

operating in the Information industry, as well as for each of the individual years of the sample (refer to Appendix B).

**Table 5.6. Estimation of Control Value as a Share of Firm Market Capitalization**

Time-fixed effect regressions I-IV include all firms and V-VII are restricted to the 19 firms with complete data on the full 1998 – 2014 period of analysis. The dependent variable is the value of control as a share of firm market capitalization. Relative Shapley values are the oceanic Shapley value of all small shareholders divided by their respective fraction of votes. Firm size is relative to stock market capitalization. Difference in turnover of classes is the log of restricted- (or limited) to superior- (or multiple) voting average monthly trading volume. The dividend ratio is the excess dividend of restricted- over superior-voting shares to total restricted-voting dividend. Alternative measures for differences in security value included 5 dummy variables (DD1 to DD5), however two were excluded due to collinearity: DD2, Cumulative dividend for restricted-voting class and DD5, higher registration cost of the superior-voting class relative to the restricted class, as both of them were not identified for any firm of the sample. Huber/White errors are present in italic below the coefficients. Significance: **1%**, **5%** and **10%**.

	Full sample				Sub-Sample: Complete Data		
	I.	II.	III.	IV.	V.	VI.	VII.
Constant	-0.0250 <i>0.0336</i>	-0.0249 <i>0.0336</i>	-0.0286 <i>0.0342</i>	-0.0259 <i>0.0344</i>	0.0063 <i>0.0106</i>	0.0091 <i>0.0140</i>	0.0068 <i>0.0113</i>
Relative Shapley Value	-0.0507 <i>0.0502</i>	-0.0507 <i>0.0502</i>	-0.0508 <i>0.0501</i>	-0.0507 <i>0.0501</i>	0.0053 <i>0.0055</i>	0.0056 <i>0.0058</i>	0.0052 <i>0.0055</i>
Relative Firm Market Value	<b>-0.0064</b> <i>0.0032</i>	<b>-0.0064</b> <i>0.0032</i>	<b>-0.0066</b> <i>0.0032</i>	<b>-0.0064</b> <i>0.0032</i>	0.0009 <i>0.0018</i>	0.0012 <i>0.0021</i>	0.0010 <i>0.0018</i>
Difference in Turnover of Classes	0.0006 <i>0.0006</i>	0.0006 <i>0.0006</i>	0.0005 <i>0.0006</i>	0.0005 <i>0.0006</i>	0.0001 <i>0.0004</i>	0.0001 <i>0.0004</i>	0.0001 <i>0.0003</i>
Excess Dividend of Limited-Voting Shares	-0.0013 <i>0.0027</i>				-0.0025 <i>0.0025</i>		
Guaranteed Minimum Limited-Voting Dividend (DD1)		<b>0.0142</b> <i>0.0052</i>					
Preference for the Limited-Voting Class (DD3)			<b>0.0098</b> <i>0.0050</i>			-0.0034 <i>0.0050</i>	
Convertibility of Multiple into Limited-Voting Shares (DD4)				0.0021 <i>0.0039</i>		-0.0006 <i>0.0033</i>	
Number of Observations	7,406	7,406	7,406	7,406	3,876	3,876	3,876
R-Squared (within)	5.8%	5.8%	5.8%	5.8%	7.0%	7.0%	7.0%
R-Squared (between)	0.4%	0.4%	0.2%	0.5%	17.4%	10.7%	15.1%
R-Squared (overall)	0.9%	0.9%	0.7%	1.0%	1.1%	0.6%	1.2%

Of interest for the current study is the time-behaviour of the control-block value. Time dummies for all months over the period of analysis minus one, i.e. January 1998, were included in all firm- and time-fixed effect regressions, such that coefficients for each dummy measured the time effect on control-block value relative to January 1998. The dates for which time coefficients were significant were looked at more closely for both the full sample and the 19 firms with data on the entire period. Only dates that were significant at the 5 per cent or lower significance levels were included. Table 5.7

summarizes some of the key events over the period of interest as well as corresponding periods when time dummy coefficients were significant in the estimated models. The results presented suggest that control value increases in times of economic downturn or uncertainty, as indicated by the positive and significant dummy coefficients around these periods. This behaviour in time is also more thoroughly displayed in the sub-sample of firms present on the full period of interest.

**Table 5.7. Summary of Key Financial Events that Affected Businesses from 1998 to 2014<sup>31</sup>**

Summary of events associated with periods of heightened economic uncertainty or recession over the period of interest. Dates (year/month) for the time dummies that were significant (at the 5 per cent significance level or less) for the full sample and sub-sample of 19 firms with dual class equity structure on the entire period are presented in columns 3 and 4, respectively.

Year	Key Events of Interest	Full Sample of Firms (y/m)	Sub-Sample of 19 Firms Present on Full Period (y/m)
1997 – 1999	<ul style="list-style-type: none"> <li>▪ East Asian (1997-98), Russian (1998) and Brazilian (1998-99) financial crises</li> <li>▪ The Russian crisis caused failure of U.S. firm Long Term Capital Management and a near-panic in U.S. financial markets</li> </ul>	▪ 1998/03	<ul style="list-style-type: none"> <li>▪ 1998/07</li> <li>▪ 1998/08</li> <li>▪ 1998/11</li> </ul>
2000	<ul style="list-style-type: none"> <li>▪ An inflation report issued in April of 2000 led to the “Technology bubble” to burst leading to significant investment losses</li> </ul>	--	<ul style="list-style-type: none"> <li>▪ 2000/02</li> <li>▪ 2000/03</li> <li>▪ 2000/05-07</li> </ul>
2001	<ul style="list-style-type: none"> <li>▪ September 11 terrorist attacks, which led to the New York Stock Exchange to shut down for a period of time as well as important financial and economic losses</li> <li>▪ Enron and Arthur Andersen were caught in a corporate fraud scandal that led to the bankruptcy and dissolution of the former and latter. This emergence of corporate fraud led to the tightening of corporate governance, notably to the passage of the Sarbanes-Oxley Act of 2002</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2001/03</li> <li>▪ 2001/10</li> </ul>	▪ 2001/11
2002	<ul style="list-style-type: none"> <li>▪ A loss of market confidence due to the events of the prior year led to markets reaching lows not seen since 1997 and 1998 by July and September of 2002</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2002/03</li> <li>▪ 2002/04</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2002/03</li> <li>▪ 2002/06</li> <li>▪ 2002/08</li> <li>▪ 2002/09</li> </ul>
2007 – 2009	<ul style="list-style-type: none"> <li>▪ Sub-prime housing crisis and the housing bubble</li> <li>▪ 2008 also marked Bernard Madoff and one of the biggest Ponzi scheme</li> <li>▪ September 2008 marked the precipitation of the deepest economic downturn since the Great Depression. By 2009, the economy had contracted and the recession was well anchored</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2008/09</li> <li>▪ 2009/02</li> </ul>	<ul style="list-style-type: none"> <li>▪ 2006/06</li> <li>▪ 2006/09-10</li> <li>▪ 2007/08</li> <li>▪ 2008/01-02</li> <li>▪ 2008/04</li> <li>▪ 2008-09</li> <li>▪ 2009/02-05</li> </ul>

Additional regressions allowed for the evaluation of the impact of investor protection laws and firms' charter provisions. The results are presented in Table 5.8. Once again coefficients were non-significant and in some cases, of the opposite sign than would be expected. Coefficients for the corporate Charter Provisions index were negative, though non-significant, in both the full sample and the sub-sample of firms present on the entire

<sup>31</sup> Sources for these events were Peayler (2016) and Schuler (2011).

period, consistent with the idea that corporate charters with lower power concentration with the controlling party (higher value of the index) decrease the control-block value. A similar time-behaviour of control value was observed in regressions XII to XV (not presented). Once again the model only explained a small fraction of the variations across and within panel units.

**Table 5.8. Institutional Determinants of Control Value as a Share of Firm Market Capitalization**

Time-fixed effect regressions XII-XIV include all firms and XV is restricted to the 19 firms with complete data on the full 1998 – 2014 period of analysis. The dependent variable is the value of control as a share of firm market capitalization. Relative Shapley values are the oceanic Shapley value of all small shareholders divided by their respective fraction of votes. Firm size is relative to stock market capitalization. Difference in turnover of classes is the log of restricted- (or limited) to superior- (or multiple) voting average monthly trading volume. The dividend ratio is the excess dividend of restricted- over superior-voting shares to total restricted-voting dividend. Charter provisions are scaled 0-1, with lower values indicating power concentration with the incumbent. Investor protection is scaled 0-1, with higher values indicating a better protection of investors' right. The other institutional determinants, namely Rule of law and Takeover regulations, were omitted due to collinearity. Huber/White errors are present in italic below the coefficients. Significance: **1%**, **5%** and **10%**.

	Full sample			Sub-Sample: Complete Data
	XII.	XIII.	XIV.	XV.
Constant	-0.0505 <i>0.0550</i>	-0.0223 <i>0.0340</i>	-0.0569 <i>0.0554</i>	0.0013 <i>0.0190</i>
Relative Shapley Value	-0.0507 <i>0.0501</i>	-0.0505 <i>0.0501</i>	-0.0505 <i>0.0501</i>	0.0055 <i>0.0054</i>
Relative Firm Market Value	<b>-0.0064</b> <i>0.0032</i>	<b>-0.0063</b> <i>0.0032</i>	<b>-0.0063</b> <i>0.0032</i>	0.0010 <i>0.0018</i>
Difference in Turnover of Classes	0.0006 <i>0.0006</i>	0.0006 <i>0.0006</i>	0.0006 <i>0.0006</i>	0.0001 <i>0.0004</i>
Excess Dividend of Limited-Voting Shares	-0.0013 <i>0.0027</i>	-0.0013 <i>0.0027</i>	-0.0013 <i>0.0027</i>	-0.0025 <i>0.0026</i>
Investor Protection	0.0377 <i>0.0360</i>		0.0530 <i>0.0398</i>	0.0100 <i>0.0157</i>
Charter Provisions		-0.0135 <i>0.0225</i>	-0.0200 <i>0.0209</i>	-0.0110 <i>0.0140</i>
Number of Observations	7,406	7,406	7,406	3,876
R-Squared (within)	5.8%	5.8%	5.8%	7.0%
R-Squared (between)	0.5%	0.4%	0.5%	6.2%
R-Squared (overall)	1.0%	0.9%	1.0%	1.8%

Correlation and covariance matrices of determinant variables are presented in Appendix C and they outline the inherent correlation between variables measuring similar metrics. More specifically, with regards to covariances, those greater than 10% (in absolute) were between the variable measuring liquidity differences (difference in turnover of classes) and the relative Shapley value (-28.7%), alternative measures of ownership concentration (between 16.0% and 19.7%), dummies for family-owned firms

(41.1%) and for when the principal shareholder is acting as CEO (17.5%), as well as other measures of security differences between the two classes (indicator for preference for the limited-voting class, 16.7%; indicator for convertibility of superior- into limited-voting shares, 32.5%). The covariance between the family-owned dummy and RSV was -12.7%. Otherwise, covariance greater than 1% (but less than 10%) was observed amongst variables measuring ownership concentration, including the RSV, or for instance between the family-owned dummy and measures of ownership concentration, as would be expected.

### **5.3. Discussion of Results**

The results from the different estimated models suggest that previously identified determinants of voting power only weakly and most often not significantly accounted for the differences in control-block value of Canadian dual class firms over the 1998 – 2014 period. While firm size most consistently offered some explanation, consistent with the idea that the costs of holding and financing a control-block increases with firm size, all other controls were not significant, with irregularities in the sign of coefficients.

Considering the relative Shapley value of all small shareholders – the proxy for the probability of a control contest – all coefficients were of the opposite sign, i.e. negative. Recall that the variable essentially measures the extent to which players in a voting game, here the pool/ocean of all small shareholders, are pivotal to the game. Larger Shapley value for the ocean would thus reflect the relatively greater coordination issues in voting games, such that there is lower probability of a control contest. However, given that both the Herfindahl index and the voting stake of the largest shareholder had positive coefficients (consistent with previous studies), these results would suggest that the probability of a control contest is influenced by factors beyond the composition and interaction of the various shareholders, and that the ownership concentration aspect of the relative Shapley value was mostly reflected in the results. That is, more dispersed ownership, as indicated by larger relative Shapley value of the ocean, decreases the value of a control-block. Nonetheless, in the sub-sample of firms present on the entire 1998 – 2014 period, a positive, though non-significant, coefficient for the relative Shapley value was obtained in all regressions. The relationship between control-block

value and the relative Shapley value of small shareholders thus remains inconclusive for the multi-year sample of Canadian dual class firms, potentially stressing even more the intrinsic subtleties of this measure as proxy for the probability of a control contest.

The decrease in the number of firms with dual class equity structure over the 1998 – 2014 period and the corresponding decrease in average control-block value are consistent with the first two main hypotheses of this paper. Namely, it was argued that in light of rising concerns concerning managerial entrenchment and accrued monitoring of corporate governance from both the general public and regulatory authorities, the extent to which private benefits could be extracted from control would have decreased over the period of analysis. In turn, this would be reflected in both the number of firms with dual class equity structure and in the value attributed to control. While recapitalization into a single class of shares was further advanced, mergers and acquisitions were most often the principal reason why dual class structure was not observed on the full period of interest. However, the fact that the number of dual class firms nearly halved over the 17 years suggest that incentives for adopting such equity structure have also decreased<sup>32</sup>.

Delving further into the characteristics of the studied sample, family-ownership remained a recurring theme. The proportion of family-controlled dual class firms increased to 73.4 per cent in 2014 from about 50 per cent in 1998, while the average control-block value of family firms was significantly lower than their counterparts' average over the same period. These findings point towards the importance of motives in assessing the risk associated with the adoption or in maintaining a dual class equity structure. Referring back to Spizziri and Fullbrook (2013), who found that Canadian family-controlled dual class firms analyzed over the 1998 – 2012 period outperformed those with a single class of equity, the original motive for adopting a dual class structure is likely to be linked to the future performance of the firm as well as management's likelihood of extracting personal benefits from its controlling stake. However, results suggest that the discussion on motives should also be extended more broadly to

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<sup>32</sup> Note that the number of dual class firms reported in this study does not include those for which only one class of shares was traded on a Canadian exchange.

encompass other distinctions; notably, because dual class firms present on the full period (mostly family-controlled) had a control-block value average lower than those not present on the full period. And, a larger wedge in control was also associated with a greater control-block value average than the simple voting: non-voting structure, though it should be noted that between 52 and 60 per cent of family-controlled firms had such voting structure across the different years of interest. Indeed, Cipollone (2012) argued that in the specific case where RVS are not entitled to vote, such equity structure doesn't even allow for large institutional investors to somewhat counterbalance or monitor the activities and interests of controlling minority shareholders. Yet, the current findings might indicate that the internal monitoring mechanisms are not entirely eroded in voting: non-voting structure, at least not in the case of family-controlled firms.

Together, these findings offer some additional material for regulatory considerations. Specifically, these findings suggest that a plain black and white approach to regulating the use of dual class equity structure would potentially be detrimental to family-controlled firms that appear to have created value to their shareholders over the past decades with overall lower benefits associated with holding a control-block. Nonetheless, other aspects of the use of dual class structure might be worth considering for regulation, notably by installing a cap to the maximum votes a multiple-voting share may be entitled to cast, as previously advanced by other studies and white papers.

As noted in the results, coefficients for the different controls for security-differences were not consistently significant nor of the expected sign. The fact that none of the control/determinant variables were significant for the sub-sample of firms present on the complete period of interest suggest that the country's regulatory and economic environment, as well as the general sense of scrutiny or monitoring from investors, regulators and the general public could have had a greater impact on the value of corporate control. While the relevance of the economic environment was illustrated in this study by the time-behaviour of control-block values of Canadian dual class firms between 1998 and 2014, the regulatory investigation from a corporate governance improvement and monitoring was restricted to the metrics considered in Nenova (2001).

The following sub-section further discusses this aspect as the model's limitations are presented along with further issues and considerations moving forward.

#### **5.4. Further Issues and Considerations**

The basic regression models for the current study was rooted in the model and variables proposed by Nenova (2001). However, the author's cross-country evaluation of the value of control posed different requirements in terms of institutional determinants as opposed to the single country, cross-sectional time-series of the current study. Notably, three of the four variables measuring the strictness of the legal and investor environment were mostly country-level data that showed essentially no variation in time (although there could have been). The Power-Concentrating Charter Provisions index was the only firm-level institutional determinant used in Nenova (2001). Given that the literature review on the Canadian regulatory environment implied some loopholes and somewhat permissive laws, the choice of variables thus represents an inherent limitation of the current study.

The accounting and operational risk literature appears to provide some insights into firm-level indicators of internal corporate governance, or the lack thereof. As previously discussed in the literature review, Hong (2013) found that the voting premium of dual class firms decreased significantly after the mandatory adoption of IFRS, an effect that was even more pronounced in countries of stronger legal enforcement and in firms for which transparency and comparability improved upon the adoption. Canada implemented IFRS into its law as of 2011 (by inserting it unchanged), requiring all publicly traded entities to adopt it. This approach is notably associated with a higher compliance compared to alternative methods of implementation (Nobes, 2011). While monitoring of IFRS adoption by Canadian dual class firms wouldn't be a suitable variable within the context of this study, Hong's findings still support the relevance of reporting measures as an effective mechanism of corporate governance and the impact these measures can have on both perceived and the actual risk associated with the extraction of private benefits from control.

Looking at other accounting literature, the concept of Internal Control Weaknesses (ICW) in financial reporting appears to be a potential starting point for identifying additional determinant variables that could be used in the study of control-block value over time (Ashbaugh-Skaife, Collins and Kinney (2007), Doyle, Ge and McVay (2007a) and Elbannan (2009)). Notably, the literature suggests that firms with ICWs are generally smaller, younger, financially weaker, more complex and growing rapidly. Some potential variables of interest could thus include the business complexity of a firm measured by the number of business and geographic segments and the age (number of months since its market data has been covered by available databases), with older firms more likely to have better risk management and corporate governance practices in place.

However, another potential area of investigation would be CEO incentives given that the structure of executive compensation is likely linked to a firm's internal control environment. Notably, studies have found that the probability of financial misreporting is positively related to CEO incentives (Burns and Kedia (2006), Efendi et al. (2007) Chen (2010) and Jayaraman and Milbourn (2015)). Potential executive compensation variables of interest would include ratio of the CEO's bonus to salary and the ratio of the aggregate value of the CEO's in-the-money options to salary (Chernobai et al, 2011)<sup>33</sup>.

Lastly, while the current study reported whether principal shareholders were also member of the firm's executives (CEO/President) or of the Board of Directors, other governance variables could have been used, including the size of the Board (number of members), the number of independent Board members as well as the number of annual board meetings (Chernobai et al, 2011). The addition of these firm-specific proxies of internal monitoring for sound corporate governance could potentially allow for greater explanation of the value of corporate control in Canadian dual class firms over time.

Beyond the addition of determinant variables, there could also be a potential to improve the Charter Provision index variable that was used as firm-specific indicator of the relative strength of investor protection. Specifically, it could be argued that the non-significance of this variable can be attributed in part to coattails provision being non-

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<sup>33</sup> Chernobai et al. (2011) offer a relatively lengthy list and description of ICWs and firm-level variables that could impact internal corporate governance and monitoring.

retroactive and without standardization in Canada. In some firms, while there was no coattail provision in their charter, a non-binding declaration or commitment by the controlling shareholder(s) (often families) to not tender their shares in case of an offer was observed. A better understanding of the legal jargon may allow for subtler distinction to be made rather than a simple dummy variable for the absence of a coattail provision.

With regards to the country-level Rule of Law variable, which reflect the perception of and the confidence in a country's law enforcement ability, this measure is only one indicator of external governance. Future cross-country analyses of the value of corporate control would likely benefit from using a more comprehensive set of institutional indicators, such as the one used in Moosa and Li (2015) that considers voice and accountability, political stability and absence of violence/terrorism, governance effectiveness, regulatory quality and control of corruption, in addition to Rule of Law.

Overall, these additional specifications could further shed light on the going debate of how to best regulate the use of dual class share structure in Canada. As suggested in Jewartowski and Kaldonski (2015), financial decisions of family-controlled dual class firms are not only driven by control motivations, but also by country-specific regulations of security design. A better understanding of the factors influencing control-block value in Canadian family-controlled dual class and single-class firms could clarify the extent to which regulatory bodies should intervene. However, beyond the family-firm context, a better understanding of how the internal and external corporate governance environment has affected the value of control benefits in Canadian dual class firms would allow to determine whether premium associated with superior voting shares actually reflects the residual and inherent risk associated with the agency problem, however small it might be.

## **Chapter 6**

# **Conclusion**

The current study has shown that Canadian control benefits as a percentage of firm value have remained relatively low compared to other countries, and on average this measure has decreased over the 1998 – 2014 period of interest. Control values reported by Nenova (2001) ranged from nearly zero in Denmark to close to 20 to 50 per cent of firm value in French civil law countries (Brazil, Chile, France, Italy and Mexico). In contrast, annual averages for control benefits in Canadian dual class firms ranged from a peak of 2.75 per cent of firm value in 2002 to a low of 0.03 per cent in 2011. Overall the average and median control values for the complete period were somewhat lower than that reported by Nenova (2001) for Canadian dual class firms listed in 1997.

The evaluation of the time-behaviour of control value in Canada was the main contribution of this paper. It was shown that in times of economic downturn and uncertainty, control benefits tend to increase as a percentage of firm value. Nonetheless, the important events of the past decades have also influenced the value associated with these benefits. Scandals, corruption, bankruptcies and bailouts have led to increased scrutiny and concerns for sound corporate governance. While this phenomenon was global, Canada was not shielded from these growing expectations. And as such, it is not surprising to observe that the value of control benefits has decreased since 1998. Parallel to this decrease in control value, there was also a decrease in the number of dual class firms.

These findings are consistent with two of the main hypotheses advanced in Chapter 3 of this paper; namely, that the number of dual class firms has decreased over the period of interest, pointing towards recapitalization in to a single class of shares of companies previously listed on the exchange and decreased issuance of “new” restricted voting

shares, and that the value of control associated with superior voting shares would decrease over time, while increasing in times of economic uncertainty, including the financial and economic crisis of 2007 – 2008.

While the model failed to conclude that known determinants of voting premium were significant and meaningful determinants of control value over time, the analysis still offered relevant insights that could feed to the ongoing debate on the use and regulation of dual class equity structure in Canada. Notably, family-controlled dual class firms accounted for a large and growing proportion of the sample over the 1998 – 2014 period, whereas the average control-block value of family-controlled firms was significantly lower than their counterparts' average over the same period. Similarly, dual class firms with a voting: non-voting equity structures were found to have an average control value significantly lower than that of alternative voting structures. These findings were consistent with the third main hypothesis of this paper. That is, a lower control-block value was expected in family-controlled dual class firms compared to non-family-controlled ones. Overall, the analysis pointed towards the importance of assessing motives before introducing regulations on dual class firms. While family firms may be driven by control motives when they decide upon a dual class equity structure, a recent Canadian study showed how dual class family-controlled firms may also appear to be best positioned to create value for investors. Regulations could thus potentially come at an important cost to investors and the capital market, as argued extensively by some proponents.

The principal limitation of the current study lies in the model's specification. An interesting avenue for future research would investigate internal corporate governance indicators as determinants of the value of control benefits. Nonetheless, any future cross-country evaluation of control value should also broaden the external indicators of corporate governance as to capture more details of the changing market conditions over the past decades.

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## **Appendix A Toronto Stock Exchange Coattail Provision Requirement**

The TSX criteria for coattail provisions, as found in the TSX Company Manual, are described below for reference:

“(l) TSX will not accept for listing classes of Restricted Securities that do not have takeover protective provisions (“coattails”) meeting the criteria below. The actual wording of a coattail is the responsibility of the listed issuer and must be pre-cleared with TSX.

- i. If there is a published market for the Common Securities, the coattails must provide that if there is an offer to purchase Common Securities that must, by reason of applicable securities legislation or the requirements of a stock exchange on which the Common Securities are listed, be made to all or substantially all holders of Common Securities who are in a province of Canada to which the requirement applies, the holders of Restricted Securities will be given the opportunity to participate in the offer through a right of conversion, unless:an identical offer (in terms of price per security and percentage of outstanding securities to be taken up exclusive of securities owned immediately prior to the offer by the offeror, or associates or affiliates of the offeror, and in all other material respects) concurrently is made to purchase Restricted Securities, which identical offer has no condition attached other than the right not to take up and pay for securities tendered if no securities are purchased pursuant to the offer for Common Securities; or
- ii. less than 50% of the Common Securities outstanding immediately prior to the offer, other than Common Securities owned by the offeror, or associates or affiliates of the offeror, are deposited pursuant to the offer.”



## Appendix B Additional Regression Output

**Table B.1. Estimation of Control Value as a Share of Firm Market Capitalization for the Sub-Sample of Firms with a Voting: Non-Voting Equity Structure**

Time-fixed effect regressions I - IV are restricted to the sub-sample of firms that have a voting: non-voting equity structure over the period of 1998 - 2014. The dependent variable is the value of control as a share of firm market capitalization. Relative Shapley values are the oceanic Shapley value of all small shareholders divided by their respective fraction of votes. Firm size is relative to stock market capitalization. Difference in turnover of classes is the log of restricted- (or limited) to superior- (or multiple) voting average monthly trading volume. The dividend ratio is the excess dividend of restricted- over superior-voting shares to total restricted-voting dividend. Alternative measures for differences in security value included 5 dummy variables (DD1 to DD5), however two dummies were excluded due to collinearity: DD2, Cumulative dividend for restricted-voting class and DD5, higher registration cost of the superior-voting class relative to the restricted class, as both of them were not identified for any firm of the sample. Huber/White errors are present in italic below the coefficients. Significance: **1%**, **5%** and **10%**.

	I.	II.	III.	IV.
Constant	<b>-0.0306</b> 0.0144	<b>-0.0305</b> 0.0144	<b>-0.0325</b> 0.0146	<b>-0.0322</b> 0.0145
Relative Shapley Value	-0.0064 0.0067	-0.0064 0.0067	-0.0064 0.0067	-0.0064 0.0067
Relative Firm Market Value	<b>-0.0051</b> 0.0019	<b>-0.0051</b> 0.0019	<b>-0.0051</b> 0.0019	<b>-0.0052</b> 0.0019
Difference in Turnover of Classes	0.0004 0.0003	0.0004 0.0003	0.0004 0.0003	0.0003 0.2040
Excess Dividend of Limited-Voting Shares	0.0006 0.0020			
Guaranteed Minimum Limited-Voting Dividend (DD1)		<b>0.0063</b> 0.0023		
Preference for the Limited-Voting Class (DD3)			<b>0.0098</b> 0.0027	
Convertibility of Multiple into Limited-Voting Shares (DD4)				<b>0.0061</b> 0.0030
Number of Observations	4,270	4,270	4,270	4,270
R-Squared (within)	6.9%	6.9%	7.0%	7.0%
R-Squared (between)	1.1%	1.1%	0.1%	0.3%
R-Squared (overall)	3.3%	3.3%	1.9%	2.4%

In the sub-sample of firms with a voting: non-voting equity structure, the relative Shapley value was of the predicted sign though non-significant. Alternative measures for differences in security value (DD1, DD3 and DD5) were all of the opposite sign and significant at either the 1, 5 or 10 per cent significance level. Relative firm market value was also significant and of the opposite sign. Overall, these results suggest that there are other factors impacting the value of control in this sub-sample. Recall that between 52 and 60 per cent of family-controlled firms over the period of analysis had a voting: non-voting equity structure.

**Table B.2. Estimation of the Control Value as a Share of Firm Market Capitalization in Information Industry Firms**

Time-fixed effect regressions I - III are restricted to the sub-sample of firms that operated in the Information industry (NAICS 51) over the 1998 – 2014 period of analysis (n=10). The dependent variable is the value of control as a share of firm market capitalization. Relative Shapley values are the oceanic Shapley value of all small shareholders divided by their respective fraction of votes. Firm size is relative to stock market capitalization. Difference in turnover of classes is the log of restricted- (or limited) to superior- (or multiple) voting average monthly trading volume. The dividend ratio is the excess dividend of restricted- over superior-voting shares to total restricted-voting dividend. Alternative measures for differences in security value included 5 dummy variables (DD1 to DD5), however three dummies were excluded due to collinearity: DD1, Guaranteed minimum limited-voting dividend, DD2, Cumulative dividend for restricted-voting class and DD5, higher registration cost of the superior-voting class relative to the restricted class – DD2 and DD5 were not identified for any firm of the sample. Huber/White errors are present in italic below the coefficients. Significance: **1%**, **5%** and **10%**.

	<b>I.</b>	<b>II.</b>	<b>III.</b>
Constant	-0.0266 <i>0.0138</i>	<b>-0.0268</b> <i>0.0130</i>	-0.0254 <i>0.0145</i>
Relative Shapley Value	0.0039 <i>0.0107</i>	0.0039 <i>0.0104</i>	0.0048 <i>0.0104</i>
Relative Firm Market Value	-0.0032 <i>0.0021</i>	-0.0031 <i>0.0020</i>	-0.0031 <i>0.0021</i>
Difference in Turnover of Classes	-0.0004 <i>0.0005</i>	-0.0004 <i>0.0005</i>	-0.0003 <i>0.0004</i>
Excess Dividend of Limited-Voting Shares	<b>0.0035</b> <i>0.0011</i>		
Preference for the Limited-Voting Class (DD3)		<b>0.0061</b> <i>0.0009</i>	
Convertibility of Multiple into Limited-Voting Shares (DD4)			-0.0050 <i>0.0043</i>
Number of Observations	1,507	1,507	1,507
R-Squared (within)	15.9%	16.1%	16.3%
R-Squared (between)	0.6%	0.0%	3.0%
R-Squared (overall)	11.3%	9.9%	12.4%

In the Information industry sub-sample, regressions yielded positive and significant coefficients for the indicators of excess dividend to the limited-voting class and of preference for the limited-voting class, suggesting clauses in favour of the restricted voting class would increase the value of control (contrary to expectations).

Estimations on a yearly basis over the 1998 – 2014 period yielded mostly inconclusive and non-significant results. The dividend ratio variable was significant in 1998 and 2005 at the 1 per cent significance level, but of the expected sign (negative) only in 1998. All other coefficients were non-significant and the signs varied over the years.

**Table B.3. Estimation of the Control Value as a Share of Firm Market Capitalization for Each Year over the 1998 – 2014 Period**

Time-fixed effect regressions for each of the 17 years over the period of 1998 – 2014 were analyzed. The dependent variable is the value of control as a share of firm market capitalization. Firm size is relative to stock market capitalization. Difference in turnover of classes is the log of restricted- (or limited) to superior- (or multiple) voting average monthly trading volume. Relative Shapley values were excluded as determinant variable given that the variables are computed based on annual data. Huber/White errors are present in italic below the coefficients. Significance: **1%**, **5%** and **10%**.

	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Constant	0.1309 <i>0.1554</i>	-0.0178 <i>0.0856</i>	-0.1485 <i>0.1955</i>	-0.2604 <i>0.2171</i>	0.0098 <i>0.0434</i>	-0.1182 <i>0.1116</i>	0.0380 <i>0.1107</i>	0.2314 <i>0.3230</i>	-0.3269 <i>0.2196</i>
Relative Firm Market Value	0.0163 <i>0.0196</i>	-0.0040 <i>0.0108</i>	-0.0230 <i>0.0261</i>	-0.0383 <i>0.0296</i>	-0.0013 <i>0.0059</i>	-0.0205 <i>0.0143</i>	0.0036 <i>0.0141</i>	0.0290 <i>0.0417</i>	-0.0433 <i>0.0279</i>
Difference in Turnover of Classes	0.0012 <i>0.0007</i>	0.0007 <i>0.0007</i>	0.0007 <i>0.0011</i>	-0.0002 <i>0.0008</i>	-0.0019 <i>0.0023</i>	-0.0006 <i>0.0004</i>	0.0005 <i>0.0007</i>	-0.0004 <i>0.0010</i>	-0.0011 <i>0.0014</i>
Excess Dividend of Limited-Voting Shares	<b>-0.0017</b> <i>0.0005</i>	-0.0044 <i>0.0075</i>	-0.0007 <i>0.0027</i>	0.0098 <i>0.0059</i>	0.0009 <i>0.0056</i>	-0.0002 <i>0.0052</i>	0.0006 <i>0.0040</i>	<b>0.0158</b> <i>0.0036</i>	0.0016 <i>0.0029</i>
Number of Obs.	564	586	557	521	516	505	474	429	399
Number of Firms	48	51	50	46	43	44	42	38	36
R-Squared (within)	6.1%	2.4%	4.3%	9.1%	2.9%	7.3%	1.9%	6.3%	11.8%
R-Squared (between)	7.3%	12.1%	6.5%	15.3%	8.4%	4.4%	0.2%	7.8%	2.3%
R-Squared (overall)	1.2%	7.7%	5.1%	11.4%	3.5%	4.9%	0.0%	3.8%	3.3%
	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	
Constant	-0.0384 <i>0.1458</i>	-0.1331 <i>0.1373</i>	-0.2080 <i>0.2486</i>	<b>0.7595</b> <i>0.2897</i>	0.5769 <i>0.3559</i>	-0.3047 <i>0.2666</i>	-0.1338 <i>0.1457</i>	-0.1170 <i>0.1508</i>	
Relative Firm Market Value	-0.0055 <i>0.0181</i>	-0.0201 <i>0.0184</i>	-0.0277 <i>0.0300</i>	<b>0.0929</b> <i>0.0357</i>	0.0719 <i>0.0442</i>	-0.0382 <i>0.0330</i>	-0.0170 <i>0.0176</i>	-0.0158 <i>0.0191</i>	
Difference in Turnover of Classes	-0.0001 <i>0.0012</i>	-0.0006 <i>0.0010</i>	-0.0009 <i>0.0008</i>	0.0018 <i>0.0013</i>	0.0007 <i>0.0005</i>	-0.0006 <i>0.0006</i>	-0.0007 <i>0.0007</i>	-0.0005 <i>0.0007</i>	
Excess Dividend of Limited-Voting Shares	-0.0138 <i>0.0222</i>	-0.0023 <i>0.0136</i>	-0.0014 <i>0.0245</i>	-0.0117 <i>0.0213</i>	-0.0003 <i>0.0153</i>	-0.0030 <i>0.0109</i>	-0.0069 <i>0.0179</i>	-0.0267 <i>0.0128</i>	
Number of Obs.	373	374	372	366	367	369	322	312	
Number of Firms	35	32	31	31	31	31	29	26	
R-Squared (within)	3.2%	8.6%	7.2%	31.7%	14.0%	14.3%	9.7%	5.3%	
R-Squared (between)	23.2%	13.9%	33.8%	0.6%	25.9%	16.6%	44.9%	0.6%	
R-Squared (overall)	13.8%	6.9%	12.4%	0.0%	13.5%	10.5%	40.6%	0.2%	

**Table B.4. Estimation of the Control Value as a Share of Firm Market Capitalization – Additional Characteristics of Principal Shareholders and Alternative Measures of Ownership Concentration**

Time-fixed effect regressions I - IV are for the full sample of firms over the 1998 – 2014 period (N=61). The dependent variable is the value of control as a share of firm market capitalization. Relative Shapley values are the oceanic Shapley value of all small shareholders divided by their respective fraction of votes. Firm size is relative to stock market capitalization. Difference in turnover of classes is the log of restricted- (or limited) to superior- (or multiple) voting average monthly trading volume. Family-controlled firms and principal shareholder is CEO are dummy variables. Alternative measures of ownership concentration include: voting stakes of the largest or the cumulative stakes of the largest 5 shareholders and the Herfindhal index of the largest voting stakes, calculated as the sum of the squared voting stakes of the largest 5 shareholders. Huber/White errors are present in italic below the coefficients. Significance: **1%**, **5%** and **10%**.

	<b>I.</b>	<b>II.</b>	<b>III.</b>	<b>IV.</b>
Constant	-0.0153 <i>0.0310</i>	<b>-0.0947</b> 0.0494	<b>-0.0434</b> 0.0227	<b>-0.0786</b> 0.0353
Relative Shapley Value	-0.0520 0.0500			
Relative Firm Market Value	<b>-0.0061</b> 0.0031	-0.0053 0.0034	<b>-0.0053</b> 0.0031	<b>-0.0058</b> 0.0032
Difference in Turnover of Classes	0.0006 0.0006	0.0005 0.0006	0.0009 0.0009	0.0005 0.0006
Excess Dividend of Limited-Voting Shares	-0.0013 0.0027	-0.0016 -0.0016	-0.0020 0.0026	-0.0018 0.0026
Family-Controlled Firms	-0.0166 0.0185			
Principal Shareholder is CEO	0.0052 0.0067			
Voting Stake of Largest Shareholder		0.1143 <i>0.1003</i>		
Voting Stake of Largest 5 Shareholders			0.0128 <i>0.0215</i>	
Herfindahl Index of Largest Voting Stakes				0.1157 <i>0.0903</i>
Number of Observations	7,406	7,406	7,406	7,406
R-Squared (within)	6.0%	5.5%	3.5%	5.7%
R-Squared (between)	2.8%	0.1%	5.4%	0.2%
R-Squared (overall)	2.9%	0.4%	3.4%	0.4%

In light of the findings on family-controlled firms and their respective lower value of control, and considering the potential Internal Control Weaknesses may hold as explanatory variables of control benefits, the basic regression model was supplemented with two dummies, one for family-controlled firms and one for firms for which the principal shareholder is also the acting CEO or President. While the results were not significant, the coefficient was of the expected sign for the family-controlled dummy. That is, family-controlled firms would reduce the value of control benefits. As for the CEO dummy, the findings would suggest that having controlling shareholders involved in management of the firm would potentially increase the control value. One could

expect that the extent to which control value increase/decrease may be linked to the compensation and other measures of internal and external corporate governance.

As for the alternative measures of ownership structure, all of the coefficients were of the expected sign (positive) but non-significant.



## Appendix C Correlation and Covariance Matrices of Determinant Variables

**Table C.1. Correlation Matrix of Determinant Variables**

Correlation matrix of all determinant and key characteristic variables. RSV is relative Shapley value; SH\_1 is the voting stake of the largest/dominant vote-owner; Top5\_SH is the voting stake of the largest/dominant 5 vote-owners; HII is the Herfindahl index of the largest/dominant vote owners; Diffturn is the log difference in turnover of classes (liquidity difference); Divratio is the excess dividend payment to a limited- over a superior-voting share, scaled by the total dividend to a limited-voting share; DD1 is the dummy indicator for guaranteed minimum limited-voting dividend; DD2 is the dummy indicator for cumulative dividend for the limited-voting class; DD3 is the dummy indicator for preference for the limited-voting class; DD4 is the dummy indicator for convertibility of superior- into limited-voting shares; DD5 is the dummy indicator for higher registration cost of the superior- relative to the limited-voting class; Fam is the dummy indicator for family-controlled dual class firms; CEO is the dummy indicator when the principal shareholder is acting as CEO; Invp is the indicator for the protection of investors' right with higher values indicating a better protection; Toreg is the indicator for investor protection during a corporate contest, with higher values indicating stricter takeover law and increased investor protection during a corporate contest; Charter is the indicator for power concentration in the hands of dominant shareholders, with higher values indicating lower power concentration with the controlling party; RofLaw is the indicator for law enforcement. Highlighted in red are the correlation values (abs.) ranging from 0.5 to 0.99; in orange are the correlation values (abs.) greater than 0.2 but lower than 0.5.

(obs=7,406)	RSV	SH_1	Top5_SH	HII	Diffturn	Divratio	DD1	DD3	DD4	Fam	CEO	Invp.	Toreg	Charter	RofLaw
<b>RSV</b>	1.0000														
<b>SH_1</b>	-0.7952	1.0000													
<b>Top5_SH</b>	-0.5915	0.7568	1.0000												
<b>HII</b>	-0.7030	0.9625	0.7768	1.0000											
<b>Diffturn</b>	-0.2992	0.3613	0.3711	0.3741	1.0000										
<b>Divratio</b>	-0.0683	0.0918	0.0737	0.0939	0.0358	1.0000									
<b>DD1</b>	-0.0222	0.0240	0.0355	0.0241	-0.0122	0.0656	1.0000								
<b>DD3</b>	-0.2341	0.2489	0.1919	0.2494	0.1840	0.0713	-0.0147	1.0000							
<b>DD4</b>	-0.1705	0.2118	0.1541	0.1974	0.2959	-0.0350	-0.0217	-0.0065	1.0000						
<b>Fam</b>	-0.6376	0.6021	0.5529	0.5905	0.3632	0.0571	0.0240	0.2343	0.1595	1.0000					
<b>CEO</b>	0.0025	0.0496	0.1100	0.0482	0.1499	0.0083	0.0289	-0.0060	0.1301	-0.0967	1.0000				
<b>Invp</b>	0.1008	-0.2104	-0.1397	-0.2369	-0.1034	0.0169	0.0058	0.0904	-0.1841	-0.1480	0.1665	1.0000			
<b>Toreg</b>	0.1111	-0.1016	-0.1265	-0.0989	-0.0618	-0.0069	-0.0024	-0.0368	0.1096	-0.0991	-0.0823	0.0147	1.0000		
<b>Charter</b>	-0.0151	0.1233	0.0353	0.1867	0.1033	0.0360	0.0499	-0.0207	0.1923	0.0027	0.1843	-0.0014	0.0112	1.0000	
<b>RofLaw</b>	-0.0646	0.0883	0.0922	0.0851	-0.0162	0.0000	0.0328	0.0027	0.0316	0.0277	-0.0073	0.0470	-0.0752	0.0615	1.0000

**Table C.2. Covariance Matrix of Determinant Variables**

Covariance matrix of all determinant and key characteristic variables. RSV is relative Shapley value; SH\_1 is the voting stake of the largest/dominant vote-owner; Top5\_SH is the voting stake of the largest/dominant 5 vote-owners; HII is the Herfindahl index of the largest/dominant vote owners; DiffTurn is the log difference in turnover of classes (liquidity difference); Divratio is the excess dividend payment to a limited- over a superior-voting share, scaled by the total dividend to a limited-voting share; DD1 is the dummy indicator for guaranteed minimum limited-voting dividend; DD2 is the dummy indicator for cumulative dividend for the limited-voting class; DD3 is the dummy indicator for preference for the limited-voting class; DD4 is the dummy indicator for convertibility of superior- into limited-voting shares; DD5 is the dummy indicator for higher registration cost of the superior- relative to the limited-voting class; Fam is the dummy indicator for family-controlled dual class firms; CEO is the dummy indicator when the principal shareholder is acting as CEO; Invpr is the indicator for the protection of investors' right with higher values indicating a better protection; Toreg is the indicator for investor protection during a corporate contest, with higher values indicating stricter takeover law and increased investor protection during a corporate contest; Charter is the indicator for power concentration in the hands of dominant shareholders, with higher values indicating lower power concentration with the controlling party; RofLaw is the indicator for law enforcement. Highlighted in red are the covariance values (abs.) greater than 0.10; in orange are the covariance values greater than 0.01 but less than 0.10.

(obs=7,406)	RSV	Diff										T-O		
		Turn	DivRatio	DD1	DD3	DD4	Fam	CEO	Inv. pr.	reg	Charter	RofLaw		
<b>RSV</b>	0.1685													
<b>Top1_SH</b>	-0.0718	0.0484												
<b>Top5_SH</b>	-0.0450	0.0308	0.0343											
<b>HII</b>	-0.0652	0.0478	0.0325	0.0510										
<b>Diff Turn</b>	-0.2866	0.1854	0.1604	0.1972	5.4426									
<b>DivRatio</b>	-0.0036	0.0026	0.0018	0.0027	0.0107	0.0165								
<b>DD1</b>	-0.0003	0.0002	0.0002	0.0002	-0.0009	0.0003	0.0009							
<b>DD3</b>	-0.0373	0.0213	0.0138	0.0219	0.1667	0.0036	-0.0002	0.1509						
<b>DD4</b>	-0.0330	0.0219	0.0134	0.0210	0.3253	-0.0021	-0.0003	-0.0012	0.2220					
<b>Fam</b>	-0.1270	0.0642	0.0497	0.0647	0.4110	0.0036	0.0004	0.0441	0.0364	0.2353				
<b>CEO</b>	0.0005	0.0054	0.0102	0.0054	0.1746	0.0005	0.0004	-0.0012	0.0306	-0.0234	0.2490			
<b>Inv protection</b>	0.0013	-0.0014	-0.0008	-0.0016	-0.0074	0.0001	0.0000	0.0011	-0.0026	-0.0022	0.0025	0.0009		
<b>T-O reg</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
<b>Charter</b>	-0.0007	0.0031	0.0007	0.0048	0.0272	0.0005	0.0002	-0.0009	0.0102	0.0001	0.0104	0.0000	0.0000	0.0127
<b>RofLaw</b>	-0.0010	0.0007	0.0006	0.0007	-0.0014	0.0000	0.0000	0.0006	0.0006	-0.0001	0.0001	0.0000	0.0003	0.0014