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**CORPORATE GOVERNANCE, CORPORATE POLICIES,
AND STOCK MARKET LIQUIDITY:
EVIDENCE ON DILUTION OF MINORITY INTERESTS**

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RÉSUMÉ COURT

Nous analysons, dans un premier chapitre, la structure de propriété au Canada, en l'attaquant d'un angle novateur qui consiste à tracer la chaîne de propriété de chaque entreprise sélectionnée jusqu'au propriétaire ultime. Nous distinguons entre les entreprises Québécoises et celles du reste du Canada pour étudier l'effet de l'héritage culturel et de l'origine du système légal sur la structure de propriété. Nous examinons ensuite les déterminants de la séparation entre les droits de contrôle et les droits de propriété. Nous trouvons que *l'effet Québec* affecte significativement la structure de propriété ultime et la séparation entre droits de vote et droits de propriété. Dans le deuxième chapitre, nous examinons les déterminants, coûts et bénéfices de l'affiliation à une structure pyramidale. Nous trouvons qu'il y a une différence entre les droits de vote et ceux de propriété pour les entreprises affiliées, et que l'affiliation à une structure pyramidale affecte négativement la valeur de la firme. Finalement, nous étudions la relation entre la liquidité des titres et la structure de propriété "ultime". Nous rapportons que la présence du contrôle familial et la séparation entre le contrôle et la propriété influence significativement et positivement l'écart vendeur-acheteur.

SHORT SUMMARY

We analyze, in the first chapter, the ultimate ownership structure of Canadian traded firms. We distinguish between firms headquartered in Quebec (the Canadian Franco-Saxon province) and those in the rest of Canada to examine the effect culture heritage and Law origin. Then we examine what empirically determines the control-ownership separation. We find that the Quebec effect is not neutral in shaping both the ownership concentration and the separation between ownership and control rights in Canada. In the second chapter, we investigate the determinants, costs and benefits of corporate affiliation to pyramidal holdings. We find a mismatch between cash flow rights and voting rights in firms affiliated to pyramidal holdings, and that pyramidal affiliation decreases corporate value. Finally, we examine the relationship between stock liquidity and ultimate ownership structure. Our results suggest that the presence of family control increases the bid-ask spread. In addition, the magnitude of the deviation between ultimate ownership and ultimate control is important in determining the bid-ask spread.

RÉSUMÉ LONG

Nous analysons, dans un premier chapitre, la structure de propriété au Canada, en l'attaquant d'un angle novateur qui consiste à retracer le propriétaire ultime. Nous présentons ainsi un portrait global de la structure de propriété ultime de 1121 entreprises canadiennes. Seulement 18% des entreprises sont à propriété diffuse, 82% (63%) ont un propriétaire ultime à 10% (20%). Ce propriétaire ultime est dans 57% (41%) des cas une famille (ou coalition de familles). En utilisant des tests non paramétriques, nous comparons certains indicateurs de gouvernance des entreprises québécoises à ceux des entreprises du reste du Canada. Nous trouvons que les droits de vote et de propriété sont plus concentrés, l'utilisation des mécanismes pour accentuer le contrôle est plus prononcée au Québec qu'ailleurs au Canada. Nous trouvons que la taille de l'entreprise, la présence de contrôle familial et *l'effet Québec* affecte significativement la séparation entre droits de contrôle et droits de propriété. Dans le deuxième chapitre, nous utilisons des tests non-paramétriques, un modèle logistique et des régressions multiples pour examiner les déterminants, coûts et bénéfices de l'affiliation à une structure pyramidale. Nous rapportons une différence entre les droits de vote et ceux de propriété pour les entreprises affiliées. Les décisions de l'entreprise reflètent généralement les préférences du propriétaire ultime et l'affiliation à une structure pyramidale influence négativement sur la valeur de l'entreprise. L'étude des entreprises affiliées suggère que les propriétaires ultimes aient tendance à combiner les droits de vote, les droits de propriété, et la distance les séparant des entreprises affiliées pour minimiser (maximiser) leur exposition à des chocs négatifs (positifs). Finalement, nous utilisons des régressions multiples, pour étudier la relation entre la liquidité des titres financiers (se reflétant dans l'écart vendeur-acheteur) et la structure de propriété ultime. Nos résultats suggèrent que la séparation entre le contrôle et la propriété affecte significativement et positivement l'écart vendeur-acheteur. L'augmentation de l'écart vendeur-acheteur reflète les coûts d'asymétrie d'information induits par le comportement opportuniste de ceux qui détiennent des blocs de contrôle en disproportion par rapport aux droits de propriété. Finalement, en examinant la relation de simultanéité entre la structure de propriété et la liquidité des actions, nous trouvons que les propriétaires ultimes préfèrent les titres les moins liquides, probablement dans l'espoir d'extraire des rentes tout en évitant les pénalités du marché.

LONG SUMMARY

We analyze, in the first chapter, the direct and ultimate ownership and control, and other corporate features of 1121 Canadian traded firms. We find that ownership and control are concentrated and their separation is relatively pronounced in Canada. This separation is accentuated via different means of enhancing. Only 18% of Canadian firms are widely held, 82 (63)% have an ultimate at the 10 (20)% cut-off level. Family dynasties control 56.60% of Canadian traded firms at the 10 (20)% cut-off level. When contrasting governance features of firms headquartered in Quebec against those of firms headquartered in the rest of Canada, we find that firms in Quebec display more ownership and control concentration, more pronounced family and government control, and more pronounced use of pyramidal and multiple class shares than do firms elsewhere in Canada. Then we examine what empirically determines the control-ownership separation. We find that such separation is significantly associated with firm size, family control and the environment in which the firm operates (i.e. Quebec). To some extent, our results support the path dependence argument of Bebchuck and Roe (1999). Using non-parametric tests, logit models and multivariate analysis, we investigate, in the second chapter, the determinants, costs and benefits of corporate affiliation to pyramidal holdings. We find a mismatch between cash flow rights and voting rights in firms affiliated to pyramidal holdings. Corporate policies reflect cash distribution preferences of the ultimate owners of the holdings. We also find a negative effect of pyramidal ownership on corporate value. This finding supports the hypothesis that the layers of equity holdings within the pyramidal holding contribute to form an impervious veil behind which ultimate owners engage in expropriating behavior. Our investigation of affiliated firms suggests that ultimate owners, mostly families, are adept at combining their cash flow rights, voting power, and distance from affiliates in a way that minimizes (maximizes) sensitivity to negative (positive) events. In the third chapter we use multivariate and simultaneous analysis to examine the relationship between stock liquidity and ultimate ownership structure. Our results suggest that the presence of family increases the bid-ask spread, and that the magnitude of the deviation between ultimate ownership and ultimate control is important in determining the bid-ask spread. Furthermore, we document that mechanisms of enhancing control, say pyramid at the presence of families, significantly affect bid-ask spreads. Finally, our results suggest that ultimate owners prefer less liquid stocks to enhance their corporate power and avoid market control.

PREFACE

Cette thèse est l'aboutissement d'un long apprentissage à l'Université Laval, à laquelle j'adresse toute ma reconnaissance.

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DEFINITION OF THE VARIABLES

Symbol	Description	Main Source(s)
BASP	The mean value of the daily percentage spread from daily closing bid (BID) and closing ask (ASK) prices from 01/01/1996 to 31/12/1996 ($BASP = (Ask - Bid) / [(Ask + Bid) / 2] * 100$).	TSE Western
CASH	Firm's cash availability.	Stock Guide
CLSP	The average of daily closing price.	TSE Western
CPEX	Capital expenditures over total assets (e.g. additions at cost to fixed assets for new plants and equipment, factories, office equipment, computers, etc.),	Stock Guide
CRHO or MUCC	Equals 1 if the firm is controlled through multiple control chains (e.g. cross-holding), 0 otherwise. For example, suppose that firm A controls 10% of B and 100% of C, which controls 15% of B. Since C is fully controlled by A in the control chain A-C-B, there is no pyramiding. However, Firm A controls Firm B directly and indirectly through Firm C, with control rights of 25 percent. We conclude that Firm A controls Firm B through multiple control chains.	The Financial Post and Statistics Canada Intercorporate Ownership in Canada for 1996.
DBLC	Direct block of control. We distinguish the five direct largest blocks of control.	=
DEBR	The debt ratio.	Stock Guide
DIVR	The dividend payout ratio.	=
FAMC	Equals 1 if a person or a non-listed firm is the controlling shareholder and 0 otherwise.	The Financial Post and Statistics Canada Intercorporate Ownership in Canada for 1996.
FRCF	A proxy for free cash flow, defined as net operating income on an after tax basis, adjusted for the change in working capital, less depreciation, and divided by total assets so as to control for the size effect	Stock Guide
GOVC	Equals 1 if a domestic federal or provincial government or a foreign national government, a local authority including county, a municipality, etc. or a government agency is the controlling shareholder, and 0 otherwise.	The Financial Post and Statistics Canada Intercorporate Ownership in Canada for 1996.
GTAS	The average growth rate of total assets over the 1994-1996 period.	Stock Guide
HGRS	The average growth rate of sales over the 1994-1996 period.	=
ICOR	The interest coverage ratio.	=

Symbol	Description	Main Source(s)
MCAP	Market Capitalization.	Stock Guide
MDTR	The average number of daily trading transactions.	TSE Western
MFCF	Equals 1 if the controlling family appoints some of its members to top management positions, 0 otherwise.	The Financial Post and Statistics Canada Intercorporate Ownership in Canada for 1996.
MISC	Equals 1 if WHFI, FAMC, WFIL, WHCC, and GOVC are all equals to 0, and 0 otherwise. (e.g. non-profit organizations, employees group, etc.)	=
MCLS	Equals 1 if there is more than one class of outstanding shares, 0 otherwise.	=
MROV	The minimum capital needed to control 20% of the votes.	=
NVOS	Equals 1 if there are non-voting outstanding shares, 0 otherwise.	=
OPCF	Cash flow from operation.	Stock Guide
PYRA or PAFF	Equals 1 if the firm is controlled through pyramidal structure, 0 otherwise. For instance, firm Y is said to be controlled through “pyramiding” if it has an ultimate owner, who controls Y indirectly through another corporation that it does not wholly control.	=
QCOQ	The mean ratio of quote changes over quotes.	TSE Western
QUBF	Equals 1 if the firm is headquartered in the province of Quebec, 0 otherwise.	The Financial Post and Statistics Canada Intercorporate Ownership in Canada for 1996.
RCHO	Equals 1 if there is a reciprocal control in the ultimate ownership structure of the selected firm, 0 otherwise. For instance, firm Y is said to be controlled by a “reciprocal-holding”, if firm X holds a stake in Firm Y, and Y holds a stake in firm X.	=
RISK	The variance of stock daily returns as a proxy for return variability.	TSE Western
ROCF	Equals 1 if the firm is headquartered in the rest of Canada (outside the province of Quebec), 0 otherwise.	The Financial Post and Statistics Canada Intercorporate Ownership in Canada for 1996.
SUOW	Equals 1 if the firm has a second ultimate owner at the selected cut-off level and 0 otherwise. That is, if more than one controlling shareholder has voting rights over the selected cut-off level.	=

Symbol	Description	Main Source(s)
TASS	Total assets.	Stock Guide
TOBQ	The ratio of market value of equity plus book value of debt over book value of equity and debt (as a proxy for Tobin's Q).	=
UCOS	Ultimate control block, which is equal to the minimum direct block of control on the ownership chain.	The Financial Post and Statistics Canada Intercorporate Ownership in Canada for 1996.
UOWN	Equals 1 if the firm has an ultimate owner at the selected cut-off level and 0 otherwise. Here, we do not distinguish the type of the ultimate owner.	=
UOWS	Ultimate ownership block, which is equal to the product of direct blocks of ownership on the ownership chain.	=
VOLM	The yearly trading volume.	TSE Western
WHCC	Equals 1 if a widely-held non-financial company is the controlling shareholder, and 0 otherwise.	The Financial Post and Statistics Canada Intercorporate Ownership in Canada for 1996.
WHFI	Equals 1 if there is no controlling shareholder at the selected cut-off level (10 or 20 percent), and 0 otherwise. We look at direct and ultimate control stakes. A widely-held corporation is a corporation that does not have any owner with control rights above the 10% or the 20% threshold limits.	=
WFII	Equals 1 if a widely-held financial institution is the controlling shareholder and 0 otherwise.	=

INTRODUCTION GÉNÉRALE

Selon Coase (1937), l'entreprise émerge afin de réduire les coûts de transaction que génère le marché. L'entreprise, à travers ses modes de coordination, s'avère plus efficiente que le marché pour organiser certains échanges afin de créer de la richesse. Toutefois, pour remplir sa fonction de créatrice de richesse, l'entreprise doit définir des modalités d'organisation du pouvoir adaptées et crédibles. Ces modalités sont définies via un "nœud de contrats" qui régissent la relation d'agence entre les intéressés à la firme (e.g. actionnaires, créanciers, clients, fournisseurs, etc.). Évidemment, une telle relation se heurte à certaines embûches qui peuvent dévier l'entreprise de son objectif ultime de maximisation de la richesse. D'un côté, à cause de l'existence d'intérêts conflictuels entre le principal et l'agent, les deux parties peuvent s'engager dans un processus de maximisation de leur utilité respective, en adoptant un comportement opportuniste¹. De l'autre côté, une telle relation ne peut être gouvernée uniquement par les termes d'un contrat, car il est quasi-impossible de définir avec précision les conditions contractuelles qui lient l'agent au principal (i.e. contrats incomplets).

Ces conflits d'intérêts sont généralement inhérents à la séparation² entre le contrôle et la propriété, qui généreront des problèmes d'asymétrie d'information. De par leur pouvoir au sein de la firme, les managers ou les actionnaires majoritaires disposent d'informations privilégiées inaccessibles aux investisseurs, notamment aux actionnaires minoritaires. D'où l'importance de la gouvernance d'entreprise, qui peut être définie³ comme un ensemble de mécanismes qui 'devraient' assurer un traitement équitable de toutes les parties prenantes à la vie d'une société. En effet, pour remplir sa fonction de créatrice de richesse, les entreprises doivent exercer leur activité dans un cadre institutionnel leur permettant de se concentrer sur leurs objectifs : *la gouvernance d'entreprise*.

La diversité des écrits dans le domaine de la gouvernance, qui varient de l'économie financière aux sciences politiques et sociales, lui donne un caractère multidisciplinaire. Ainsi, il semble acquis que le gouvernement d'entreprise dans un pays, est intimement lié à son

¹ Un contrat incitatif optimal, peut être élaboré comme solution éventuelle d'un tel conflit. Cependant, avec des entreprises aussi grandes que celles observées sur les marchés actuels et avec un nombre d'investisseurs aussi grand, il sera difficile et coûteux d'élaborer des contrats décrivant toutes les éventualités.

² Le débat sur la séparation entre propriété et contrôle a été initié par Berle et Means (1932).

³ Selon la définition de l'OCDE.

niveau de développement, à sa structure de marché et à la sévérité de son système réglementaire et juridique. Par ailleurs, l'importance de la gouvernance d'entreprise est davantage accentuée lorsque les conséquences d'une mauvaise gouvernance deviennent perceptibles aussi bien au niveau de l'économie nationale qu'au niveau de la firme. En effet, la gouvernance peut être vue comme un instrument de renforcement du développement des marchés financiers et du maintien ou du rétablissement d'une cohésion économique. Notons à cet égard que les récentes recherches (La Porta et al. 1999) suggèrent que la classification binaire des modèles de gouvernance (système orienté-marchés et système orienté-banques) soit insuffisante pour la caractérisation des modèles de gouvernances à travers le monde. Plutôt, la gouvernance d'entreprise est liée à l'origine du système juridique du pays, l'applicabilité des lois, le degré de protection des investisseurs, et à la nature de sa démocratie⁴. C'est ainsi que la recherche dans ce domaine fait partie des programmes d'ajustement structurel parrainés par des organismes internationaux, tels que la Banque Mondiale, le Fonds Monétaire International, la Banque de Réglementation Internationale, l'Organisation de Coopération et Développement Économique.

S'il faut bien admettre que la gouvernance d'entreprise est un thème ancien en littérature financière, le débat est demeuré centré sur l'aspect relationnel entre la gouvernance d'entreprise (e.g. structure de propriété, conseil d'administration, etc.) et la valeur de l'entreprise. D'ailleurs, la pertinence de la recherche dans ce domaine était limitée par une supposition implicite: la diffusion de la structure de propriété. Cette image de la firme à propriété diffuse, a été introduite par Berle et Means (1932) et qui stipulait que les droits de propriété sont entre les mains d'un actionnariat minoritaire et diffus alors que le contrôle effectif de la firme est entre les mains des managers professionnels. Cette image de la firme a été adoptée pour développer plusieurs concepts en théorie financière: théorie de la firme, CAPM, APT, etc. De toute évidence, une telle image suppose que les marchés financiers sont parfaits, et qu'une concentration de propriété implique un risque supplémentaire non rémunérable, des coûts d'illiquidité, et donc un portefeuille non efficient. Mieux encore, certains mécanismes ont été proposés pour aboutir à une bonne gouvernance, entre autres, le marché de prise de contrôle, le marché des dirigeants, la politique financière, réglementation des marchés, etc.

⁴ La Porta et al. (1998) stipulent que les pays de droit coutumier protègent les actionnaires mieux que les pays de droit civil, qui ont une moins bonne qualité de protection juridique des actionnaires. Roe (2000) stipule que dans les pays sociaux-démocratiques il est plus probable d'avoir une structure de propriété concentrée.

Toutefois, ces mécanismes de gouvernance deviennent non pertinents dans un contexte où “les échanges économiques sont influencés par des priorités culturelles, associations d'affaires connexes, des réseaux sociaux ou politiques (corruption) ou familiaux”. La Porta et al. (1999) ont rapporté que la propriété à travers le monde est concentrée, que la séparation entre propriété et contrôle et l'utilisation des structures pyramidales, croisées, ou réciproques et l'utilisation des différentes classes d'actions sont la règle. Une telle évidence laisse songer qu'un système de contrôle à double vitesse est engendré. D'un côté, l'actionnaire majoritaire peut avoir un contrôle effectif des politiques de la firme, à cause de son poids dans le processus décisionnel. Mais, de l'autre côté, il peut aussi s'engager dans l'expropriation de la richesse de la firme, en imposant des décisions qui lui permettent d'extraire des quasi-rentes⁵ au détriment des autres intéressés à la firme. On parle d'expropriation, si l'assouvissement des besoins de l'actionnaire majoritaire se fait au détriment des autres intéressés à la firme. L'actionnaire majoritaire peut ainsi s'engager dans des détournements des activités de la firme au profit d'intérêts connexes aux siens, imposer des prix de transfert inter-firmes affiliées à son groupe, lisser les bénéfices, former des structures de propriété complexes, etc.

Les récents scandales financiers, la crise asiatique, l'effondrement de certains marchés ne font que mettre davantage en lumière l'importance de la gouvernance et peuvent expliquer en partie le regain d'intérêt pour la gouvernance d'entreprise. Bien que les écrits tendent à se multiplier depuis quelques années, peu de recherches ont essayé d'expliquer les déterminants de certaines structures de propriété pour mettre plus de lumière sur le comportement opportuniste de l'actionnaire majoritaire (ultime) et sur l'exploitation des investisseurs minoritaires. Par ailleurs, la recherche sur l'effet de la gouvernance d'entreprise sur la microstructure du marché financier est quasi inexistante. Ces limites peuvent s'expliquer par des lacunes au niveau de la construction des bases de données et au niveau de la méthodologie.

Afin de combler certaines de ces lacunes, nous étudions dans un premier chapitre la chaîne de propriété des firmes au Canada, jusqu'au propriétaire ultime. Nous caractérisons cette propriété ultime, la dissociation propriété-contrôle, et les mécanismes d'accentuation du contrôle. Nos résultats montrent que la structure de contrôle (propriété) de 1121 entreprises

⁵ Le terme quasi-rente est utilisé pour différencier les rentes qui découlent de l'avantage de contrôle des rentes organisationnelles issues d'une relation contractuelle.

canadiennes est concentrée. Seulement 17.53% des entreprises sont à propriété diffuse, 81.78% (62.79%) ont un propriétaire ultime à 10% (20%). Ce propriétaire ultime est dans 56.60% (41.06%) des cas une famille ou coalition de famille, 17.94% (11.15%) une institution financière, et 10.78% (9.65%) une entité gouvernementale. En moyenne, le propriétaire ultime détient 31.62 % des droits de vote et 25.69% des droits de propriété. Cette déviation entre propriété et contrôle s'explique par l'utilisation des structures pyramidales (33.5%), croisées (8.24%), réciproques (2.62%), et actions à classe multiples (16.1%). Ces mécanismes facilitent le comportement opportuniste du propriétaire ultime. Ainsi, comme symptôme d'expropriation, rapportons que le ratio de propriété sur contrôle est égal à 0.85, qui est relativement faible comparé aux autres pays du continent européen ou de l'Asie de l'Est (Faccio et Lang, 2001 et Claessens et al., 2000). Un autre symptôme d'expropriation a trait au placement des membres des familles des propriétaires ultimes à des postes clefs de leurs holdings (44.66%). Nous comparons ensuite certains indicateurs de gouvernance des entreprises canadiennes dont le siège est au Québec (QUBFs) à ceux des entreprises canadiennes dont le siège est en dehors du Québec (ROCFs). Nous entreprenons cette comparaison pour tester à la fois l'effet de l'origine des lois (La Porta et al., 1998), l'effet de l'état initial de l'économie et de l'héritage culturel (Bebchuck et Roe, 1999) sur la gouvernance d'un pays. Nous trouvons que les droits de vote et de propriété sont plus concentrés, l'utilisation des mécanismes pour accentuer le contrôle (e.g. structures pyramidales, croisées ou réciproques, actions à multiple droit de vote, etc.) est plus prononcée dans les QUBFs que dans ROCFs. Toutefois, la différence de la déviation entre contrôle et propriété entre les deux catégories de firmes est non significative. Nous examinons enfin les déterminants de la séparation entre droits de contrôle et droits de propriété. Nous trouvons que la taille de l'entreprise, la présence du contrôle familial et l'effet Québec (les entreprises dont le siège est au Québec) affect significativement la séparation entre droits de contrôle et droits de propriété.

Nous avons, ainsi, montré que l'actionnaire majoritaire dispose des moyens lui permettant d'approprier les richesses de la firme. Il va sans dire qu'il est assez surprenant de trouver que 35%⁶ des entreprises canadiennes inscrites en bourse de Toronto sont contrôlées via des structures pyramidales. Dans des telles structures les entreprises sont souvent reliées

⁶ Cette proportion est plus élevée que 15.01% pour l'Europe Continentale rapportée par Faccio et Lang (2002) et 25.75% la moyenne du Monde rapportée par La Porta et al. (1999), mais plus faible que 38.7% pour l'Asie de l'Est rapportée par Claessens et al. (2000).

par des liens financiers, plus ou moins formalisés, où le propriétaire ultime, au sommet de la pyramide, contrôle les entreprises affiliées en les plaçant à différents niveaux de la pyramide pour maximiser sa fonction d'utilité. Avec un système de gouvernance moins efficient, ce type de structure favorisera l'opportunisme. C'est dans cette optique que notre deuxième chapitre s'établit. En effet, nous examinons les déterminants, coûts et bénéfices de l'affiliation à une structure pyramidale. Principalement, nous rapportons une disparité entre les droits de vote et ceux de propriété pour les entreprises affiliées, les décisions de l'entreprise reflètent généralement les préférences du propriétaire ultime. En testant l'effet d'une telle affiliation sur la valeur de la société, nous trouvons un effet négatif et significatif. L'étude des entreprises affiliées suggère que les propriétaires ultimes, généralement des familles, ont tendance à combiner les droits de vote, de propriété, et la distance les séparant des entreprises affiliées pour minimiser (maximiser) leur exposition à des chocs négatifs (positifs).

Dans ce contexte, il est utile de se rappeler que se doter d'un système de gouvernement d'entreprise efficient est une démarche importante pour susciter la confiance dans les marchés et favoriser l'établissement de flux d'investissement à long terme plus stables. D'ailleurs, les turbulences qui ont secoué récemment les marchés de capitaux ont souligné à quel point il importe d'adopter des modes de gouvernement d'entreprise de qualité. Néanmoins, il n'existe pas d'étude empirique qui s'ait portée sur l'examen de l'effet de la structure de propriété ultime, et la séparation entre contrôle et propriété sur les marchés financiers et leur liquidité. C'est ce qui a fait l'objet de notre troisième chapitre. Plus précisément, nous étudions la relation entre la liquidité des titres financiers et la structure de propriété "ultime". Nos résultats suggèrent que la séparation entre le contrôle et la propriété affecte significativement et positivement l'écart vendeur-acheteur (*bid-ask spread*). Le contrôle par les familles qui sont au sommet des structures pyramidales et qui utilisent d'autres mécanismes pour accentuer leur contrôle augmente l'écart vendeur-acheteur. L'augmentation de l'écart vendeur-acheteur reflète les coûts d'asymétrie d'information induits par le comportement opportuniste de ceux qui détiennent des blocs de contrôle en disproportion par rapport aux droits de propriété. Finalement, en examinant la relation de simultanéité entre la structure de propriété et la liquidité des actions, nous trouvons que les détenteurs de blocs de contrôle préfèrent les titres les moins liquides, probablement dans l'espoir d'extraire des rentes tout en évitant les pénalités du marché.

À la lumière de cette évidence, et dans un contexte d'intégration croissante des marchés financiers et de la mondialisation des échanges et de la concurrence, des réformes de la gouvernance d'entreprise doivent être réalisées. Se doter d'un système réglementaire flexible et efficace quant à la protection des investisseurs minoritaires, limiter l'émission de multiple classe d'actions, limiter et contrôler les différentes structures de propriété (e.g. pyramidale, croisée ou réciproque, etc.), augmenter la transparence, la diffusion, et l'accessibilité de l'information, doivent prendre une place de premier plan dans les politiques réglementaires, afin de favoriser un fonctionnement efficace des marchés et pour que l'entreprise puisse remplir sa fonction de créatrice de richesse. Cependant, ces réformes doivent être engagées dans un contexte plus large que le contexte traditionnel d'amélioration de la transparence de l'information financière, du rôle des administrateurs et des managers (e.g. rapport Dey de la Bourse de Toronto, décembre 1994), mais plutôt dans un contexte plus global qui comprend les structures politiques, institutionnelles, et juridiques (lois et leur applicabilité). Notons à cet égard qu'il n'est pas impératif d'introduire des procédures formelles pour régir toutes les entreprises, mais, par contre, il l'est d'orienter les réformes pour garantir l'harmonisation des objectifs, privés et publics⁷.

⁷ Les entreprises peuvent adopter des systèmes de gouvernance propres à elles dépendamment de leurs caractéristiques et de leur environnement économique (OCDE).

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INTRODUCTION

Research on corporate governance has received increased attention and grown in popularity during the last five years. The on-going international financial integration, deregulation, privatization, globalization and recent collapses (e.g. Enron, WorldCom, etc.) make corporate governance more critical. Academicians and experts agree that “efficient” corporate governance is a pillar to ensure long-term financial stability and financial markets development. This insight has led various national and international organizations (e.g. The World Bank, OECD, OSC in Canada, among others) to work on principles of corporate governance. The role of corporate governance is further emphasized within the view of the firm as a nexus of contracts (Jensen and Meckling (1976))⁸. In fact, corporate governance principles call for application of laws, rules, and practices that insure a fair treatment of all firm’s stakeholders (investors, clients, debtholders, etc.), bargaining over ex-post quasi-rents generated through “incomplete contractual relationship” (Zingales (1998)). Such incompleteness stems from the non-possibility of including all possible future contingency in the contract at the time of drafting (*adverse selection*). It also stems from the unverifiability of the contracting parties’ actions (*moral hazard*)⁹. These costs inherent within the ‘nexus of contracts’, characterise the modern corporation (Jensen and Meckling (1976)).

In their seminal paper, Jensen and Meckling (1976) show that agency costs arise from asymmetric distribution of information between insiders (agents) who act on behalf of outsiders (principals) combined with the fact that results are not perfectly correlated with efforts of the insiders. These underlying asymmetric costs result from the separation between corporate ownership and control. In fact, the longstanding separation debate has not abated since the acclaimed publication of *The Modern Corporation and Private Property*, by Berle and Means (1932). They worried that professionally managed companies and the tendency towards widely held corporations would result in management taking effective control of corporate power. Given the discretion awarded to them, managers impose costs on the firm (e.g. pursuing non-value-maximizing objectives). Those costs originate from the inability of owners to effectively monitor the discretion awarded to managers, the moral hazard and

⁸ Jensen and Meckling (1976) define the firm as “a legal fiction which serves as a focus for the complex process in which the conflicting objectives of individuals ... are brought in equilibrium within a framework of contractual relationship”.

⁹ Corporate governance constitutes the institutional design for the contracting parties to agree on the allocation of residual control rights for all situations that are not specified in the contract.

potential for opportunism that come about when ownership and control are separate. Arguably, previous research shows a polarized debate concentrating on investigating whether the firm is management controlled or not and how to mitigate the agency costs originating within the managers-shareholders conflict.

However, recent studies by Shleifer and Vishny (1997), La Porta et al. (1998, 1999, 2000), Claessens et al. (2000), Faccio and Lang (2001), Gahdoun, Lang and Leslie (2003) among others, have begun to question the empirical validity of the Berle and Means' modern corporate image of widely held firms. They document that ownership concentration is common even in rich countries and show that the dreaded Berle and Means's image of corporate ownership is less than universal. They portray a world of concentrated ownership, often in the form of family-dominated holdings. They hold that cross-country diversity in ownership is related to laws origin and enforcement, politics and capitalism ideology, religious and cultural heritages, and the prevalence of rents. In particular they argue that Common Law regime, with its developed financial markets and investor protection mantle, are conducive to "good corporate governance" and protection of minority interests. It is not surprising that this debate has penetrated the study of law and the preservation of property rights and shareholder value and their effects on corporate governance.

Nevertheless, the determination of ownership structure is still under debate. For instance, recent literature attempts to explain the evolution and persistent cross-countries differences in corporate governance structures. More precisely, corporate governance structures are categorized by assigning countries into one of two groups. One group comprises countries with civil law and French (culture) heritage that exhibits a high level of ownership concentration and illiquid and less developed capital markets. A second group comprises common law (Anglo-Saxon) countries (e.g., U.K. and U.S.) that display widely dispersed ownership, liquid stock markets, and active market for corporate control. Indeed, La Porta et al. (1998) relate cross-country diversity in ownership to the origins of laws and their enforcement. They argue that the development towards dispersed ownership depends on the strength of shareholder protection provided by the law. They point out that civil law countries seem to have failed to provide effective protective law of "minority shareholders" and are more likely to display concentrated ownership. Stulz and Williamson (2001) document that legal system origin, culture, openness and religion are important factors in

explaining the shareholder rights protection and differences in corporate governance around the world.

However, these institutional arguments may not stand when we observe the variations of ownership concentration within equally developed countries and “sister” Anglo-Saxon countries (i.e. U.K., U.S. and Canada). Morck et al. (2001) argue that both Canada and the US have the same common law heritage, an ‘excellent’ legal system strongly protective of basic shareholder rights, and law enforcement. Furthermore, Canada and the US have “broadly similar factors endowments, and employ virtually identical technology and human capital in similar institutional frameworks”. Yet Canada displays more corporate ownership concentration.

Although there has been an enormous amount of effort devoted to understanding corporate governance differences between common law and civil law countries, there has been relatively little effort devoted to explain the differences among the same group of countries. In addition, the question if the law system and the cultural heritage have an effect on the corporate governance structure at the firm level has not been previously tested. Indeed, this thesis attempts to fill this gap and add to this discussion. It is motivated by the belief that a deeper understanding of why corporate governance systems have evolved in different directions helps to draw conclusions for future reforms to enhance market development and efficiency. The present thesis is committed, then, to exploring some forefronts of corporate governance development in a North-American context, where Common Law and investor protection are the rule and capital markets are supposed to be among the most developed around the world.

More precisely, the primary motivation of the first essay of this thesis is to conduct an in-depth empirical analysis of corporate control and its separation from ownership within Canadian publicly traded firms. Under the similarity of both countries in almost all-institutional aspects, it would be interesting to contrast the US ownership structure with its neighbouring country Canada for a large sample of firms. Of course, the examination of Canadian corporate ownership structure by itself is important for a large sample of traded firms. Our first essay provides four contributions to the literature. The first contribution stems from conducting in-depth analysis of the ownership structure and means of enhancing control in Canada. We traced back the ownership chain for all the layers until the ultimate owner of almost all Canadian listed firms in the Toronto Stock Exchange. The second contribution

stems from testing the impact of law regime on ownership structure at the firm-level. We gather data in the same way and for the same year as Claessens et al. (2000), Faccio and Lang (2001) and Gadhoum et al (2003) to allow comparisons with Anglo Saxon/ common law countries. We focused on the comparison between Canada, U.S. and U.K. Surprisingly, our results suggest more ownership concentration in Canada and the presence of potential expropriation risk of minority interests by large ultimate owners who seem to make pervasive use of different means (e.g., pyramidal holdings, cross holdings and reciprocal holdings) to enhance their control over their ownership. The third contribution stems from testing the “path dependence” hypothesis¹⁰ (Bebchuck and Roe (1999)) to demystify the “Canadian puzzle”: why Canadian Ownership is so different from that in the U.S. (and U.K.)? We speculate that the French heritage of Quebec and its civil law regime may explain its ownership status. The enduring and uniqueness features of Quebec as part of North America are rooted in its history. It seems that the French traditional way of doing business endured in Quebec to protect the French culture and heritage. As a matter of fact, our research of the history of Canada gives us some insights that the Canadian ownership structure might have been influenced by the Quebec’s uniqueness within the confederation. Our results suggest that ownership structure and governance system of Quebec are closer to those of France than those of the other provinces in Canada, mainly because Quebec, like France, has a civil code, but all other provinces operate under the common law code. Since politics and law about exhaust the sources of credible exogenous explanations for corporate structure and conduct, Canada would seem to illustrate some form of “path dependence” whereby first initial conditions of law, regulation or politics, not captured in the broad measures deployed so far by researchers, would explain the puzzle of the Canada’s very different corporate conduct (Bebchuck and Roe (1999)). To our knowledge, no prior study has treated the ownership-control separation as an endogenous outcome of the decisions that reflect the influence of CS. Thus our fourth contribution stems from examining what empirically determine the control-ownership separation. Our Canadian sample offers an ideal model not only to examine our empirical question but also to answer other related questions. Overall, our findings show that firm size, risk and family control are not neutral in shaping such separation. More importantly, we find that the environment (e.g. culture heritage) in which the firm operates is

¹⁰ According to Bebchuck and Roe (1999) initial conditions of law, regulation and politics put a nation on the path to a corporate ownership structure differing substantially from that of sister nations with similar current legal and political structures.

an important factor for such separation, and consequently for the risk of expropriation (e.g. private benefits of control).

The evidence reported in the first essay suggests that ultimate owners to accentuate the deviation between control and ownership and enhance their corporate power, commonly use pyramidal holdings (PH). Other mechanisms, such as multiple class shares, non-voting shares, and cross holdings, among others, are used by the controlling shareholders to separate ownership from control. However, PH's appear to be the favored device to accentuate such separation (La Porta et al, 1999). For instance, it is claimed¹¹ that PH's represent nearly 20% of the ownership structure in Western Europe. Figures are more impressive in East Asia: 67% of the firms in Indonesia are pyramidal affiliates, 55% in Singapore, 49% in Taiwan and 37% in Japan. In Canada, 35% of firms are controlled through pyramidal structures. In such settings, we usually observe ultimate owners controlling an array of affiliated companies through a “cascade” of intermediary corporations forming a pyramidal structure. PH entails a set of channels through which the controlling shareholders (i.e., the ultimate owners) orchestrate corporate behavior within the holding to secure control over benefits and rents.

Despite the prevalence and economic importance of PH, little effort has been devoted to pyramidal affiliation determinants and valuation effects. Accordingly, the present effort differs from prior work in several ways. Unlike previous literature, we focus on the *determinants* of PH that have fewer formal intercorporate ties than typical conglomerate holdings. Thus, we conjecture that dilution and other opportunistic behavior are more probable within PH than within typical holding groups. Another innovation stems also from the fact that ours is one of the rare studies to investigate the governance of PH within a country such as Canada, with a developed capital market and common law heritage. Canada inherited its common law-based system from its British colonial past. More importantly, this study is the first to examine the determinant of the ownership chain length separating the ultimate owner (at the apex) from affiliate firms. We proxy this distance by the ratio of ultimate ownership over ultimate control, which is highly (negatively) correlated with the number of layers separating the ultimate owner from affiliated firms, and examine its determinants. Finally, we examine the effect of affiliation to PH on corporate value.

¹¹ See La Porta et al. (1999), Claessens et al. (2000), Faccio and Lang (2001).

The evidence documented in this essay suggests that ultimate owners, mostly families, tend to make pervasive use of opportunistic practices aimed at stripping assets from subsidiaries and re-deploying cash flows from “affiliated cash cows” in favor of tightly held firms in a fashion fitting their personal utility. Our results suggest that, as expected, distant ultimate owners who seek to amass control and exert opportunistic behavior at the expense of corporate affiliates head pyramidal holdings. We further report a negative effect of pyramidal ownership on corporate value. However, we contribute to the literature by controlling for the selection bias between corporate value and pyramidal affiliation. As ultimate owners may acquire low performance companies, possibly placing them far down in their PH, to limit eventual negative impacts, and using them to manage rent appropriation. Our *Heckman* estimate of this selection bias fully subsumes all negative effect of PH on corporate value.

The evidence reported in the first and second essays and the finding of rent-seeking behaviour by the ultimate owners are deemed interesting. Because they provide a basis to argue that corporate governance structure in Canada seems to provide a favourable arena for ultimate owners to engage in expropriating behaviour and to generate private benefits of control not shared by minority shareholders. An interesting question, which we treat in the third essay, thus arises as to how investors interpret the occurrence of potential costs in the presence of large controlling owners under the “Anglo-Saxon” model. To answer this question, we investigate the relationship between stock liquidity and the ultimate ownership structure. To our knowledge, this is the first study to examine the relationship between ultimate ownership structure and the means of enhancing control and stock liquidity. We also innovate by providing empirical evidence on the effect of ultimate ownership and its separation from ultimate control on the bid-ask spread, a commonly used measure of stock market liquidity. Our results suggest that the presence of families increases the bid-ask spread. In addition, the magnitude of the deviation between ultimate ownership and ultimate control in the presence of families is important in determining the bid-ask spread. Furthermore, we document that mechanisms of enhancing control, say pyramid in the presence of families, significantly affect bid-ask spreads. Our evidence shows that bid-ask spreads only relate to the presence of families but not to other types of controlling owners, and are consistent with the reverse causality in that controlling shareholders look for stocks that display less liquidity to avoid monitoring by outside investors. We also use intraday quotes and prices (with a 6-second interval) to compute three alternative measures of asymmetric information: the average dollar spread, the average bid-ask spread and the

adverse selection cost calculated using the Glostén-Harris model (ADSC-*GH*). We innovate by documenting that the deviation between ultimate control and ultimate ownership is positively related to the adverse selection component. Overall, our robustness check supports our previous conclusions.

The separation of ownership from control confronts all large corporations with agency costs. In Canada, agency problems are between controlling owners and minority shareholders since widely held corporations are more the exception than the rule and the predominant ownership structure is family-controlled, with top management positions in hands of extended family members. Thus, in a first essay, we have traced out some characteristics of Canadian ultimate ownership structure and compared them with the ultimate ownership structures of West European and East Asian firms.

In summary, our findings reveal that despite its democratic common law/Anglo-Saxon regime, and however developed its financial markets and investor protection mantle; Canadian corporate shareholding confers more separation between control and ownership than “sister” countries, which give ultimate owners the possibility to extract undue rents, leaving higher agency costs inherent in Canadian corporate market place. As a matter of fact, we find that controlling shareholders of Canadian companies frequently use pyramids, cross holding, reciprocal holding, appointment of related members to top-management positions, and multiple class voting shares to gain control. Besides, our results also support the hypothesis that ultimate owners prefer funding separate projects, conceivably because they thus maximize the value of the default options inherent in their limited liability vis-à-vis the controlled firms.

We also find a mismatch between cash flow rights and voting rights in firms affiliated to pyramidal holdings and that corporate policies reflect cash distribution preferences of the ultimate owners and show a negative effect of pyramidal ownership on corporate value. We find that the presence of a family at the helm as both top owner and manager increases the bid-ask spread, the plausible interpretation being that the situation entails more asymmetric information and possibly more dilution of minority interests. Our findings also provide some basis to argue that the bid-ask spread reflects the asymmetric information costs contained in the ultimate control, rather than the ownership, variable. As a result, the control-ownership deviation likely captures the effect of ultimate control and further affects the bid-ask spread.

The upshot is that the risk of opportunistic behaviour positively affects the bid-ask spread and, hence, increases the asymmetry and agency costs.

The evidence reported in this thesis is important for many reasons. Firstly, Canada, despite its common law and Anglo-Saxon heritage and ‘excellent’ investor protection and law enforcement, displays concentrated corporate ownership with predominant use of mechanisms allowing ultimate owners to enhance their control. Canadian ownership structure seems to illustrate path dependence, whereby first initial conditions of law, regulation or politics, not captured in the broad measures deployed so far by researchers, would explain the puzzle of the Canada’s very different corporate conduct.

Secondly, the effective governance of pyramidal ownership requires the costly monitoring of the key actors in the pyramids, starting with ultimate owners. This might be done by committing to a complete disclosure policy, adding outsiders to the board, imposing one-share-one-vote rules and sanctions against insider trading and market manipulations. However, more research is needed before the problem of governance within pyramidal structures can be tackled effectively. On the ethical front, future research efforts might be well spent on how political connection and corruption influence the corporate marketplace. (Canada has many prominent politicians in such delicate situations. Unfortunately, those questions have been woefully neglected).

Thirdly, the results of our third essay provide additional insight into the determinants of firm’s costs of capital, and should suggest a future research agenda for empirical and theoretical finance, to address, in greater depth, the question of corporate ownership, and its separation from control and their effect on market microstructure. More generally, our findings should improve market microstructure, regulation and investment management by the knowledge of factors that influence liquidity and trading activity. A better understanding of these determinants should increase investor confidence in financial markets, and thereby reduce the risks of being expropriated by the controlling shareholders (e.g. enhancing the efficacy of corporate policies) and lower the firm’s cost of capital.

Overall, recent public disclosures of governance fraud cases in U.S. and Canada had (still has) an important impact on capital markets. Standard setters and regulators, more than ever before, feel pressed to impose tougher governance rules that may circumvent ultimate owners’ ability to engage in expropriation activities. We submit that the evidence gathered in

this thesis¹² might be useful to regulators and law-setters, at various levels, including disclosure rules in accounting standards and corporate law enforcement, in order to assure and improve the efficiency of the Canadian stock market (enhancing corporate governance effectiveness and market efficiency, reducing externalities, etc.). Market regulation, however, should emphasize the inter-shareholders conflicts (large versus minority shareholders) that are exacerbated by the preponderance of closely held firms (through the use of multiple class shares) and highly interconnected corporate holdings (through pyramidal, cross, and reciprocal holdings). Similarly, regulators and legislators ought to focus more attention on political connections of Canadian tycoons, the disclosure rules, and the enforcement of corporate laws, to ensure the efficiency of the Canadian stock market.

¹² Results of this research were presented at the Department of Financial Market of the Bank of Canada to examine the practical implications of these findings for Canadian corporate landscape. The Third essay won the *Best Paper award in Finance in Canada*. A long summary of this thesis was awarded the *Toronto Society of Financial Analysts Research Award for Original Research on Canadian Capital Markets*.

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CHAPTER I:

Control-Ownership Separation and the Relative Role of Cultural Heritage and Law Regime: Demystifying the puzzling Canadian Ownership Concentration

Abstract:

We analyze the ultimate ownership structure of 1,121 Canadian listed firms. We contrast our findings to those reported in recent research for U.K. and U.S. to test the law regime hypothesis (La Porta et al. (1998)). We document that Canada have very different ownership structures from U.K. and U.S. To investigate this “puzzling” evidence, we use the “path dependence” hypothesis (Bebchuck and Roe (1999)) to compare the governance features of firms headquartered in Quebec (the Canadian Franco-Saxon province) to those in the rest of Canada. We document that Quebec-firms display more ownership concentration and more pronounced separation than firms in the rest of Canada. Then we examine what empirically determines the control-ownership separation. We find that such separation is significantly associated with firm size, family control and the environment in which the firm operates. To some extent, our results support the path dependence argument of Bebchuck and Roe (1999). We submit that these features may exacerbate the unfair treatment of minority interest, which would undermine the attractiveness of stock market to investors.

1. Introduction

The enduring ownership-control separation issue in corporate governance is rooted in Berle and Means (1932) who viewed the rise of professional managers as conducive to managerial control within widely-held firms at the expense of shareholders. The recent literature, however, questions this view's validity (e.g. Shleifer and Vishny (1997), La Porta et al. (1998, 1999, and 2000), Claessens et al. (2000, 2002), Faccio and Lang (2001), Gadhoun et al. (2003), Stulz and Williamson (2001)). Using cross-country analyses to compare some "aggregate" features of corporate governance, these studies portray a world of concentrated ownership; often in the form of family-dominated holdings and document that cross-country diversity in ownership structure and investor protection is related to the origin of laws and the quality of their enforcement.

La Porta et al. (1998) sustain the view that countries functioning under a Common law regime, mainly the "Anglo-Saxon" model, offer better protection to the small investors and more suitable conditions for the development of large and more liquid capital markets than do countries under Civil law regimes mainly the "Franco-Saxon" countries. In fact, the two systems differ in many respects. For instance, English Common laws protect private property rights; in contrast, civil codes of French origin (in Napoleonic times) were constructed to solidify State power (North and Weingast (1989)). In addition, the two regime types differ in their ability to deal with changing conditions (Beck et al. (2002)). Civil law relies on changes in statutory law rather than on jurisprudence. Civil Code leaves less room for the judges' interpretation and claims that justice is better applied with periodically revised fixed rules. By contrast, as argued by Stulz and Williamson (2001), common law countries, with their reliance on a constantly evolving jurisprudence, ensure that 'the enforcement of laws can adapt to changes in the economy'. Stulz and Williamson (2001) document also that not only law regime but also culture, openness and religion roots are important factors in explaining the degree of shareholder protection and consequently the differences in corporate governance systems around the world.

Disturbingly, neither such appealing institutional arguments nor the law origin stand when we compare Canadian governance structure to other "sisters" Anglo-Saxon countries. In fact, Canada presents broad similarities with U.S. and U.K in regard with capital markets, law regime and culture heritage, yet it displays high ownership concentration. However, previous research on Canadian corporate governance was limited to small samples of public

firms and proceeds as if Canadian firms were also organized as their US counter-parts. Indeed, in study, we seek to fill in this gap in our knowledge. Our first contribution stems from conducting in-depth analysis of the ownership structure and means of enhancing control in Canada. We traced back the ownership chain for all the layers till the ultimate owner of almost all Canadian listed firms in the Toronto Stock Exchange.

Our findings corroborate with much of existing empirical research which documents that public corporations around the world are far from being diffusely owned. We report that, in contrast to large U.K. and U.S. firms, public firms around the world often have dominant shareholders, usually family corporate dynasties. More importantly, controlling shareholders frequently use pyramidal, cross or reciprocal holding, multiple class shares, or appoint related members to top-management positions to enhance the separation between voting power and ownership rights. Such separation gives rise to some economic concerns. Controlling shareholders (CS, hereafter) may not have the incentive to align their interests with minority shareholders. A separation enables them to maintain a lock on the voting power and securely extract private benefits without internalizing total financial costs related to their appropriating behaviour (see Appendix for an example). As a matter of fact, Claessens *et al.* (2002) show that an entrenchment effect relates to the separation between control rights and cash flow rights held by large shareholders, and leads to a decrease in firm value. Also, ownership structure may influence corporate information disclosure and asymmetric information. Large shareholders, with control rights exceeding cash flow rights, may have the incentives to obtain, disclose or hide the necessary information to effectively control corporate policies to favour their selfish plans. This will lead to weak (voluntary) information disclosure and higher asymmetric information. Chau and Gray (2002) suggest that ownership diffuseness is positively associated with (voluntary) information disclosures and Ho and Wong (2001) provide (weak) evidence on the association between corporate disclosure and controlling shareholder-dominated firms¹³. As well, Attig, *et al.* (2003) show that information asymmetry and poorer liquidity in stock market are mainly driven from larger deviations between ultimate control and ownership.

In spite of the importance of this concept, we are unaware of a study that documents what empirically determines such a separation. In fact, the focus of previous research has

¹³ These studies did not however examine the effect of the control-ownership separation on corporate information disclosure.

been the determinants of corporate ownership distribution (Demsetz and Lehn, 1985, La Porta *et al.*, 1998, La Porta *et al.*, 1999, among others), or the effect of such separation on corporate value (Claessens *et al.*, 2002), or asymmetric information (Attig *et al.*, 2003). To our knowledge, no prior study has treated the ownership-control separation as an endogenous outcome of the decisions that reflect the influence of CS. Thus, the ultimate goal of this paper is to bring into focus the determinants of such separation, as measured by the difference between ultimate corporate control and ultimate ownership stakes.

Our second contribution stems from examining what empirically determine the control-ownership separation. Our Canadian sample offers an ideal model not only to examine our empirical question but also to answer other related questions. First, recall that La Porta *et al.* (1998) sustain the view that countries functioning under a Common law regime, mainly the “Anglo-Saxon” model, are likely to have diffusely owned firms. Though, our results suggest that widely-held corporations, in Canada, are more the exception than the rule (the opposite of the U.S.) and usually firms are family dominated where agency and asymmetric information costs seem to stem from the control-ownership separation, which enables controlling shareholders to extract private benefits of control. Second, of relevance to our empirical investigation is the argument of Bebchuck and Roe (1999) on “path dependence”. They argue that initial conditions of law, regulation and politics put a nation on the path to a corporate ownership structure differing substantially from that of sister nations with similar current legal and political structures. In addition, recent research emphasizes the relatedness between the environment in which the firm operates and its disclosure policy and asymmetric information costs. In this context, we hypothesize that culture heritage (and law origin) affects the control-ownership separation. We advocate that firms operating in an environment within a French (cultural) heritage (with weak protection of minority interests) may display larger separation than those operating in an Anglo-Saxon environment (with strong protection). In Canada, features coexist that make it ideal to test this argument.

In particular, grounds of differentiation between legal environment in Quebec and in the rest of Canada are related to the French (cultural) heritage and the Charter of the French Language¹⁴. We use a dummy variable to distinguish firms that face (almost) the same mantle

¹⁴ For instance, this charter aims to ensure the survival of the French language and employment opportunities for French-speaking people. In fact, after the election of the PQ in 1976, the Quebec government adopted the mentioned charter to make French the only language of the Quebec legislature in courts and business. Accordingly, as argued by Graham *et al.* (2000), organizing corporate activities in Quebec becomes costly for Anglophone firms.

of legal restrictions, but have different historical culture: firms headquartered in the French speaking province (Quebec) and those in the rest of Canada (Anglo-Saxon provinces). We conjecture that the French heritage (and its Civil law regime) of *Quebecois* firms may have an impact on the Canadian ownership structure. Overall, our findings show that firm size, risk and family control are not neutral in shaping such separation. More importantly, we find that the environment (e.g. culture heritage) in which the firm operates is an important factor for such separation, and consequently for the risk of expropriation (e.g. private benefits of control).

The paper proceeds as follows. We present our hypotheses and data construction in Section 2. Results are shown and discussed in section 3. We conclude the paper in Section 4.

2. Data construction and hypotheses

2.1. Variables of ownership and control

We start with the Canadian listed firms appearing in *Stock Guide* 1996, a year which lends itself for comparisons with ownership structures reported for other countries in recent research (e.g., La Porta *et al.*, 1999, Claessens *et al.*, 2000, and Faccio and Lang 2002). Data on the identity and size of direct and ultimate ownership and control stakes are collected manually from two sources: (1) *The Financial Post* "Survey of Industrials" and "Survey of Mines and Energy Resources" and (2) Statistics Canada *Intercompany Ownership in Canada*. These sources provide information on all major shareholders and on their stakes, as well as directors' ownership for all listed firms in 1996. Cases for which these sources show disagreements about shareholder identity or stake are reconciled through *Stock Guide*. We exclude all affiliates of foreign companies since we cannot follow their ownership chain, and, similarly, for the cases with no traceable ultimate owners due to the use of street securities. After screening we are left with 1112 firms with identifiable information on their ownership structure. Following previous studies, we look at shareholders who control over 10% of the votes¹⁵. Our key variables are: the ultimate ownership (UOWS) stake measured according to the following formula:

$$UOWS = \sum_{j=1}^m \prod_{i=1}^n OW_{i,j}$$

¹⁵ We consider also the threshold of 20%.

where OW is the direct ownership stake at layer i of the ownership chain j ; and the ultimate control (UCOS) is measured using the following formula:

$$UCOS = \sum_{j=1}^m \min(CO_i)_j$$

where CO is the direct control stake (as % of votes) at layer i of the ownership chain j (see appendix for an example). These two variables allow us to compute a proxy for the separation between ownership and control (the dependent variable): “UCOS minus UOWS”. To further characterise the governance of the Canadian corporate landscape, we consider three classes of variables: (1) variables related to the (direct and ultimate) control distribution; (2) variables related to the means of enhancing control; and (3) variables related to the existence of an ultimate owner and its type. For the means of enhancing control we consider the use of pyramidal holding, cross holding, reciprocal holding and multiple class shares (see La Porta *et al.*, 1999; Claessens *et al.*, 2000, Faccio and Lang, 2002). We allow for five types of ultimate owners: 1) a family or an individual, 2) the State, 3) a widely-held financial institution 4) a widely-held corporation, or 5) a miscellaneous investor (i.e., a charity, a voting trust, a cooperative, a minority foreign investor). Each type is a standard binary variable with level 1 or 0. The Appendix illustrates the procedure of data gathering through the case of the Velan-Family Group.

2.2. Hypotheses

Shleifer and Vishny (1997) argue that if “...large owners gain nearly full control of the company and are wealthy enough to prefer to use firms, to generate private benefits of control that are not shared by minority shareholders...”. This behaviour could be further exacerbated by having the control rights exceeding the ownership rights. CS can realise this objective either via the use of multiple class shares or multilayered-pyramidal holdings. To some extent, this separation between ownership and control enable CS to *securely* consume private benefits of control. For instance, with a *large* control-ownership separation CS have little incentives to disclose information (in excess of mandatory requirements), as they will be disproportionnally concerned with the economic consequences of the corporate decisions (see Appendix for an example). Klassen and Mawani (2000) suggest that management incentives (e.g. stock options) help to ensure a higher degree of transparency through disclosures. Though in family-controlled companies, CS usually appoint related members to top management positions (in many cases CS cumulate the Chairman, CEO, and president

positions). This would help serving their selfish plan and reduce the level of information disclosure.

Arguably, the ownership-control separation is an indicator of the private benefits of control. We advocate that the control-ownership separation is more pronounced in firms with large private benefits of control. Hence, to explain cross-sectional patterns in the separation between corporate ownership and control we rely on variables that may impact the size (and easiness of extracting) of private benefits of control. We consider the following variables:

Firm size: is measured by the natural logarithm of the value of total assets (SIZE) in 1996. We can expect firm size to be inversely related to the separation between ownership and control. As it would be expensive for CS to buy shares to gain enough control over the firm. Furthermore, some studies have shown that firm size is positively related to information disclosure (Adrem, 1999; Hope 2003, among others). However, theoretical models of Bebchuck *et al.* (2000) and Wolfenzon (1999) predict that larger companies would be more likely associated with high diversion levels (e.g. private benefits). In addition, CS can increase the size of their firms without losing control. For instance, using multiple class shares enables CS to wrest control of the firm and benefit from minority investors' capital¹⁶. This will yield a mismatch between CS' cash and voting rights. As a result the divergence of interests between CS and minority investors, and may motivate the former to "over expand" (Morck *et al.*, 2001).

Risk policy: the variance of daily stock returns (RISK) in 1996 is used as a measure of risk taking policy. We may expect a positive relationship between risk and the separation between ownership and control. Recall that as a result of the limited liability principle, CS' losses are limited to the amount of capital committed to their firms. Thomadakis (1992) argues that limited liability creates for the firm¹⁷ a "bundle of default options" against claims by all stakeholders including other (e.g. minority) shareholders. By further separating cash flow rights from ownership rights, CS could insure control over default options available in the their firms . Aggressive risk-taking policy can be an instrument to maximize the value of

¹⁶ For example, in our Canadian sample, we found cases where one class is bearing 500 votes per share and the second class 1 vote per share.

¹⁷ The firm is defined as a nexus of contracts with a set of bearers of contingent claims. While Thomadakis' theory does not refer specifically to PH, focusing mostly on industrial groups for which no particular structure is specified, the concepts extend easily to PH.

default options, especially if CS would bear only a part of the economic consequence of such policy. However, a negative relationship between risk and control-ownership separation could be expected. As CS may be under-diversified because of a large stake in a single company (or a family of companies). Thus, CS will be exposed to idiosyncratic risk and the higher the level of risk in a firm the greater this exposure is. Hence, CS may gain private benefits of control but also suffer from exposure to idiosyncratic risk¹⁸. The greater then the idiosyncratic risk, the less appealing being a CS becomes and therefore the less likely to observe a separation in that firm.

Dividend policy: we use dividend payout ratio measured by the proportion of earnings distributed as dividends to common shareholders (DIVR). Dividend payout could be either positively or negatively related to the control-ownership separation. A negative relationship could be expected because CS with weak (or no) separation between ownership and control, may be more likely concerned about economic (cash flow) benefits rather than private benefits of control¹⁹. In addition, paying dividends might reflect the cash preferences of ultimate owners. For instance, entrenched CS, especially those at the apex of pyramidal holdings, may wish to retain earnings in order to keep control of the cashflow rather than pay it out and lose control of it. On the other hand, we can expect a positive relationship. Faccio *et al.* (2001) find that CS prefer distributing higher dividends to affiliates benefiting from a large ownership/control ratio in order to attenuate the dilution concerns of minority shareholders²⁰.

Leverage policy: we measure financial leverage (DEBT) by the debt ratio. We have argued that the separation between ownership and control increases the agency and asymmetric information problems. Consequently, external funds are expected to be more expensive. A negative relationship may be then expected between leverage and the ownership-control separation. In addition, debt holders can price protect themselves, through restrictive covenants requiring an increased level of information disclosure (Hope, 2003), to reduce asymmetric information and agency costs. Given that CS want to avoid external

¹⁸ Which diversified minority shareholders do not suffer.

¹⁹ Under this argument we are making an assumption that economic benefits mean higher dividend, though we recognise that the economic effect of dividend policy is far more complicated than this.

²⁰ For example, DeAngelo and DeAngelo (2000) document that the Times Mirror Company's dividend policy reflects the cash distribution preferences of the controlling family.

control, they may favour conservative leverage policy if they are looking for private benefits of control (large separation)²¹.

Path dependence: A noteworthy argument to our investigation is that of Bebchuck and Roe (1999). They argue that initial conditions of law, regulation and politics put a nation on the path to a corporate ownership structure differing substantially from that of sister nations with similar current legal and political structures. In addition, Hope (2003) document that legal origin and national culture are not neutral in explaining firm-level disclosure. Finally, La Porta *et al.* (1999) argue that in French Civil regime, minority interests are less likely to be protected and it is more likely to have large blockholdings. We extend this argument to speculate that firms operating within a French Civil regime may have higher control-ownership separation than those in Anglo-Saxon Common regime. Accordingly, we conjecture that the coexistence in the Canadian model of both a French heritage (and its Civil law regime) and an Anglo-Saxon heritage may impact the cross-section patterns of the ownership-control separation in Canada.

Given the above arguments, we expect that culture heritage and law regime (origin) affect the control-ownership separation. In this context, our research of the history of Canada gives us some insights to argue that the Canadian ownership structure might have been influenced by the Quebec's uniqueness within the confederation²². More precisely, we use the argument presented in Bebchuck and Roe (1999) on path dependency of ownership structure to distinguish between firms headquartered²³ in the mostly French speaking province (Quebec) and those in the rest of Canada (mostly English speaking provinces). We speculate that the (historical) French heritage of Quebec may influence the Canadian cross-sectional pattern of corporate ownership. The separation between ownership and control in Quebecois firms may be more pronounced than that of firms in the rest of Canada. This would reflect a

²¹ However, if corporate diversion is not easily verifiable, CS might opt for debt financing (with its commitments and control over cash distributions, etc.) to gain a reputation of being protective of minority interests.

²² A summary of the major historical steps and their effects on Canadian governance are available from the authors. Note that Canada inherited its common law based system from its British colonial past. However, the Quebec province, predominantly French-speaking and second most populous, functions under a combination of both Civil and Common law.

²³ We recognise that using firms headquartered in Quebec may not totally capture the effect we are looking at. Because, there are firms that are nominally headquartered in Quebec but really operate throughout Canada. Eventually, one could develop a measure based on location of sales or employees geographically. But this was not possible for us due to data availability.

higher degree of expropriation. We should note that traded firms in Quebec and in the rest of Canada are created under the same law: *Canada Business Corporations Act*. In addition, stock market regulations in the different provinces of Canada are not remarkably different. Hence, any difference, in corporate ownership structure, can be ascribed to the historical context of Quebec rather than current legal environment. We use a dummy variable to distinguish firms that face (almost) the same mantle of legal restrictions, but have different cultures and histories: firms headquartered in the French speaking province (Quebec) and those in the rest of Canada (Anglo-Saxon provinces).

Family control: we expect a positive relationship between family control and the control-ownership separation. Usually, family CS combine such separation with the appointment of family related members in top management positions (e.g. Chairman, CEO, President or even cumulating the three seats). This will enable them to engage in the extraction of private benefits of control (e.g. optimising their selfish plans) without necessary disclosing information (in excess of mandatory requirements). We use a dummy variable equals to 1 when the sampled firm is ultimately controlled by a family and 0 otherwise.

To assess the determinants of the control-ownership separation (SEPR) we use the following model:

$$SEPR_i = \alpha + \beta' \underline{\Gamma}_i + \delta * QUBF_i + \varepsilon_i \quad (1)$$

where $SEPR_i = UCOS_i - UOWS_i$, $\underline{\Gamma}_i$ is a set of firm specific control variables, QUBF is a dummy variable that equals 1 for a firm that is headquartered in Quebec. α , β , and δ are parameters to be estimated, and ε_i is an error term.

3. Results

3.1. Descriptive statistics: who owns Canadian companies

Table 1 reports the descriptive statistics for the control distribution (Panel A) and distribution for each ultimate ownership type (Panel B) of Canadian public firms. To compare our results with recent and similar sampling research, which can enrich our discussion and better position our findings about Canadian ownership, we report also in Table 1 results for two other Common Law/Anglo-Saxon countries: U.S. and U.K.²⁴. In Panel A- Table 1, we

²⁴ Data for U.K. is from Faccio and Lang (2002) and for U.S. is from Gadhoum, Lang and Young (2003).

document that in Canada the first largest and the second largest blockholders control on average 33.58 and 6.88 percent respectively of the firm's voting power. When we examine the ultimate stakes, we find that the largest block of control and the largest block of ownership average 31.62 and 25.69 percent. The average block of control and ownership in Canada are larger than those reported for U.K. (25.13 and 22.94) and US (18.36 and 16.74).

Next, we look, in Panel B-Table 1, at the types of ultimate owners, at both the 10% and the 20% levels. We find that, at the 10% threshold, only 17.54% of Canadian firms are widely-held. When the control threshold is increased to 20%, this proportion of Canadian widely-held firms rises to 36.24%. These figures are lower than those reported for U.K. (62.79) and U.S. (71.89). These results suggest that similarity in corporate ownership structures among countries with the same Anglo-Saxon heritage and Common Law regime do not stand when we compare Canada, US and UK.

Table 1: Descriptive statistics of ownership and control in Canada, U.S., and U.K.

The table below displays descriptive statistics of corporate control and ownership distribution of 1112 Canadian traded corporations (Panel A and B). Data are collected from the *Financial Post* (FP) "Survey of Industrials" (1996) and Statistics Canada *Intercorporate Ownership in Canada* (1996). Table 1 displays also results for U.K. and U.S. reported in Faccio and Lang (2002) and Gadhoun, Lang, and Young (2003), respectively.

Panel A: Corporate Control Distribution							
Average size of direct block of control in %				Average size of ultimate stakes			
First largest	Second largest	Third largest		First largest	Second largest		
Control	Control	Control	Ownership	Control	Ownership	Control	
Canada	33.58	6.88	1.72	25.69	31.62	5.89	8.10
U.K.	n.a	n.a	n.a	22.94	25.13	n.a	n.a
U.S.	18.74	6.33	3.06	16.74	18.36	2.95	3.31
Panel B: Frequency distribution of the type of ultimate owner							
	10% level			20% level			
	Canada	U.K.	U.S.	Canada	U.K.	U.S.	
Widely-held firms	17.54	n.a	40.26	36.24	63.08	71.89	
Firms with ultimate owner	81.78	n.a	59.74	62.79	36.92	28.11	
	Ultimate owner type						
	Canada	U.K.	U.S.	Canada	U.K.	U.S.	
Family	56.60	n.a	36.60	41.07	23.68	19.82	
Widely-held financial institution	17.94	n.a	16.33	11.15	8.94	4.66	
Widely-held corporation	10.79	n.a	3.91	9.66	0.76	2.41	
Government	4.46	n.a	0.17	2.03	0.08	0.00	
Miscellaneous	10.88	n.a	2.72	4.96	3.46	1.22	

Remember that generally, the ultimate owner tends to hold an influential control stake to generate private benefits at the expense of minority interests and to dominate management. The probability of such exploitation will depend on the type of the ultimate owner, his control and cash flow stakes, and other institutional factors (legal system, investor protection, etc.) as described in La Porta *et al.* (1999). Panel B-Table 1 shows that family control is more

pronounced in Canada than in U.K. and U.S. More precisely, Canadian families control 41.06 (56.60) % of the voting power at the 20 (10) % threshold which is sharply higher than the proportion of 23.68% and 20.00% of family controlled firms in U.K. and U.S., respectively. Similar patterns are reported for the other ultimate owners, where financial institutions and widely-held firms are controlling, respectively, 11.15% and 9.66% of Canadian firms (at the 20% threshold). These figures are larger than those reported for U.K. (8.94 and 0.76) and U.S. (4.66 and 2.41). Besides, the Canadian government²⁵ is playing a quite important role in Canadian ownership, where it is controlling, on average, 2.03 (4.46)% of listed firms at the 20 (10)% cut-off, whereas, government control is close to non-existent in both U.K. and U.S.

In Panel A-Table 2 we investigate the mechanisms used by large blockholders to achieve a more concrete separation between ownership and control in order to expropriate more easily from small and atomistic shareholders. More specifically, we investigate the use of multiple class voting shares, non voting shares, pyramidal structure, cross-holding, reciprocal-holding, the existence of a second ultimate owner and the dominance of insiders (i.e. the controlling family appoints some of its members to top management positions to enhance its control). Panel C shows that pyramidal, cross, and reciprocal holdings are used to gain control in respectively 33.5, 8.24 and 2.62% of Canadian traded corporations. These proportions are clearly lower in UK and fall drastically in U.S. where 8.46, 1.15 and 0.13% of U.S. sampled firms are controlled through pyramidal, cross, and reciprocal holdings compared to 21.13, 0.00 and 4.93 % in U.K. Multiple class shares seem to be a preferred mean of enhancing control in Canada where 16.10% of firms have multiple classes of shares, which is higher than in U.S, however lower than the proportion of 23.91% reported for U.K.

The evidence above may reflect the power of the ultimate owner, in Canada, who tries to use these means to enhance his control without being financially constrained by limiting her/his financial commitments. Such means would offer the ultimate owner the “incentive” and ability to extract rents through the webs of their shareholdings. In this context, we report that the magnitude of the deviation between control and ownership is relatively high in Canada. Namely, when we compute the minimum capital to control 20% of voting power, we find that a Canadian controlling shareholder needs, on average, only 18.3% of cash flow rights to control 20% of voting power. This ratio is equal to 19.14 in U.K. and 19.32 in U.S.

²⁵ This refers to federal, provincial, or a local authority including municipality or a government agency.

To characterize further the Canadian ultimate owner, we examine whether she/he is the only ultimate owner. We find that in 83.9 (62.31) % of Canadian firms, the ultimate owner is alone at the 20 (10) % threshold. That is on average, one ultimate owner, who holds one block of control exceeding 20 percent, monopolizes the control in 83.9% of Canadian corporations. This proportion sharply falls to 43% in U.K. but surprisingly increases to 93.12% in U.S. Gadhoun *et al.* (2003) argue that this might be inoperative in the US because minority shareholders can rely on legal protection of their rights. One can argue that the presence of a second ultimate owner may, on the one hand, act as an effective monitor on the first ultimate owner, and weaken the links that lead to expropriation of minority interests²⁶.

Table 2: Descriptive statistics of means of enhancing control in Canada, U.S., and U.K.

The table below displays descriptive statistics of means of enhancing control and some dilution proxies. Data are collected from the *Financial Post* (FP) "Survey of Industrials" (1996) and Statistics Canada *Intercompany Ownership in Canada* (1996). Table 1 displays also results for U.K. and U.S. reported in Faccio and Lang (2002) and Gadhoun, Lang, and Young (2003), respectively.

Panel A: Means of enhancing control							
	Pyramidal holding	Cross holding	Reciprocal holding	Multiple class shares	Non voting shares	Minimum capital to control 20% of votes	Second ultimate owner (10 percent)
Canada	33.50	8.24	2.62	16.10	6.89	18.30	37.69
U.K.	21.13	0.00	4.93	23.91	n.a	19.14	n.a
U.S.	8.46	1.15	0.13	8.19	1.6	19.32	37.08

Panel B: Expropriation proxies							
	First largest ultimate ownership over first largest ultimate control	Second largest ultimate ownership over Second largest ultimate control	First largest ultimate control over second largest ultimate control	First largest direct control over second largest direct control	Management from controlling families (10 percent)	Management from controlling families (20 percent)	Second ultimate owner (20 percent)
Canada	0.85	0.30	57.82	4.50	44.66	34.27	16.13
U.K.	0.88	n.a	n.a	n.a	n.a	n.a	57.00
U.S.	0.94	0.19	5.72	1.41	24.57	15.11	6.88

In Panel B-Table 2, we use the ratio of largest ultimate block of ownership over the largest ultimate block of control as a proxy for the control-ownership separation (this ratio is available for U.S. and U.K.). The closer this ratio to one the weaker the separation between ownership and control, and the lower the probability of expropriation of minority interests, *ceteris paribus*. This ratio is equal to 0.85 in Canada whereas it equals to 0.88 in U.K. and 0.94 in U.S. In addition, we compute the ratio of the largest ultimate block of control over the

²⁶ On the other hand, s/he may collude with the first ultimate owner in common endeavors of various natures, to expropriate even more minority interests.

second ultimate block of control. This may provide an indicator of the power of the first ultimate owner compared to that of the second ultimate owner. This ratio is equal to 57.82 in Canada, which is ten times bigger than in U.S (5.72). These figures contribute to strengthen the argument that the risk of expropriation is higher in Canada than in “sister” Anglo-Saxon countries (U.K. and U.S.).

Another mechanism of strengthening the ultimate control and power of the largest ultimate owner is to appoint a member of the controlling family to top management positions. In this study, we investigate whether a member of the controlling family is the CEO, Honorary Chairman, Chairman, or Vice-Chairman of the Board. For this purpose we only analyze family controlled firms since we cannot collect information on officers and directors appointed by other shareholders, such as the State, financial institutions or other corporations. The only way to obtain information on family membership is by looking at the last name of the officer or director. This method is likely to bias our results towards an under-estimation of family affiliation inside the boards of family-controlled firms. Moreover, our results may also be biased because smaller companies are more likely to have an owner who is also the CEO or Board Chairman. Keeping these drawbacks in mind, we document that 34.27 (44.66) % of Canadian firms have controlling families in top management positions at the 20 (10) % threshold which is higher than the 24.57 (15.11) % reported in U.S. When, we restrict our analysis to family controlled firms, we find that 73.46% of family ultimate owners in Canada appoint their family members to top management positions at the 20% threshold.

The above results suggest that, despite the similarity between Canadian and US (and UK) institutional indexes (La Porta *et al.*, 1999), control and ownership are more concentrated in Canada than in U.S. (or U.K.). These findings do not support the “law matter” argument of La Porta *et al.* (1998). A natural question then would be to examine whether the puzzling evidence from Canada is affected by Quebec’s uniqueness within the confederation. Univariate analysis between firms headquartered in Quebec and those in the rest of Canada is discussed in the following section.

3.2. The canadian puzzle: univariate analysis

In Panel A, Table 3, we report the results of non-parametric tests comparing the control distribution of firms headquartered in Quebec and those headquartered outside Quebec. The largest direct and ultimate blocks of control and ownership are significantly

higher for Quebecois firms (QUBFs hereafter) than for those in the Rest of Canada (ROCFs hereafter). In Panel B and C, Table 3, we examine the type of the ultimate owner at the 10 and 20% thresholds respectively. We note that 18.75 (39.09) % of ROCFs are widely-held at the 10 (20) % cut-off, which is significantly higher than 10.20 (19.04) % reported for QUBFs. Around 90 (82) % of QUBFs have an ultimate owner at the 10 (20) % cut-off. Those proportions are significantly higher than those reported for ROCFs (80.67 and 59.66 at the 10 and 20% respectively). Besides, family control (at 20% level) and government control (at 10 and 20% levels) are significantly more pronounced in Quebec than in the rest of Canada. Nevertheless, financial institution and widely-held corporation's control blocks are indistinguishable between the two categories of firms. Overall, these results show that both ownership and control structures are more concentrated in Quebec than in the rest of Canada.

In Panel D and E, Table 3, we examine the means of enhancing control and some expropriation proxies. For QUBFs, the use of pyramidal holding (42.85%) and multiple class shares (31.97%) is significantly higher than in the rest of Canada (31.93 and 13.46% respectively). Similarly, we find that the control-ownership separation (measured by the difference between the largest ultimate control and largest ultimate ownership) in QUBFs is significantly higher than that in ROCFs. Furthermore, the ratio of the first largest direct block of control over the second direct block of control and the presence of family management in QUBFs are significantly larger than for those in ROCFs. However, the second largest ultimate ownership over the second largest ultimate control ratio and the first largest ultimate control over the second largest ultimate control ratio display no differences between Quebec and the rest of Canada.

Overall, ownership structure is more concentrated, family control, pyramidal holdings and the control-ownership separation are more pronounced in Quebec than in the rest of Canada. However, the differences in governance structures between QUBFs and ROCFs need to be interpreted with caution. First, our results may be affected by the differences in firm size between both sets of firms. Second, our results may actually reflect a reverse causal relationship between firms in Quebec and the control-ownership separation. To address these issues, we first use multivariate analysis and then correct our results for an eventual selection bias.

Table 3: Corporate control distribution in Quebec versus the rest of Canada

The table below displays comparative descriptive statistics of corporate control and ownership distribution between firms headquartered in Quebec (a Canadian Franco-Saxon province) and the rest of Canada (Canadian Anglo-Saxon provinces). The sample includes 1112 publicly traded corporations (155 headquartered in Quebec and 957 in the rest of Canada). The data are collected from the *Financial Post* (FP) "Survey of Industrials" (1996) and Statistics Canada *Intercorporate Ownership in Canada* (1996).

Panel A: Average size of blocks of ownership and control							
	Average size of direct block of control in %			Average size of ultimate stakes			
	First largest	Second largest	Third largest	First largest	Second largest		
	Control	Control	Control	Ownership	Control	Ownership	Control
Quebec	44.18	7.91	1.6768	31.78	41.22	7.03	9.20
The rest of Canada	31.82	6.71	1.7236	24.68	30.37	5.70	7.92
P-value	0.0001	0.2089	0.9159	0.0005	0.0001	0.1229	0.2112
Panel B: Ultimate ownership at 10% cut-off							
	Diffusely owned firms	Firms with ultimate owner	Family controlled firms	W. H. Financial Inst. Cont. firms	Widely-held firms	Government controlled firms	Miscellaneous investor
Quebec	10.20	88.43	61.22	18.37	12.92	10.20	5.44
The rest of Canada	18.76	80.68	55.83	17.87	10.43	3.50	11.78
P-value	0.0028	0.0094	0.2182	0.8864	0.4007	0.0003	0.0038
Panel C: Ultimate ownership at 20% cut-off							
	Diffusely owned firms	Firms with ultimate owner	Family controlled firms	W. H. Financial Inst. Cont. firms	Widely-held firms	Government controlled firms	Miscellaneous investor
Quebec	19.05	81.63	57.14	10.88	7.64	6.12	2.72
The rest of Canada	39.10	59.66	38.39	11.19	10.00	1.36	5.33
P-value	0.0001	0.0001	0.0001	0.9102	0.3360	0.0196	0.0926
Panel D: Means of enhancing control							
	Pyramidal holding	Cross holding	Reciprocal holding	Multiple class shares	Non voting shares	Minimum capital to control 20% of votes	Existence of a second ultimate owner at 10 percent
Quebec	42.86	10.20	2.72	31.97	10.20	17.15	36.73
The rest of Canada	31.94	7.92	2.60	13.46	6.33	18.48	37.85
P-value	0.0094	0.3513	0.9349	0.0001	0.1439	0.0029	0.7955
Panel E: Expropriation proxies							
	First largest ultimate control <i>minus</i> the first largest ultimate ownership	Second largest ultimate ownership over the second largest ultimate control	First largest ultimate control over the second ultimate control	First largest direct block of control over the second direct block of control	Management from controlling families (10 percent)	Management from controlling families (20 percent)	Existence of a second ultimate owner at 20 percent
Quebec	9.073	0.334	65.63	5.11	53.06	49.66	19.73
The rest of Canada	5.41	0.30	56.52	4.40	43.26	31.71	15.50
P-value	0.0021	0.4647	0.1314	0.0247	0.0269	0.0001	0.2298

3.3. Regression analysis

Panel A-Table 4 shows that that firm size is positively and significantly associated with such separation. To some extent, this result support the theoretical models of Bebchuck *et al.* (2000) and Wolfenzon (1999) which predict that larger companies would be more likely associated with high diversion levels. The coefficient of the debt ratio (model 2) is of expected sign. Namely, the negative coefficient of leverage may be interpreted by CS' preference for a conservative indebtedness to avoid an eventual monitoring by debt holders (e.g. financial institutions). In addition, we report a negative and significant coefficient of risk on the control-ownership separation. An interpretation for this result may stem from the association of higher separation with higher asymmetric information costs and weak information disclosure, as stock-variability may proxy the speed with which information is captured in stock prices. The dividend coefficient is not significant. Most importantly, we report a consistently significant positive coefficient of family control. Considering that high separation might be associated with high private benefits, this result supports the argument that family dynasties might use their *corporate power* to enhance their selfish interests. In model 5 (Panel A), we run a regression including all the control variables, we find that only family control, firm size and risk keep the significance of their coefficients.

We now directly test the path-dependence hypothesis. Results are reported in Panel B-Table 3. In fact, we re-run all regressions of Panel A by including a dummy variable equals 1 if the firm is headquartered in Quebec and 0 otherwise. We find that the estimated coefficient of this variable is consistently positive and significant across all model specifications. This result supports both arguments on path-dependence patterns of ownership structure (Bebchuck and Roe, 1999) and La Porta *et al.* (1998) of law origin's matter. To summarize, our results are consistent with the interpretation that law regime and culture heritage of the environment in which the firm operates is important in shaping the control-ownership separation, and consequently, the private benefits of control.

Table 4: Regression analysis of the determinants of the ownership control separation

This Table reports results from OLS regression analysis of the determinants of the control-ownership separation. We measure the separation by the difference between the largest ultimate control and the largest ultimate ownership. We control for firm size (total assets (SIZE)), dividend payout ratio (DIVR), debt ratio (DEBT), firm risk (RISK), a dummy variable to distinguish family controlled firms (FAMC) and a dummy variable equals 1 if the firm is headquartered in Quebec and 0 otherwise. The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

Panel A: The Determinants of the Ownership-Control separation						
	Expected Sign	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept		-20.257 (0.0001)	1.806 (0.0244)	1.411 (0.0811)	-7.940 (0.0001)	-21.369 (0.0001)
Family Control	+	9.026 (0.0001)	7.714 (0.0001)	7.793 (0.0001)	8.780 (0.0001)	9.773 (0.0001)
Firm Size	?	1.830 (0.0001)				1.563 (0.0001)
Debt	-		-0.009 (0.0012)			0.005 (0.2599)
Dividend	?			1.874 (0.2558)		0.7312 (0.5376)
Risk	+				-1.982 (0.0001)	-0.770 (0.0348)
Adj-R ²		0.1512	0.0722	0.0782	0.1228	0.1587
Panel B: Testing the Path Dependence Hypothesis						
	Expected Sign	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept		-19.997 (0.0001)	0.926 (0.2618)	0.604 (0.4660)	-7.196 (0.0001)	-19.536 (0.0001)
Family control	+	8.887 (0.0001)	7.649 (0.0001)	7.725 (0.0001)	8.726 (0.0001)	9.694 (0.0001)
Quebec	+	2.921 (0.0353)	5.526 (0.0012)	5.317 (0.0020)	3.807 (0.0477)	5.949 (0.0127)
Firm Size	?	1.771 (0.0001)				1.485 (0.0001)
Debt	?		-0.0093 (0.0004)			0.005 (0.2552)
Dividend	?			1.642 (0.3391)		0.905 (0.4806)
Risk	+				-1.734 (0.0001)	-0.422 (0.2801)
Adj-R ²		.1562	0.0918	0.0962	0.1287	0.1745

3.4. Reverse causality

The consistency of the positive effect of *Quebec effect* on control-ownership separation needs to be interpreted with caution. There might be simultaneous equations bias affecting the above result. In fact, it might be conceivable that firms with specific characteristics (e.g. size, policy, etc.) will be headquartered in Quebec; these same characteristics could affect the control-ownership separation. CS, particularly those seeking private benefits of control, may prefer headquartering their firms in an environment to benefit

from some form of support. For instance, in the 1960s, the Quebec government was still giving francophone more economic power (e.g. favoring Quebec-based suppliers in government purchasing policies, tax incentives, interest free loans) (Wallace, 2002)²⁷. This political and cultural environment led many Anglophone entrepreneurs (e.g. the Bronfmans, the McConnells, the Websters, among many others), disgusted with the favoritism of the French Canadians and with the threat of Quebec separation, to move to Toronto. To some extent, the nationalist ideology, the protectionist environment with its civil code seems to have influenced shaping the corporate landscape in Quebec.

To address this concern and overcome this selectivity bias, we run a Heckman (1979) two-step estimation procedure. Correcting for sample selection bias can theoretically change the sign, magnitude, or significance of the relationships found in regression results in Panel B-Table 3, assuming a random selection. We first use a probit model to identify the characteristics of firms headquartered in Quebec. The dependent variable is a dummy variable equal 1 if the firm is headquartered in Quebec and 0 otherwise. The model explaining the probability of observing a firm headquartered in Quebec is:

$$P(QUBF_i) = \gamma' \underline{\Delta}_i + \eta_i \quad (2)$$

where η_i is an error term and $\underline{\Delta}_i$ stands for a set of variables held to influence the probability of a firm being headquartered in Quebec. We control for stock variability (risk), firm size, debt ratio and ultimate control distribution to estimate the probit equation. We use the estimates from the probit regression to compute the Heckman *LAMBDA* (λ_i) for each firm, which when added to equation (1) corrects for potential correlation between the error in the first-stage probit regression and the error term of main equation²⁸. Then, we estimate the equation (1) conditioned on the probability of being headquartered in Quebec, described by the following specification:

²⁷ In particular, the Charter of the French Language ensures the survival of the French language and employment and business opportunities for French-speaking people. For example, Paul Desmarais' empire was favored by the new French political reality during the "Quiet Revolution". A close friend of P. E. Trudeau, Premier in 1968, who "favored" French Canadians, and close to J. Chrétien, whose daughter is married to a second generation Desmarais, Desmarais relied on his political and culture connections to secure the path of his business success. Similarly, the Caisse de dépôt, the largest holder of Quebec firms' stocks, initially opposed the bid of LobLaw, the Ottawa-based grocery chain, to acquire the Montreal-based Provigo. More importantly, the Caisse de dépôt "influenced the French firm Carrefours to acquire Provigo...[P]remier Bouchard openly stated his opposition to Loblaw's offer and similar takeovers" (Graham *et al.* 2000).

²⁸ See Greene (1997), chapter 20 and Heckman (1979) for further details.

$$E(\text{SEPR} |_{\text{QUBF}}) = \alpha + \beta' \underline{\Gamma}_i + \delta * \text{QUBF}_i + \delta_\lambda \lambda_i + \varepsilon_i \quad (1-a)$$

Results of the corrected equation (1-a) are reported in Table 5²⁹. The *Heckman (LAMBDA)* estimates of affiliation on corporate value are negative and significant across the four specifications.

The estimated coefficient of the effect of the *Quebec effect* is still positive and significant, meaning our previous results stand even after controlling for the selection bias. The results for the other variables are consistent with those previously reported in Table 3.

Table 5: Regression analysis corrected for potential selection bias (Heckman two-step)

This Table reports results from regression analysis of the determinants of the control-ownership separation. The models are estimated using the Heckman-two step estimation to correct for the selection bias between firm's headquartering in Quebec and the control-ownership separation. We control for firm size (total assets (SIZE)), dividend payout ratio (DIVR), debt ratio (DEBT), firm risk (RISK), a dummy variable to distinguish family controlled firms (FAMC) and a dummy variable equals 1 if the firm is headquartered in Quebec and 0 otherwise. The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

Panel A: The determinants of the probability that a firm is headquartered in Quebec					
	Intercept	Firm Size	Debt	Risk	Ultimate control
Estimates	-3.395 (0.0001)	0.079 (0.0376)	-0.207 (0.5336)	-0.230 (0.0001)	0.005 (0.0603)
Panel B: Testing the Path Ddependence Hypothesis (corrected for the selection bias)					
	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	-12.887 (0.0005)	-4.284 (0.0001)	-4.277 (0.0001)	-4.277 (0.0289)	-1.839 (0.6939)
Family control	9.373 (0.0001)	8.976 (0.0001)	9.005 (0.0001)	8.652 (0.0001)	9.400 (0.0001)
Quebec	33.618 (0.0001)	43.704 (0.0001)	42.689 (0.0001)	77.467 (0.0001)	67.395 (0.0001)
<i>Heckman</i>	-15.733 (0.0001)	-21.138 (0.0001)	-20.572 (0.0001)	-39.237 (0.0001)	-33.817 (0.0001)
Firm Size	0.820 (0.0098)				0.757 (0.0155)
Debt		0.0035 (0.5229)			0.004 (0.2992)
Dividend			0.833 (0.4699)		0.881 (0.4375)
Risk				3.089 (0.0001)	3.068 (0.0001)
Adj-R ²	0.2035	0.1942	0.1946	0.2181	0.2228

²⁹ We also compute the help and control factor $DELTA = -LAMBDA * IPS - LAMBDA * LAMBDA$, where *IPS* is the predicted value from the probit model. The value of *DELTA* should be between -1 and 0. The estimated *DELTA* in our model is between -0.34 and 0.

4. Conclusion

Our results indicate that, despite the similarities in institutional indexes between Canada and two other Anglo-Saxon countries, namely the U.S. and U.K., the Canadian corporate structure has very different patterns from countries with (supposedly) the same law regime. We document that Canada, despite its Common Law and Anglo-Saxon heritage and reputed investor protection record, has nonetheless concentrated corporate ownership structure and we showed some indicators of a vulnerable governance system in Canada and particularly in the French province Quebec. Our results show that firms headquartered in Quebec display more pronounced family and more frequent use of means to enhance the separation between corporate ownership and control (e.g. pyramidal holdings, multiple class shares).

More importantly, we find that agency problems, in Canada, are between controlling owners and minority shareholders, and lie in the misalignment between control and ownership stakes. Our regressions results show that this separation is significantly associated with firm size, family control and the environment in which the firm operates. To some extend, our results support the path dependence argument of Bebchuck and Roe (1999). Overall, these features suggest that the separation between ownership and control may exacerbate the unfair treatment of minority interest, which would undermine the attractiveness of stock market to investors.

We submit that the evidence gathered in this paper is important for many reasons. Obviously, our findings can be useful to regulators and law-setters, at various levels, including disclosure rules in accounting standards and corporate law enforcement, in order to assure and improve the efficiency of the Canadian stock market. In addition, our findings suggest a future research agenda. For example, we have argued that firms with large deviation between ultimate control and ownership may have weak information disclosure. This question has yet to be fully assessed empirically.

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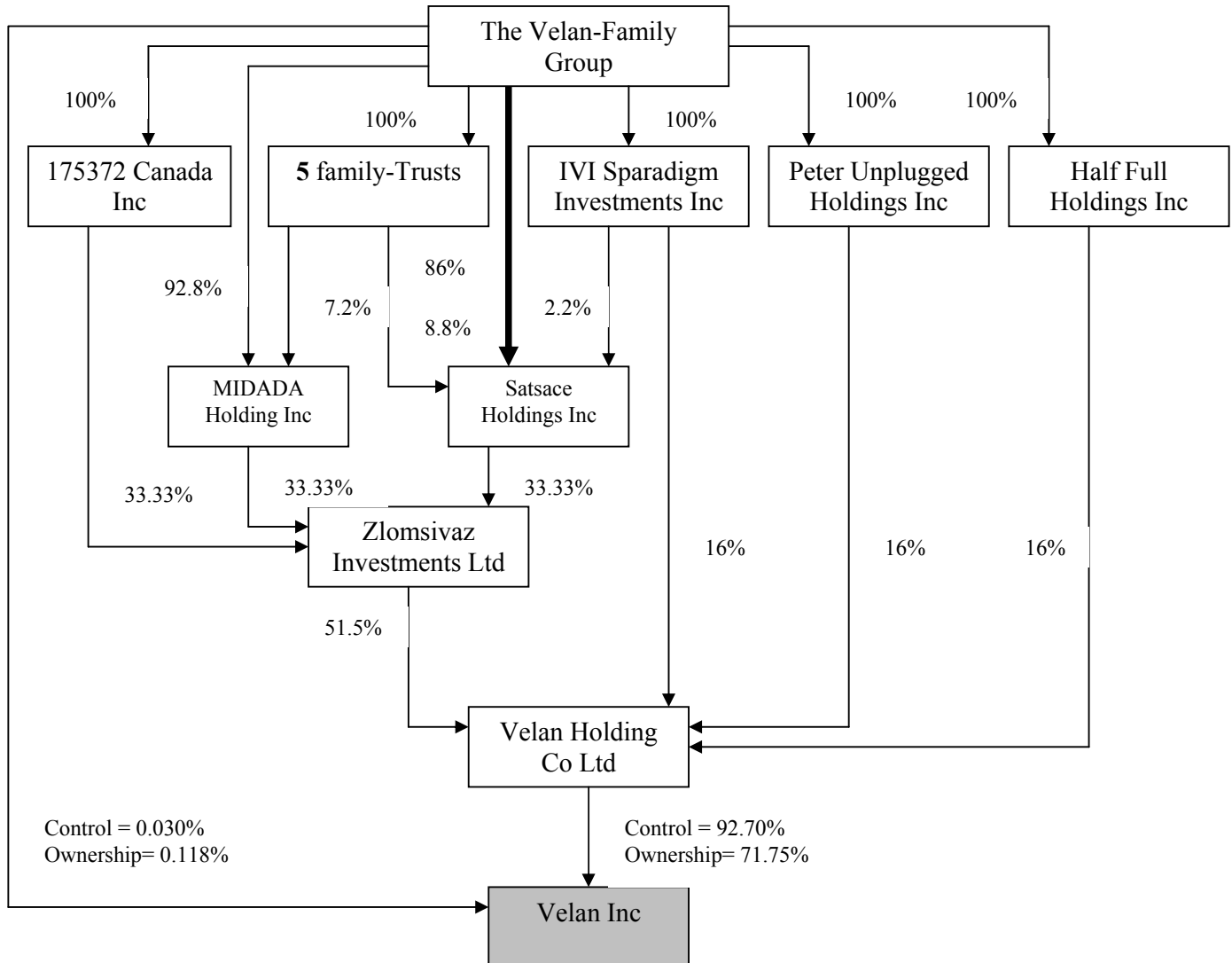
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Appendix: The Velan-Family Group³⁰

The following figure illustrates a stylized pyramidal corporate group of the Velan Family (Canada). It displays the only participating firms into the ownership chain of Velan Inc, a Canadian publicly traded firm. Using this example, we will show how the separation between ownership and control is separated through the use of multilayered pyramids, multiple class shares, director interlocking and family management.



³⁰ Source: firm proxy circular [management discussion] and Directory of Intercorporate Ownership, Statistics Canada, 1997.

Appendix: The Velan-Family Group (continued)

The selected (public) firm is Velan Inc. As at August 15, 1997, the company has 16,266,667 Multiple Voting Shares and 6,402,001 Subordinate Voting Shares. 5 votes and 1 vote are respectively attached to the multiple and subordinate voting shares. According to the firm proxy circular, and according to “the knowledge of the directors and officers of the Corporation”, Velan Holding Co. Ltd. owns all of the issued and outstanding 16,266,667 Multiple Voting Shares and one Subordinate Voting Share. Velan Holding Co. Ltd. is owned (directly or indirectly) by members of the Velan family and trusts established in their favour. Particularly, 12 non-listed firms are participating in the ownership chain of Velan Inc, among them five (5) family trusts and one (1) street number firm. As it can be seen from the figure, the use of multiple class shares and multilayered pyramid will enhance the separation between ownership and control. Note that such separation is further enhanced by cumulating the seats of President, the Chairman and CEO of the corporation and appointing family related members in top management positions. In our case, A.K. Velan is the President and Chief Executive Officer of the Corporation, and also owns 20,000 Subordinate Voting shares; Peter Velan is an Executive Vice-President (Engineering and Production) and owns 2,800 Subordinate Voting shares; Thomas Velan is an Executive Vice-President (Sales and Overseas Operations) and owns 4,000, and Ivan Velan is also an Executive Vice-President (North American Sales) but without any direct holding. In sum, according to our method of computation, the ultimate ownership and control stakes are respectively: $UOWS = \sum_{j=1}^m \prod_{i=1}^n OW_{i,j} = 70.6703 + 0.118 = 70.78\%$ and $UCOS = \sum_{j=1}^m \min(CO_i)_j = 92.70 + 0.030 = 92.73\%$. We use the difference UCOS minus UOWS to proxy the separation between ownership and control. Note that this separation enables the ultimate owners (e.g. Velan Family in our situation) to maintain a lock on the voting power and securely extract private benefits without internalizing total financial costs related to their appropriating behaviour. For instance, suppose that the Velan Family imposes on Velan Inc. (where they have 92.73% control) a decision to buy overpriced assets (of \$3,000,000) from a closely held firm (e.g. 175372 Canada Inc), this would result in a net loss of \$3,000,000 for the direct shareholders of Velan Inc., yet the UO (the Velan Family) will have a net cash flow of $3,000,000 * 100\% * (1 - 0.7078) = \$876,600$.

CHAPTER II:

ON THE DETERMINANTS, COSTS, AND BENEFITS OF PYRAMIDAL OWNERSHIP: Evidence on Dilution of Minority Interests

Abstract:

We investigate the governance structure of firms affiliated to pyramidal holdings (PH). We document a high separation between ownership and control in PH-affiliated firms. We also show that PH structures seem to be used to match the (cash) preferences of the ultimate owners. As a result, we find that corporate value decreases when a firm is affiliated to PH. However, when we control for the selection bias, using the Heckman two-step estimation, the *Heckman* estimate fully subsumes all negative effect of PH on corporate value.

1. Introduction

La Porta et al. (1999) document that controlling (ultimate) owners, around the world, usually control an array of affiliated companies through hierarchical intermediary corporations forming pyramidal holdings (PH). Pyramid is an ownership structure displaying a top-down chain of control starting with an ultimate owner (at the apex) and with successive lower layers of firms. Such structure entails a set of channels through which the controlling shareholders, at the apex of the pyramid--ultimate owners (UO)--, orchestrate corporate behavior to extract private benefits. UO may not have the incentive to align their interests with minority shareholders, especially if they gain control of the firm (Shleifer and Vishny, 1997). PH enable them, by separating control from ownership, to maintain a lock on the voting power of affiliated firms and internalize only part of the financial costs related to their appropriating behavior (an extensive example is described in the following section). In addition, the multilayered structure of PH creates for the UO a convenient veil, opaque to outside scrutiny, which makes it possible to hide appropriating behavior of minority interests. Bianchi et al. (1997) argue that PH might be used to hide the identity of the controlling shareholders from either the market or the state.

However, PH are common around the world and seem to be a favoured mechanism of enhancing control rights over ownership rights, even in developed countries³¹. For example, PH represent nearly 20% of the ownership structure in Western Europe (against 9% for the U.S.). Figures are more impressive in East Asia: 67% of the firms in Indonesia, 55% in Singapore, 49% in Taiwan and 37% in Japan are pyramidal affiliates. In Canada, 35% of firms are controlled through pyramidal structures. PH are often family controlled. For instance, outside Canada, Toyota Motor, Samsung Electronics, Levi Strauss, and Du Pont are all controlled via pyramidal structures and still have families as main shareholders. In Canada, the family names are Bombardier, Bronfman, Desmarais, Irving, McCain, Molson, Péladeau, etc.

Despite the prevalence and economic importance of PH, there has been relatively little effort devoted to examine the determinants and the governance structure of PH. The present effort seeks to fill in this gap in our knowledge and differs from prior work in several ways.

³¹ It is conceivable to consider that PH are an attractive option in countries with lax corporate and securities laws and weak investor protection (Wolfenzon, 1999; Bebchuck et al., 2000, among others).

First, we focus on the *determinants* of PH that have less formal intercorporate ties than typical conglomerate holdings. Second, our study examines the effect a firm's affiliation to PH, as a channel of agency costs, on corporate value. In fact, existing research (Demsetz and Lehn, 1985; Morck et al., 1988; McConnell and Servaes 1990; Hermalin and Weisbach, 1988; Cho, 1998; Holderness et al. 1999; Demsetz and Villalonga, 2001; and Claessens et al., 2002, among others) focus on the effect of agency costs on firm performance. The conflicting evidence of these studies is likely to result from differences in sampling and measuring the variables of interest, but also because they rely chiefly on equity holding by managers or insiders as a measure of agency costs and fail to take account of the channels driving these agency costs (e.g. pyramidal holding, multiple class shares, etc.). More importantly, no prior study has controlled for the selection bias of firms affiliated to PH, so we use Heckman two-step estimation to control for this bias when looking at the corporate value effect.

Third, ours is one of the rare studies to investigate the governance of PH in a country, such as Canada, with a developed capital market and Common Law heritage, yet displaying a pronounced use of PH. Thus in Canada features coexist that make it ideal to answer questions such as why firms, subject to similar laws and regulations, would display different governance structures and whether Common law regimes ("Anglo-Saxon" model) are effective in protecting minority interests from the opportunistic behavior of the controlling shareholders. Finally, practically no attention has been placed on the ownership chain length of affiliated firms in PH. We proxy this chain length by the ratio of ultimate ownership to ultimate control and we examine its determinants. To answer the questions posed above, we use cross-sectional tests for our empirical analysis³². Results are consistent with the hypothesis that firms tend to be affiliated to PH to satisfy the cash and dividend distribution preferences of the ultimate owner. We document also that pyramidal ownership depresses corporate value of affiliated firms. However, the *Heckman's* estimate of this selection bias fully subsumes all negative effect of PH on corporate value.

³² We avoid event-time analysis and instead shift to cross-sectional tests for many reasons: first, data on the ownership structure before IPO and before and after affiliation are not available. Second, price and other firm effects might be already adjusted for PH governance structure. For instance, if investors can price-protect themselves, the owners of an issuing firm pay *ex ante* for the ability to *ex post* expropriate security holders. However, Wolfenzon (1999) argue that minority cannot bargain, otherwise an *ex post* efficient outcome can be reached within PH structures. Third, there might be an endogeneity relationship between firm affiliation to PH and some control variables (e.g. corporate value or corporate policies).

The remainder of this paper is organized as follows: Theoretical framework and a real PH structure are portrayed in section 2. Data construction and methodology are described in section 3. Results are presented in section 4. Section 5 concludes the paper.

2. Why do pyramidal holdings (PH) emerge?

Since PH create an internal, albeit small, capital market, they must present at least some benefits to controlling shareholders. For instance, the intercorporate links may insulate the pyramid from the imperfections of external capital markets. Williamson (1975) argues that capital allocation in financially constrained affiliates can create value. In addition, using the argument of “winner-picking” behavior of Stein (1997), controlling shareholders, at the apex of the PH, have information advantages and authority that allow them to engage in a practice of reallocating funds from one affiliate to another either to finance prospect opportunities or to collateral distressed firms. This may create value. Conversely, controlling shareholders have the latitude to use PH to leverage their control over ownership, and thus monopolize power within the pyramid. By doing so, they are able to pursue growth strategies and secure private benefits at the expense of minority interests. Denis et al.’s (1997) findings suggest that agency problems are responsible for firms maintaining value-reducing (group) diversification strategies. Morck et al. (2001) argue that pyramids “unquestionably create latitude for immense corporate governance problems”. Typically, family, at the apex of PH, arrange multiple layers of firms, in either unrelated or related industries, and combining both public and private firms, can engage in inter-firm transfers designed to adjust the volume or price of intra-group trade, the level of inter-firm dividend payout, etc.

Let’s consider the case of the Péladeau Group, which offers an interesting situation of PH with 11 layers, complemented by a use of multiple class shares and “street number” firms. More precisely, the starting point of the selected PH is *TVA Group Inc.*, a Canadian public firm that has two outstanding class shares: one class is bearing 1 vote (4,320,000 outstanding) and the other is non-voting (29,606,422 outstanding). The *Vidéotron Group Ltd.*, through three wholly-owned subsidiaries, owned beneficially 4,315,914 Class A Shares representing 99.90% of the total voting rights and 12.73% of the total ownership rights. *Vidéotron* is controlled by *Nurun Inc.*, a public firm with 33,329,084 Common shares issued and outstanding. *Quebecor Communications*, a wholly owned subsidiary of *Quebecor Inc.*, holds a total of 19,076,605 Common Shares, representing approximately 57.2% of all the issued and outstanding Common Shares. *Quebecor Inc.*, a Canadian public firm, has

24,399,969 Class A Shares and 40,235,453 Class B Shares outstanding. Class A Multiple Voting Shares entitles 10 votes per share and Class B Subordinate Voting Shares entitles 1 vote per share. According to the proxy circular of *Quebecor Inc.*, *Les Placement Péladeau Inc.* is the only “person” (corporation) who beneficially owns or exercises control over a total of 17,465,264 Class A Shares, representing 61.45% of all the voting rights and 27.03% of all ownership rights attached to all the shares of the company. *Les Placement Péladeau Inc.* is closely held by the *Péladeau Family* through four different firms (see Appendix for a figure). Using our data construction, the ultimate control stake *Péladeau Family* in *TVA Group Inc.* is $57.2\% = (\sum_{j=1}^m \min(CO_i)_j = \min(99.9\%, 62.16\%, 57.2\%))$ and the ultimate ownership stake is $1.97\% = (\sum_{j=1}^m \prod_{i=1}^n OW_{i,j} = 12.73\% * 57.2\% * 27.03\%)$.

Recalling that, we conjecture that the limited liability principle and the rent-seeking behavior are at the mere existence (and proliferation) of PH. For instance, if the ultimate owner approves that *TVA Group Inc.* buys overpriced assets (of \$2,000,000) from his closely held firm (e.g. 2327-7163 *Quebec Inc.*), this would result in a net loss of \$2,000,000 for the direct shareholders of *TVA Group Inc.*, yet the UO (the *Péladeau Family*) will have a net cash flow of $2,000,000 * 100\% * (1 - 0.0197) = \$1,960,060$.

Overall, combining such a multilayered arrangement to enhance the separation between ownership and control, and cumulating the seats of President, the Chairman and CEO of the corporation increase the probability of expropriating minority interest (e.g. selfish plans). Such behavior is supported by the theoretical argument of limited liability. As a result of limited liability, owners’ losses are limited to the amount of capital committed to the enterprise. Thomadakis (1992) argues that limited liability creates for the firm³³ a “bundle of default options” against claims by all stakeholders including other (e.g. minority) shareholders. This logic affects corporate organizational form and the governance structure of new investment projects. Specifically, unless the new growth opportunity is either “riskless or perfectly positively” correlated with an existing project, the value of the growth opportunity will be greater on a stand-alone basis than when incorporated into an existing governance structure that pools residual rights and cash flows. Hence, the ultimate owner will prefer to allocate his wealth into separate firms, while protecting his residual rights through an internal

³³ The firm is defined as a nexus of contracts with a set of bearers of contingent claims. While Thomadakis’ theory does not refer specifically to PH, focusing mostly on industrial groups for which no particular structure is specified, the concepts extend easily to PH.

control process, PH being a particularly suitable corporate structure that allows protection of the rights of the controlling shareholder and the extraction of private benefits.

PH seem to increase the value of default options while reducing the cost of creating them. In fact, the multilayered arrangement, within the PH, allows the controlling shareholders to increase the leverage—thus reducing the price paid-- in the management of default options while conserving its value. Further, as shown in the previous case, PH allow the separation between voting rights and cash flow rights. The multilayered arrangement of a PH can be complemented with other mechanisms designed to keep control over the payoffs of the default options (e.g. dual class shares, non-voting shares, cross and reciprocal holdings, appointment of family related managers, etc.). Indeed, PH offer the opportunity of having a lock on the control of a group of firms with only limited wealth invested in a single project, thus exacerbating the entrenchment (agency) costs.

Accordingly, PH could be seen as an instrument to insure control over default options available in the affiliated firm and the extraction of private benefits to UO. In fact, PH create an opportunistic veil for the UO to engage in expropriation behavior through intercorporate policy coordination and interfirm transactions designed to match the utility function of the UO³⁴.

3. Data construction and methodology

3.1. Data construction

We consider 1167 Canadian listed firms that appeared in *Stock Guide* for 1996. We trace a firm's ownership chain up to its ultimate owner. Data on the identity and size of direct and ultimate ownership and control stakes of shareholder holdings was collected manually from 2 competing sources: 1) *The Financial Post* (FP) "Survey of Industrials" and "Survey of Mines and Energy Resources" for 1996, 2) Statistics Canada *Intercorporate Ownership in Canada* (1996). These sources provide information on all major shareholders and on their stakes, as well as directors' ownership for all listed firms. Cases where the sources had diverging information on identity or block size were reconciled by verifying in *Stock Guide*. We follow the methodology of La Porta et al. (1999) and Claessens et al. (2000) to construct

³⁴ As an illustration, the founder of the Argus Corporation conglomerate, E. P. Taylor, explains his group strategy: "I look for companies where no very large shareholder exists. With my partners, I buy enough stock to give us effective control. Then the company holds our view" (Niosi, 1978, p.98).

our ultimate ownership database. We imposed two restrictions on the sample: i) we excluded all affiliates of foreign companies (i.e., when a foreign company controls at least 50% of the votes) since we could not follow their ownership chain; ii) in several cases we were not able to trace back the ultimate owners because of the use of street securities. After restriction we were left with 1091 Canadian companies. We consider a firm as affiliated to a PH if it is controlled via a pyramidal structure and has at least one intermediary corporation in its ownership chain. In that case, we set a dummy variable that takes the value one for pyramidal affiliates (PAFF) and zero otherwise (non-affiliates or NAFF). With respect to the corporate ownership structure, we take into account the ultimate control stakes (UCOS) and the ultimate ownership stakes (UOWS). UOWS (in %) is the ultimate ownership stake in ownership chain, measured as $\sum_{j=1}^m \prod_{i=1}^n OW_{i,j}$, where OW is the ownership stake at layer i of the ownership chain j. UCOS (in %) is the ultimate control stake in ownership chain, measured as $\sum_{j=1}^m \min(CO_i)_j$, where CO is the control stake at layer i of the ownership chain j. We also compute the minimum required capital to control 20% of votes (MROV)³⁵, and the ratio of cash flow over voting rights so as to capture potential dilution effects. Then, we identify the type of the ultimate owner (family, widely-held financial institution, widely-held firm, or the government) and we check for the presence of means to enhance control such as the use of multiple class shares (MCLS), non-voting shares (NVOS), cross and reciprocal holdings (CRHO and RCHO respectively)³⁶. We finally examine whether managers are members of the controlling family.

³⁵ Take for example, a firm that has 3000-type A shares (three voting rights per share), 7000-type B shares (two voting rights per share), 100 000-type C shares (one voting right per share). The total number of outstanding shares is $110000 = \{3000 + 7000 + 100000\}$, the total number of voting rights is $129000 = \{3000 \times 3 + 7000 \times 2 + 100000 \times 1\}$. The controlling shareholder needs to hold $25800 = \{0.20 \times 129000\}$ voting rights to control 20% of the votes, but only needs to hold 3000-type A shares, 7000-type B shares, and 2800-type C shares. That is, the controlling shareholder needs $11.63\% = (3000 + 7000 + 2800/110000)$ of the total number of shares to control 20% of voting rights.

³⁶ Cross holdings occur when firm A controls firm B via a pyramidal structure (e.g. an intermediary corporation) and holds direct participation in firm B capital as well. That is, firm A directly and indirectly controls firm B. Reciprocal holdings imply that firm B holds participation in the capital of firm A, its own controller.

Annual financial data were collected for each firm from *Stock Guide* and the TSE-Western database. Variables for liquidity level were collected from the TSE-Western.

3.2. Testable propositions

The arguments given above suggest that dilution of minority interests may be an issue in PH. Hence, it is interesting to test several aspects of the functioning of PH. Specifically, in this paper, we see three issues about which useful testable propositions can be formulated: the determinants of affiliation to PH, our central question, the impact of affiliation on corporate value, and the factors that influence the chain length separating the ultimate owners from the affiliates.

3.2.1. Determinants of firm affiliation to PH

From the limited liability and private benefit appropriation arguments, it follows that the higher the feasibility of extracting such benefits from a firm, the higher the probability of affiliation to a PH. The feasibility of extracting private benefits depends on factors that are intrinsic to the candidate firm and the characteristics of the firms already in the PH. Private benefit extraction can be achieved via different mechanisms:

Risk policy: An aggressive risk-taking policy can maximize the value of default options embedded to affiliated firms, though, because of the separation between ownership and control, UO will bear only a part of the economic consequence of such policy. One should expect, then, a positive relation between risk-taking and probability of affiliation to PH. We use the variance of daily stock returns (RISK) as a proxy for risk taking policy.

Investment policy and firm size: Naturally, we can expect firm size to be inversely related to the presence of private benefits of control, because it would be expensive for the controlling shareholders to wrest control over large firm. However, theoretical models of Bebchuck et al. (2000) and Wolfenzon (1999) predict that larger companies would be more likely associated with high diversion levels. Bebchuck et al. (2000) argue that controlling shareholders' incentives are distorted in favor of increasing the private benefits of control by expanding the firm with unprofitable projects. Wolfenzon's (1999) model predicts that larger firms tend to adopt a pyramidal structure, which in turn is associated with high diversion levels (e.g. private benefits). The divergence of interests between UO and minority shareholders may motivate the former to "overexpand" (Morck et al., 2001). Large affiliated

firms may enable UO to engage in private benefits' appropriation (e.g. through earnings management, asset sales, etc) without bearing proportional financial costs (because of the separation between ownership and control). Hence, we expect a positive correlation between firm size (investment policy) and the probability of firm affiliation to a PH. Firm size is measured by the natural logarithm of the value of total assets (SIZE) in 1996. We consider capital expenditures over total assets (CPEX: additions at cost to fixed assets for new plants and equipment, factories, office equipment, computers, etc.), the average growth rate of sales (HGRS) over 1994-1996, as proxies for firm investment.

Dividend policy: Dividend payout may limit cash flow diversion to generate private benefits.³⁷ Thus minority shareholders of affiliates should prefer firms paying more dividends. La Porta et al. (2000) report that corporations in countries with strong legal protection of minority shareholders pay larger dividends. Thus higher dividends can be paid to offset investor anticipation of appropriation. In fact, Faccio et al. (2001) find that dividends are negatively related to the ownership/control ratio for tightly affiliated firms, and positively related in the case of "loosely" affiliated firms. In this scenario UO prefer distributing higher dividends to affiliates benefiting from a large ownership/control ratio in order to attenuate the dilution concerns of minority shareholders. In addition, in Canada the Income Tax Act (art. 112(1)) exonerates inter-firm dividends.³⁸ Thus we conjecture that larger dividend payouts are associated with a higher probability of pyramidal affiliation. We control for dividend payout ratio (DIVR), the proportion of earnings distributed as dividends to common shareholders.

Leverage policy: Because of agency and asymmetric information problems, external funds are likely to be more expensive for affiliated firms than for independent ones. Hence, on the one hand, given that UO will want to avoid external control, they should favor a

³⁷ e.g. ultimate owners might transfer profits to related company, overinvest or enrich themselves by not paying out dividends. However, paying dividends might reflect the cash preferences of ultimate owners. For instance, DeAngelo and DeAngelo (2000) document that the Times Mirror Company's dividend policy reflects the cash distribution preferences of the controlling family.

³⁸ Canadian tax authorities regard intercorporate dividends as an internal transfer of funds in a corporate group (Income Tax Act (art. 112(1)). Thus, intercorporate dividends are tax-exempt if the intercorporate common equity stake is 10% or more. The exception is for dividends paid to investors with preferred shares or those that do not exercise control (stake < 10%) to be taxable income.

conservative leverage policy for affiliates in their pyramid. Incentives are thus created for affiliates to rely on inter-corporate linkages (akin to internal capital market) to compensate for capital scarcity. On the other hand, since corporate diversion is not easily verifiable in PH, the ultimate owner might opt for debt financing (with its commitments and control over cash distributions, etc.) to gain a reputation of being protective of minority interests. Thus, the effect of the indebtedness policy on the probability of pyramidal affiliation might be either positive or negative. We measure financial leverage (DEBT) by the debt ratio.

Other Corporate policies: UO, at the apex of the pyramid, are likely to use internally generated free cash flows to finance projects (Bebchuck et al., 2000). Thus, firms endowed with larger free cash flows should display a higher probability of pyramidal affiliation. Such firms (cash cows) might support other financially constrained firms in the PH or satisfy the cash preferences of the ultimate owners. Thus, we control for a firm's cash (CASH) availability. Similarly, stock liquidity may display negative correlation with the probability of pyramidal affiliation. Given that small investors are alert to dilution and they care about their portfolio's turnover, they will avoid stocks of firms where the risk of private benefit extraction is large. Recall also that the dilution of minority interests usually takes place by exploiting insider information and manipulating firms' news. Hence, small investors will select liquid stocks to benefit from the 'exit' option as a monitoring means. Easley et al. (1996) argue that stock liquidity should be an indicator of disagreement among shareholders, as less active stocks face a greater risk of informed trading. Moreover, Anderson and Fraser (2000) argue that stock-trading frequency is a proxy for the speed with which information is captured in stock prices. Thus, stock liquidity might be useful for small shareholders as a signal providing protection against eventual appropriation. We consider the average of daily transactions (MDTR) as a proxy for stock liquidity.

3.2.2. Affiliation to PH and corporate value

Affiliation to PH can be expected to either create or destroy firm value. It may *create value* by providing an internal capital market and creating financial synergies within controlled affiliated firms. As previously argued, the information advantages enable UO to engage in "winner-picking" behavior (Stein, 1997), they can reallocate funds from one affiliate to another either to finance prospect opportunities or provide support in case of distress, hence, creating value. Further, PH structures are usually associated with large shareholders who are able to apply effective management monitoring. However, PH may

destruct value since minority shareholders might not share equally in the benefits of affiliation. Such structures enable the ultimate owners to internalize only a part of the financial costs related to their appropriation behavior, yet they are able to gain the larger part of the induced private benefits. Thus, entrenchment behavior by UO may be exacerbated through PH, and this would bear negatively on corporate value. We consider a proxy for Tobin's Q Ratio (TOBQ) measured by the ratio of market value of equity plus book value of debt over book value of equity and debt.

3.2.3. Length of chain separating the ultimate owners from the affiliates.

We have argued that UO organize the structure of the PH to i) maximize the value of the default options, and ii) create opportunities for private benefits appropriation. Specifically, we conjecture that ultimate owners develop strategies whereby they combine their cash flow rights, control rights, and distance from affiliates with a view to minimize their sensitivity to negative shocks and maximize their sensitivity to positive shocks. Positive shocks refer to either capital or dividend gains, or other forms of economic and non-economic rents. Negative shocks may refer to corporate value loss or dividend cut caused by aggressive risk taking or indebtedness policies. The ratio of ultimate ownership/control is a proxy for the spread between ultimate control and ultimate ownership that captures the distance separating the apex from affiliates. Affiliates with large dividend payouts, liquid stocks, and high debt levels would be placed in layers that are closer to the UO. However, affiliates large in size taking aggressive risks that generate excess free cash and presenting means of enhancing control would be placed far down the PH structure. In other words, ultimate owners tend to use other people's money (e.g. minority interests' money) to extract rents that secure their economic benefit. For instance, family dynasties at the apex of the pyramid potentially have incentives to lobby politicians using the resources of *distant affiliates*, whose "profitability is relatively unimportant to them" (Morck et al., 2001). Thus, the general strategy of ultimate owners should be to distance themselves from affiliates prone to negative shocks while keeping closer to them firms prone to positive shocks. Consequently, our third hypothesis is that the distance between ultimate owners and their affiliates increases when affiliates are prone to negative shocks and decreases when positive shocks dominate expectations.

3.3. Methodology

The first step in our empirical work was to run mean comparison and Wilcoxon rank-sum tests to check the differences between the two categories of firms. Then we used a Logit model to address the main question of our research: the determinants of corporate affiliation to PH. The model to test aims at explaining the probability of observing a firm affiliated to a PH is:

$$P(PAFF_i) = \gamma' \underline{\Delta}_i + \eta_i \quad (1)$$

where $\underline{\Delta}_i$ stands for a set of variables held to influence pyramidal affiliation and η_i is an error term. Given our preceding arguments, we expect the following relationship with coefficient signs as shown:

$$P(PAFF_i) = f(RISK^+, SIZE^+, CASH^+, CPEX^+, DIVR^+, DEBT^-, LIQD^+, MROV^+) \quad (1-a)$$

RISK, SIZE, CASH, CPEX, DIVD, DEBT, MROV, LIQD, and TOBQ, are proxies for firm risk taking, firm size, free cash flow, capital expenditure, dividend policy, indebtedness policy, means of enhancing control, stock liquidity, and corporate performance, respectively. We then perform a multivariate regression to capture the valuation effect associated with PH. In this regression, we include a PH dummy variable (PAFF) and control for other factors that may affect corporate value. The model to test is as follows:

$$TOBQ_i = \alpha + \beta' \underline{\Gamma}_i + \delta * PAFF_i + \varepsilon_i \quad (2)$$

where TOBQ is a measure of Tobin's Q, $\underline{\Gamma}_i$ is a set of firm specific control variables, PAFF is a dummy variable that equals 1 for a firm that is affiliated to a PH. α , β , and δ are parameters to be estimated, and ε_i is an error term. δ measures the relation between firm's pyramidal affiliation and TOBQ.

For the third hypothesis, we consider PH affiliated firms only; we study the factors determining the distance in the ownership chain between the ultimate owner and the affiliated firms. To do this, we use the ratio of ultimate ownership over ultimate control as dependent variable. This variable is highly (negatively) correlated to the number of layers and should,

ceteris paribus, capture the degree of potential appropriation. The model explaining the variability of the ownership/control ratio with expected signs shown is as follows:

$$\left[\frac{UOWS_i}{UCOS_i} \right] = f(RISK_{-}, SIZE_{-}, CASH_{-}, TOBQ^{+}, DIVD^{+}, DEBT^{+}, MROV^{+}, LIQD^{+}) \quad (3)$$

4. Empirical Results

4.1. Descriptive statistics

In this section we bring together and contrast statistics of governance structures for pyramidal affiliates (PAFF) and non-affiliates (NAFF). As can be gathered from Table 1, we observe that affiliates account for 35% of our sample (381/(381+710)). Ultimate ownership and control stakes are significantly larger for pyramidal affiliates than for non-affiliates. We also observe that ultimate ownership/control ratio is significantly lower for affiliates than for non-affiliates. This ratio is inversely related to the deviation between ownership and control. Hence, the deviation between ownership and control is more enhanced in pyramidal affiliates than in non-affiliates. A similar relation holds for the ratio of largest ultimate stakes over second largest ultimate stakes. Differences are significant both in the t-test and the Wilcoxon rank-sum test. However, the difference between the two samples, for the required minimum capital to control 20% of the votes, is not significant. This ratio is equal to 18.4% and 18.3% respectively for PAFF and NAFF firms.

We conjecture that the ultimate owner uses pyramidal ownership to enhance control and conceal opportunistic behavior. To investigate this conjecture, we examine the means used by the controlling shareholder to exert this control. We find that 26% of pyramidal affiliates use multiple class shares, 5.3% for non-voting shares, 21.8% for cross holding and 6.2% for reciprocal holding. On the other hand, we identify two further means of strengthening ultimate control (though we do not include them in our calculations of control), namely being the only controlling owner and having a member of the controlling family as the CEO, Honorary Chairman, Chairman, or Vice-Chairman of the company. In 48.8% of pyramidal affiliates, the UO is the only controlling shareholder at the 10% cut-off; this proportion increases to 72.6% for the 20% cut-off.

Table 1: Mean and Median comparisons of ultimate ownership characteristics between pyramidal holding-affiliated firms and non-affiliated firms in Canada

The Table below reports mean and median comparison differences for a variety of ownership characteristics of pyramidal holding-affiliated and non-affiliated firms. We control for ultimate control stakes (UCOS) and the ultimate ownership stakes (UOWS). We control for the required minimum capital to control 20% of votes (MROV), the ratio of ultimate cash flow over ultimate voting rights (UOWS/UCOS) to capture the potential appropriation. Besides, we identify the type of the ultimate owner (family, widely-held financial institution, widely-held firm, or the government) and we check for the presence of means to enhance control such the use of multiple class shares (MCLS), non voting shares (NVOS), cross and reciprocal holding (CROSS and RCHO respectively). We finally examine whether managers are from the controlling family. The P-value of the mean and median comparison tests is represented in the two last columns. The full sample includes 1091 observations for the 1994-1996 period.

Pyramidal holding-affiliated firms (N=381)			Non-affiliated firms (N=710)		Tests for differences in	
Mean		Median	Mean	Median	Mean (P-Value of the t- test)	Median (P-Value of the Z- Wilcoxon test)
UOWS		24.91000	22.4798	16.9750	0.0001	0.0001
UCOS		38.2400	26.2164	20.0900	0.0001	0.0001
UOWS/UCOS		1.0000	0.9276	1.0000	0.0001	0.0001
MROV		0.2000	0.1831	0.2000	0.8330	0.4906
Panel B: Means of enhancing control in pyramidal affiliates						
Number of users		Number of non- users	Percentage of users	Percentage of non- users	Chi-Square	P-value
Multiple class shares		282	25.98	74.02	87.8976	0.0001
Non voting shares		361	5.25	94.75	305.1995	0.0001
Cross holding		298	21.78	78.22	121.3255	0.0001
Reciprocal holding		357	6.30	93.70	291.0472	0.0001
Management from the controlling family at 10%		191	49.74	50.26	0.0105	0.9183
Management from the controlling family at 20%		222	41.58	58.42	10.7789	0.0010
Existence of second ultimate owner at 10%		186	51.18	48.82	0.2126	0.6447
Existence of second ultimate owner at 20%		276	27.37	72.63	77.8526	0.0001
Panel C: Type of ultimate owner						
Family controlled firms at 10%		153	59.84	40.16	14.7638	0.0001
Family controlled firms at 20%		199	47.77	52.23	0.7585	0.3838
Financial Institution controlled firms at 10%		297	22.05	77.95	119.0787	0.0001
Financial Institution controlled firms at 20%		324	14.96	85.04	187.1102	0.0001
Government controlled firms at 10%		357	6.30	93.70	291.0472	0.0001
Government controlled firms at 20%		371	2.62	97.38	342.0499	0.0001

Furthermore, in 49.7 (41.6)% of affiliates the ultimate owner appoints a family member³⁹ in key management positions. Finally, we check for the ultimate owner type. We

³⁹ For this purpose we only analyze family controlled firms since we cannot collect information on officers and directors appointed by other shareholders, such as the State, financial institutions or other corporations. The only way to obtain information on family membership is by looking at the last name of the director. This method is likely to bias our results towards an under-estimation of family affiliation inside the boards of family-controlled

find that 59.8 (47.8)% of affiliates are family controlled at the 10 (20)% cut-off. Financial institutions control 22.1 (15.0) percent, and government controls 6.3 (2.6)% at the 10 (20)% cut-off. To obtain a better understanding of the characteristics of the distribution of ownership structure of firms controlled via pyramidal structure by industry, we classify firms according to their two digits SIC code⁴⁰. Affiliates to PH are present, by order of importance, in the following industries: paper & forest products (62.5%), specialty stores (48.0%), the mining exploration (not production) industry (47.4%), investments companies & funds (44.0%), transportation & environmental services (42.9%), real estate & construction (42.4%), and the food processing industry (37.5%).

Overall, the results suggest that corporate ownership in Canada is concentrated and the risk of appropriation is present in the Canadian corporate landscape, especially within PH. In the following section we present the results of the multivariate analysis.

4.2. Multivariate regression analysis

4.2.1. Logit analysis of the determinant of PH

Table 2 presents the results of Logit regressions of the likelihood of a firm's pyramidal affiliation. As expected, results suggest that large size significantly increases the likelihood of a firm's affiliation to PH. The estimated coefficient of ultimate voting rights⁴¹ is significant across the different model specifications. That is, a large block of control rights is associated with a higher likelihood of affiliation. The estimated coefficients of the deviation between control and ownership, measured by the minimum capital needed to control 20% of votes (i.e. MROV) and capital expenditure (CPEX), are significantly associated to a higher likelihood of affiliation. UO appear to prefer to affiliate firms within which they can retain control, even when they lack profitable investment opportunities. For example, firms offering means of enhancing control (e.g. multiple class shares, cross directorship) might facilitate private benefits appropriation. Besides, the positive coefficient of capital expenditure might

firms. Moreover, our results may also be biased because smaller companies are more likely to have an owner who is also the CEO or Board Chairman.

⁴⁰ We obtained 49 industry groups. To save space we do not report results in the text, however they are available on request.

⁴¹ Note that both ultimate ownership and control variables are highly correlated at 0.8593 level, we adopt the practice of Claessens et al. (2002) to use ultimate ownership as the controlled variable.

be interpreted by the desire of the UO to “overexpand” (e.g. self-aggrandizing or over-investing firms) to build empires and extract rents. This is also confirmed by the positive and significant estimated coefficient of firm size on the likelihood of a firm’s affiliation. These results support the theoretical predictions of Bebchuck et al. (2000), Wolfenzon (1999) and Almeida and Wolfenzon (2003) who argue that controlling shareholders’ incentives are distorted in favor of increasing the private benefits of control by expanding the firm with unprofitable projects. Similarly, we report that high cash (CASH) increases the likelihood of firm affiliation. The estimated coefficients for the risk (RISK) and indebtedness (DEBT) and liquidity (MDTR) -while of expected signs- are not significant.

The coefficient of family control of the firm is positive and significant (at the 5% level), indicating that it is more likely that a firm will be affiliated to PH when the ultimate owner is a family or coalition of families. In model 7 we report a negative (but non-significant) effect of dividend payout on the probability of affiliation; however, the interaction between dividend payout and family control has a positive and significant effect on the likelihood of affiliation. Interpreting this result, we can say that family controlled affiliates display a higher dividend payout policy than other firms. This evidence may support the conjecture that families at the apex of PH tend to make pervasive use of opportunistic practices (e.g. increasing cash distribution) aimed at re-deploying cash flows from “affiliated cash cows” in favour of tightly held firms in a fashion fitting their personal utility. The increased dividend payout in affiliated firms may also stem from the desire of ultimate owners to benefit from the fiscal advantage associated with interfirm dividends (which are not subject to double taxation), or to benefit from an active internal capital market. Besides, a plausible interpretation of the positive relationship between dividend payout and PH affiliation could be given by the desire of UO to reduce the asymmetry of information and the detection of potential risk of appropriation (Faccio, Lang, and Young, 2001).

In sum, results from the Logit regression are consistent with the hypothesis that firms tend to be affiliated to PH to satisfy the cash and dividend distribution preferences of the ultimate owner. These results provide some support to our main conjecture that the entangled equity holdings within pyramids create a screen for the ultimate owner to engage in appropriating behavior that is difficult for “weak” outside investors to penetrate. Hence, it is interesting to gauge the impact of such affiliation on corporate value.

Table 2: Logit estimation of the determinants of firm's affiliation to PH

This Table reports estimation of a Logit (Panel B) of Canadian firms' affiliation to PH, the dependent variable is a dummy variable that takes the value of 1 if the firm is affiliated to PH and 0 otherwise. The control variables are related to firm specific characteristics. In that, we control for ultimate control stakes (UCOS), the ultimate ownership stakes (UOWS), and the required minimum capital to control 20% of votes (MROV). We further control for Tobin's Q Ratio (TOBQ), total assets (SIZE), capital expenditures over total assets (CPEX), the dividend payout ratio (DIVR), debt ratio (DEBT), firm's cash (CASH), and the frequency of trading as the average of daily trading transactions (MDTR), the variance of stock daily returns (RISK). Finally, we use a dummy variable to distinguish family controlled firms (FAMC).

	Expected	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	sign								
UCOS	+	0.0241*	0.0256*	0.0239*	0.0238*	0.0223*	0.0241*	0.0242*	0.0247*
MROV	+	4.2146**	5.0463**	2.9670	4.3780**	5.4167**	5.1241*	5.1377*	5.5599*
DEBT	?	-0.1896	-0.1656	-0.1593	-0.0976	-0.2398	-0.1464	-0.1830	-0.1865
CPEX	+	0.1369*	0.1502*						
RISK	+		5.1826						
CASH	+			0.0379					
SIZE	+				0.1124*	0.1392**	0.1294*	0.1380*	0.1715*
MDTR	-					-0.00219			
FAMC	+						0.308***	0.308***	0.1363
DIVR	+							-0.1477	-1.2699
FAMC*DIVR	?								1.2734**
Percent		70.9	70.5	70.5	70.3	69.0	70.2	70.4	71.0
Concordant									

*significant at 1%; ** significant at 5%; *** significant at 10%

4.2.2. Multivariate regression analysis of the effect of PH on corporate value

We perform a multiple regression analysis to test if PH bear negatively on corporate value. Namely, we include a PH dummy variable (PAFF) that takes the value of one for affiliated firms and zero otherwise to capture the effect of pyramidal ownership. Our main measure of corporate value is Tobin's Q. However, we use return on assets and return on equity to test for the stability of our results⁴². We further control for several firm specific characteristics. Results are reported in Table 3.

⁴² We only report and discuss (in details) results related to Tobin's Q, for other corporate performance measures results are available upon request. For the issue of extreme values, results remain roughly unchanged.

Table 3: The valuation effect of firm's affiliation to PH (OLS regression)

This Table reports results of OLS multivariate regression of firm's affiliation to PH on Tobin's Q. We control for firm's affiliation to PH (a dummy variable that takes the value of 1 if the firm is affiliated to PH and 0 otherwise), ultimate control stakes (UOWS), firm size (SIZE) measured by the log of total assets, capital expenditures over total assets (CPEX), the dividend payout ratio (DIVR), debt ratio (DEBT), the variance of stock daily returns (RISK), and the average growth rate of sales over 1994-1996 (HGRS). The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

OLS regression results on the effects of pyramidal affiliation in firm value					
Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	5.2279 (0.0001)	4.6458 (0.0642)	4.53339 (0.0003)	4.9979 (0.0003)	5.2096 (0.0004)
UOWS	0.0076 (0.3336)	0.0079 (0.3195)	0.00783 (0.3246)	-0.0025 (0.6453)	-0.0025 (0.6431)
PYRA	-0.7229 (0.0408)	-0.7218 (0.0410)	-0.73046 (0.0398)	-0.4303 (0.0867)	-0.9961 (0.3951)
DEBT	0.0135 (0.1592)	0.0137 (0.1576)	0.01372 (0.1574)	0.0268 (0.0004)	0.0267 (0.0004)
RISK	0.3415 (0.0697)	0.3743 (0.0679)	0.36095 (0.0756)	0.1757 (0.2730)	0.1848 (0.3500)
CPEX	-0.1397 (0.2024)	-0.2256 (0.0891)	-0.22328 (0.0929)	-0.2622 (0.0559)	-0.2594 (0.0568)
SIZE		0.1270 (0.3936)	0.13262 (0.3733)	0.1208 (0.4560)	0.1078 (0.5067)
DIVR			-0.21863 (0.0581)	0.5162 (0.1800)	0.3440 (0.4224)
HGRS				0.6953 (0.0001)	0.7069 (0.0001)
PYRA*RISK					-0.0926 (0.6616)
PYRA*DIVS					0.8406 (0.2291)
Adj-R ²	0.0654	0.0642	0.0627	0.1854	0.1820

The coefficient for the binary variable associated with the affiliation to a pyramidal ownership is negative and consistently statistically significant in the Tobin's Q regressions. This evidence suggests that firms affiliated to a pyramidal ownership underperform unaffiliated ones in terms of market valuation. This undervaluation might reflect a discount charged by outside investors for the anticipated opportunistic behaviour of the ultimate owner within PH. The coefficients for the other control variables are of the expected signs. For instance, Tobin's Q is positively related to historical growth rate of sales (HGRS), risk (RISK) and debt (DEBT) and negatively related to capital expenditures (CPEX). In model 5 (Table 3) we use a binary variable to control for the interaction between risk and firm's affiliation to PH (PAFF*RISK). We document a negative effect on corporate value. Our interpretation for this result is that higher risk is associated with higher corporate performance; however, when the firm is affiliated to PH, higher risk seems to be associated with value discount related to the desire of the ultimate owner to maximize the default option of affiliated firms through risk taking. This result shows some potential of appropriation within a pyramidal ownership.

The consistency of the negative effect of PH affiliation on corporate value needs to be interpreted with caution. In fact, it is conceivable that owners of PH may acquire low performance companies, possibly placing them far down in their PH, to limit eventual negative impacts, and use them to manage private benefit appropriation. PH structures enable the ultimate owners to internalize only a part of the financial costs related to their appropriation behaviour. Yet, they are able to gain the larger part of the induced private benefits. For instance, UO might tend to enhance their control by affiliating, far down the PH, firms with low corporate value whose “profitability is relatively unimportant to them” and use them as a vehicle either to appropriate minority interest or to extract other forms of private benefits of control. Bebchuck et al.’s (2000) model predicts that the controller might choose the project with lower value but the larger private benefits of control (e.g. firms with low or negative returns, firms with less liquid stocks).

To overcome this selectivity or omitted variable bias, we run a Heckman (1979) two-step estimation procedure. Correcting for sample selection bias can theoretically change the sign, magnitude, or significance of the relationships found in regression (2), assuming a random selection. We first use a probit estimation of equation (1) as our selection equation. Then we use the estimates from the probit regression to compute the Heckman *LAMBDA* (λ_i) for each firm, which when added to equation (2) corrects for potential correlation between the error in the first-stage probit regression and the error term of equation (2)⁴³. Then, we estimate the equation (2) conditioned on the probability of being affiliated, described by the following specification:

$$E(TOBQ |_{PAFF}) = \alpha + \beta' \underline{\Gamma}_i + \delta * PAFF_i + \delta_\lambda \lambda_i + \varepsilon_i \quad (2-a)$$

Results of the corrected equation (2.a) are reported in Table 4. The *Heckman* (*LAMBDA*) estimates of affiliation on corporate value are negative and significant across the four specifications⁴⁴.

⁴³ See Greene 1997, chapter 20 and Heckman (1979) for further details.

⁴⁴ We also compute the help and control factor $DELTA = -LAMBDA * IPS - LAMBDA * LAMBDA$, where *IPS* is the predicted value from the probit model. The value of *DELTA* should be between -1 and 0. The estimated *DELTA* in our model is between -0.81 and 0.

Table 4: The valuation effect of firm's affiliation to PH (Heckman two-step selection)

This Table reports an estimation of firm's affiliation to PH on Tobin's Q. The equations are estimated using the Heckman-two step estimation to correct for the selection bias between firm's affiliation to PH and its corporate value. We control for firm's affiliation to PH (a dummy variable that takes the value of 1 if the firm is affiliated to PH and 0 otherwise), ultimate control stakes (UOWS), firm size (SIZE) measured by the log of total assets, capital expenditures over total assets (CPEX), the dividend payout ratio (DIVR), debt ratio (DEBT), the variance of stock daily returns (RISK), and the average growth rate of sales over 1994-1996 (HGRS). The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

Heckman two-step estimation of the valuation effect of PH affiliation (correction for bias selection)				
Variables	Model 1	Model 2	Model 3	Model 4
Intercept	5.5699 (0.0001)	5.2659 (0.0001)	5.1450 (0.0001)	5.2572 (0.0002)
UOWS	-0.0234 (0.0812)	-0.0224 (0.1092)	-0.0229 (0.1017)	-0.0190 (0.1277)
PYRA	5.7908 (0.1104)	5.6004 (0.1269)	5.6882 (0.1227)	2.9210 (0.1604)
DEBT	0.01635 (0.0929)	0.0163 (0.0953)	0.0164 (0.0943)	0.0046 (0.0001)
RISK	0.3707 (0.0597)	0.3864 (0.0630)	0.3711 (0.0709)	0.1740 (0.2776)
CPEX	-0.3092 (0.0037)	-0.3477 (0.0083)	-0.3468 (0.0083)	-0.3294 (0.0187)
SIZE		0.0641 (0.6665)	0.0696 (0.6395)	0.0956 (0.5635)
DIVR			-0.2535 (0.0430)	0.4568 (0.2356)
HGRS				0.7095 (0.0001)
Heckman (<i>LAMBDA</i>)	-3.9921 (0.0889)	-3.8750 (0.1019)	-3.9350 (0.0985)	-2.0472 (0.1095)
Adj-R ²	0.0709	0.0691	0.0677	0.1851

Thus, the sign of the coefficient is determined by the correlation between the two error terms in the probit (first-stage) regression and equation (2). A significantly negative coefficient therefore means that the error term in equation (2) is negatively correlated with the error term in the first-stage regression. Intuitively, the negative coefficient on the *Heckman* variable suggests that the likelihood of affiliating a firm to PH is positively associated with low Tobin's Q. This result might also be interpreted as consistent with our argument that ultimate owners may acquire low performance companies, possibly placing them far down in their PH to limit eventual negative impacts, and use them for private benefit appropriation. They do this because PH structures entail the ultimate owners to internalize only a part of financial costs related to their appropriation behavior, yet they are able to gain the larger part of the induced private benefits. More importantly, the estimated coefficient of the effect of pyramidal affiliation on corporate value becomes positive but not significant. Indeed, the Heckman estimate of the bias selection fully subsumes all negative effect of PH on corporate value. The *new* positive effect of PH on corporate value might be associated with the benefits of group (pyramidal affiliation) as PH can generate financial synergy and

thus create value via its internal capital market. The results for the other variables are consistent with those reported in Table 3.

In Table 5 we report the results of regression with the ratio of ultimate ownership over ultimate control, our proxy of the length of the ownership chain. If this ratio increases, it means that the deviation between control and cash flow rights is not sharp and the length of the ultimate ownership chain is short.

Table 5: Regression analysis of the ratio of ultimate ownership over control stakes

This Table reports results of regression analysis of the determinants of the ratio of ultimate cash flow over voting rights on firm specific characteristics of firms affiliated to PH. The sample comprises 387 affiliated firms. This is a proxy for the length of the ownership chain that might be considered as an indicator of the degree of appropriation by the ultimate owner. We control for the minimum required capital to control 20% of votes (MROV), Tobin's Q Ratio (TOBQ), total assets (SIZE), capital expenditures over total assets (CPEX), dividend payout ratio (DIVR), debt ratio (DEBT), firm's cash (CASH), the Bid-Ask spread (BASP), and a dummy variable to distinguish family controlled firms (FAMC). The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

Variables	Expected Sign	Model 1	Model 2	Model 3	Model 4
Intercept		0.5722 (0.0019)	0.4995 (0.0090)	1.3824 (0.0001)	1.1883 (0.0001)
MROV	+	2.2135 (0.0001)	2.6054 (0.0001)	0.2098 (0.0001)	0.2127 (0.0001)
SIZE	-	-0.0351 (0.0015)	-0.0403 (0.0008)		
DEBT	?		-0.0135 (0.8820)		0.1954 (0.0842)
RISK	-	-0.0403 (0.0465)	-0.0557 (0.0059)	-0.0284 (0.1932)	
CASH	-			-0.0310 (0.0077)	
DIVR	+			0.0380 (0.7060)	
BASP	+				0.0732 (0.0074)
TOBQ	+			-0.0041 (0.4779)	-0.0180 (0.0615)
FAMC	-			-0.1825 (0.0011)	-0.2055 (0.0001)
Adj-R ²		0.1077	0.1535	0.1872	0.2217

Consistent with our conjecture of an opportunistic behaviour of ultimate owners within their cascade of affiliated firms, we find that the ratio of UOWS over UCOS is negatively related to firm size, risk, and cash variables. Our interpretation of these seemingly robust results is that the ultimate owner tends to increase the number of intermediary corporations separating him from the affiliated firm, in which he would exert his control to impose value decreasing decisions (large size or excessive cash availability) or excessive risk taking in a fashion that cancels the negative consequences of such decisions (negative shocks). We report a negative and significant relation between family control and the ratio of UOWS over UCOS, indicating that families tend to enhance their control via the pyramidal structure. On the other hand, Panel C (Table 5) presents positive and significant estimated

coefficients of the required minimum capital to control 20% of votes (MROV) and the dividend payout ratio (DIVR). These relationships support our conjecture of the appropriating behaviour of the UO, who tends to shorten the length of the ownership chain separating the apex from affiliated firms with positive shocks (e.g. dividend distribution). Furthermore, the positive relationship between MROV and the ratio UOWS over UCOS might be explained by the desire of the UO to enhance control with means available in the affiliated firms to heighten the entry barrier for competitors for the voting power. Finally, we report positive and significant relations between the debt ratio and the ratio of UCOS over UOWS. We provide the following interpretation to these findings: When the deviation between ultimate control and ultimate cash flow rights is low, it is easy for the UO to finance projects through external finance. Besides, higher debt ratio might be an indicator of satisfying financial performance. That is, the ultimate owner orchestrates voting and cash flow rights to maximize benefits from positive shocks (higher corporate performance, higher dividend payout).

5. Conclusion

We raised the issue of corporate governance in pyramidal holdings and the opaque veil that surrounds their complex structures and operations of equity holdings. In sum, results from the logit regression are consistent with the hypothesis that firms tend to be affiliated to PH to satisfy the cash and dividend distribution preferences of the ultimate owner. We also find that ultimate owners, usually families, tend to synchronize their cash flow rights, voting power, and the distance separating them from the affiliated firms - measured by the ratio of ultimate ownership over ultimate control- in such a fashion as to minimize their sensitivity to negative events and maximize sensitivity to positive events. The upshot is that pyramidal ownership depresses corporate value of affiliated firms. One plausible interpretation is that the anticipated costs of the opportunistic behaviour of the ultimate owner more than offset any benefits of pyramidal ownership. However, when we control for the selection bias, the *Heckman* estimate fully subsumes all negative effect of pyramidal holdings on corporate value. This result might be interpreted as consistent with our argument that ultimate owners may acquire low performance companies, possibly placing them far down in their PH, to limit eventual negative impacts, and use them to manage private benefits appropriation.

Overall, these features suggest that pyramidal holdings may exacerbate the unfairly treatment of minority interest, which would undermine the attractiveness of stock market to

investors (Morck (1995)). Obviously, our findings suggest that the effective governance of pyramidal holdings requires the monitoring of the key actors in the pyramids, starting with ultimate owners. This can be done by committing to a high disclosure policy, adding outsiders to the board, and imposing one-share-one-vote rules and sanctions against insider trading and market manipulations. Our findings suggest a future research agenda. For example, future work may try to explain the effectiveness of the internal mechanisms of corporate governance (e.g. Board structure, etc.) in PH or examine the event of affiliating firms on corporate value and on investor behavior. This would help to shed light on the role of PH in financial markets.

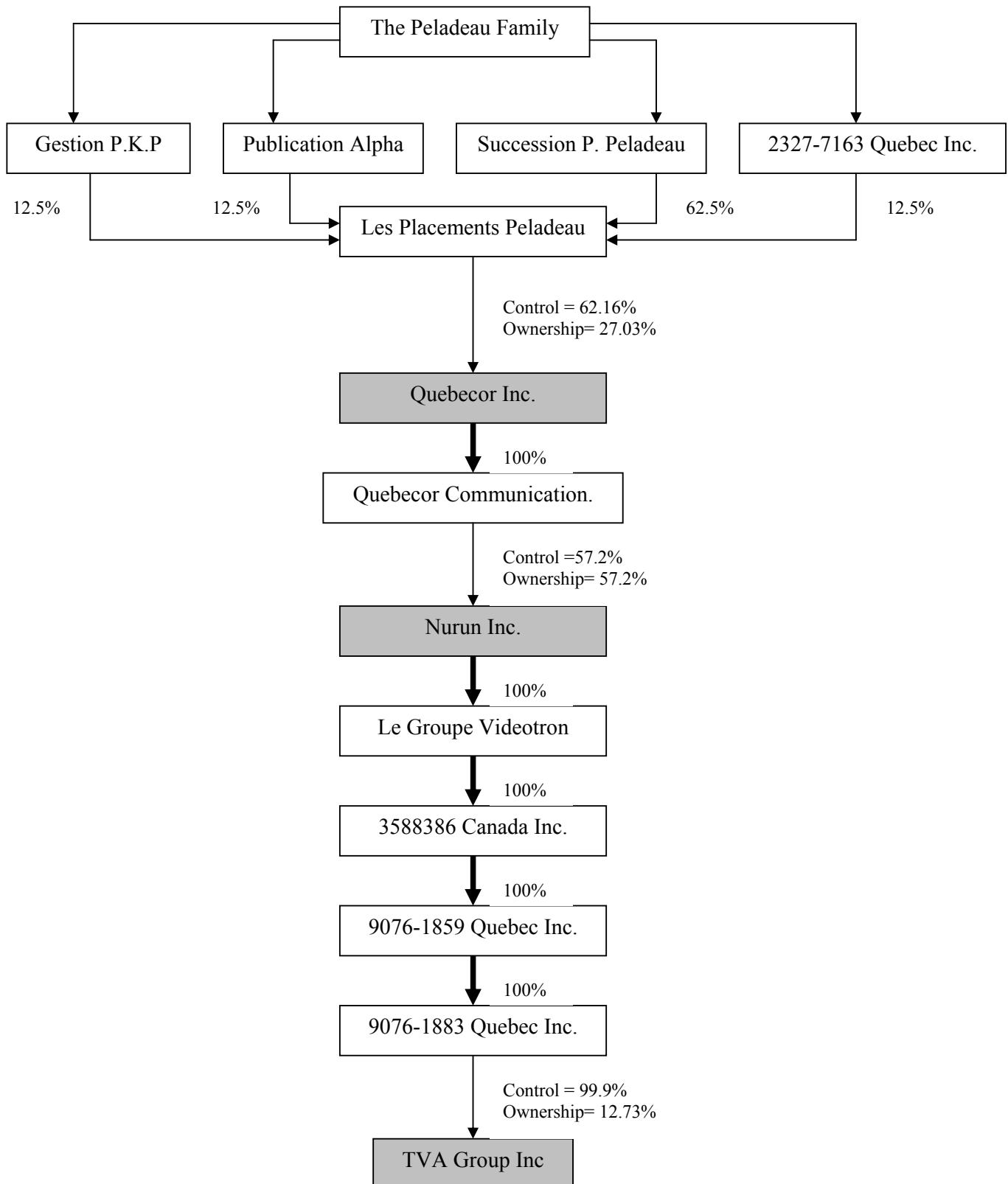
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Appendix: The Péladeau Group



CHAPTER III:

FAMILY CONTROL, ASYMMETRIC INFORMATION, AND BID-ASK SPREAD

Abstract:

We examine the relationship between stock liquidity and the ultimate ownership structure. We find that in Canada corporate ownership is concentrated. In addition, the ultimate owner, generally a family, uses pyramidal, cross holdings and other mechanisms to enhance his control and the deviation between his ultimate ownership and his ultimate voting power. Our results suggest that the presence of a family increases the bid-ask spread. In addition, the magnitude of the deviation between ultimate ownership and ultimate control in the presence of families is important in determining the bid-ask spread. Furthermore, we document that mechanisms of enhancing control, say pyramid at the presence of families, significantly affect bid-ask spreads.

1. Introduction

Interpreting world-wide evidence, La Porta et al. (1998) could hold the view that countries functioning under a Common law regime and the “Anglo-Saxon” model of corporate governance offer better protection to the small investors and better conditions for the development of large, more liquid, capital markets. However, La Porta et al. (1999), Claessens et al. (2000), and Faccio and Lang (2002), after tracing the ownership chains back to their ultimate owners, show that (ultimate) corporate ownership, around the world, is largely concentrated and controlled by families. This finding accords with the argument by Shleifer and Vishny (1997) that “... as ownership gets beyond a certain point, large owners gain nearly full control of the company and are wealthy enough to prefer to use firms to generate private benefits of control that are not shared by minority shareholders...” (p.759).⁴⁵ An interesting question thus arises as to how investors react to the presumed appropriating behavior of large controlling owners under the “Anglo-Saxon” model, like that of the US. As argued by Morck et al. (2001), how can Canada, which shares a Common Law heritage with the US and has an equally effective legal system (in terms of law enforcement and protection of minority interests), display extensive ownership concentration⁴⁶. Obviously this state of affairs deserves scrutiny and some answer must be found.

In that context, we investigate the relationship between stock liquidity and the ultimate ownership structure. Liquidity is maximal where buyers and sellers can trade without delay and price concession, that is, in a market with zero bid-ask spread. A real market displays bid-ask spreads however small. In markets driven by market makers (dealers) or limit orders⁴⁷, they are an important component of transaction costs faced by investors.

⁴⁵ Empirically, Morck et al. (1988) and McConnell and Servaes (1990) document an inverse U-shaped relationship between firm valuation and managerial equity ownership for a sample of US firms. The interpretation is that higher managerial ownership improves performance, however managers become entrenched after a point and pursue private benefits at the expense of minority shareholders. The literature (e.g. Stulz (1988)) indicates that the positive incentive effect relates to the share of cash-flow rights held by large shareholders and that the negative entrenchment effect relates to the share of control rights held by large shareholders. Using a sample of corporations in East Asia, Claessens et al. (2002) successfully disentangle the incentive and entrenchment effects of large ownership that are so difficult to tell apart in US data.

⁴⁶ Morck et al. (2001) argue that Canadian and US economies have broadly “similar factors endowments, and employ virtually identical technology and human capital in similar institutional frameworks” except for their ownership structure. See also La Porta et al. (1998).

⁴⁷ Market makers or specialists quote the bid and ask prices in “quote-driven markets” such as NASDAQ. Market makers play the role of both dealers and investors. In “limit-order-driven markets” such as Tokyo Stock exchange, prevailing prices are set by limit orders. More precisely, market makers buy (sell) a fixed number of shares at current prices. Conversely, limit orders refer to requests to buy (sell) a fixed number of shares at a limit

Current literature suggests that bid-ask spreads are driven by costs faced by dealers: mainly inventory holding costs, order-processing costs, and adverse information costs⁴⁸. Inventory holding costs are incurred by dealers forced to carry stock positions (long or short) that are different from their optimal holdings. Order processing costs refer to the costs of maintaining the limit order book, and “enforcing price and time priority rules” for order execution⁴⁹. Adverse or asymmetric information costs are driven by transactions with traders who are more informed than the market maker⁵⁰.

Stoll (2000) argues that the spread exists to provide protection against losses linked to trading by “superior-or adverse-” information investors. He defines friction in financial markets as the difficulty with which an asset is traded. Manipulating insider information and the news reaching the market increases such friction. Usually, small investors are alert to dilution and care about the liquidity of their portfolios (i.e. transaction immediacy). However, ultimate owners have an influential role that generates information asymmetry, caused by their incentives to obtain the necessary information to effectively control corporate policies, that reduces the liquidity of the equity markets. Consistent with this view, Bhude (1993) writes that stock liquidity can be enhanced by having a more diffuse ownership and argues that the success of the US market regulation may be ascribed to its emphasis on disclosure requirement and one-share-one-vote rules. Sanctions against unreported inside trading protect small stockholders and reduce the risks of diffuse stockholding (i.e. management opportunism). In addition, Beny (1999) reports that weaker insider trading regimes (laws) have less liquid equity markets. Thus, under the assumption that controlling ultimate owners are better informed than others, bid-ask spreads are increased to reflect the costs of the

price, set by limit-order traders. It is worth mentioning that stock markets might be hybrid, where both specialists and limit-order traders set prices (e.g. NYSE, TSX). See Chung et al. (1999), Brown and Holden (2002), among others.

⁴⁸ Other factors, such as trading volume and frequency, influence the bid-ask spread. In addition, recent work by Chordia et al. (2001), suggests that market direction affects the spread. Namely, they report a significant asymmetric response of spreads to up and down markets. That is, spreads sharply increase in down markets and weakly decrease in up markets.

⁴⁹ Stoll (1989), Madhavan and Smidt (1993), among others.

⁵⁰ Easley et al. (1996) find that large spreads, for stocks with higher information based trading, are not merely the result of market power by market makers, or difficulties in risk-bearing due to inventory, rather the result of private information. In fact, unequal costs of obtaining and processing information may lead to trading of securities and wealth distribution effects among investors (Morse 1980). Van Ness et al. (2001) show that the adverse selection components perform like spreads as a proxy for information asymmetry.

heightened information asymmetry involved⁵¹. Because small investors are usually alert to dilution and care about portfolio turnover, they will avoid stocks of firms for which the risk of private benefits extraction is large. As the dilution of minority interests usually takes the form of inside information exploitation and firm news manipulation, small investors will select more liquid stocks to lower the cost of their 'exit' option. In some sense, stock liquidity acts as a monitoring device for the minority shareholders.

Yet, worldwide evidence by La Porta et al. (1999) shows agency problems and information asymmetry are entrenched in the corporate marketplace, and that the ultimate owner uses such characteristics to enhance his control and extract private benefits at the expense of minority shareholders. It documents that ultimate control in 27 countries around the world is highly concentrated and sharply deviates from ultimate ownership (except in Anglo-Saxon countries). This deviation or separation is achieved through the use of different means of enhancing control, such as pyramidal structures, multiple control chains, cross holdings, multiple class shares, the appointment of family related managers, etc. Evidently, a positive relation is expected between spreads set by market dealers, separation of ownership from control, and means used by the ultimate owner to enhance both control and private benefits.

However, prior literature on market liquidity uses either market microstructure variables or direct ownership stakes to explain bid-ask spreads⁵². That is, prior studies ignore the effect of ultimate ownership, its deviation from ultimate control, and the means of enhancing control on stock liquidity.

⁵¹ Note that in a liquid stock market the benefits of informed trading might offset the costs of monitoring [see Glosten and Milgrom (1985), Amihud and Mendelson (1986), Stoll (1989), Bhidé (1993), Beny (1999), among others].

⁵² Empirical evidence on the trade-off between market liquidity and ownership structure is rather rare. Demsetz (1968) has shown that the number of shareholders affects the transaction rate. Benston and Hagerman (1974) report a relation between a proxy for insider holdings and bid-ask spread. Chiang and Venkatesh (1988) investigate this relationship for 56 firms listed on the New York Stock Exchange in 1973 and report a positive relationship between insider ownership and spreads. In contrast, Glosten and Harris (1988) report an insignificant relationship between spreads and insider ownership, for a larger sample of 250 American firms of the 1981-1983 period. More recently, Sarin et al. (1997) document that higher insider and institutional ownership are both associated with wider spreads and smaller quoted depth. They suggest that the loss of liquidity is a consequence of adverse selection costs for insiders while for institutional holdings it is a result of higher inventory carrying costs. Their sample covers 786 stocks, listed on the AMEX or NYSE in 1984. Heflin and Shaw (2000) examine the association between block ownership and market liquidity, and report that stocks with block holder ownership have larger spreads.

To our knowledge, we innovate by collecting ownership data about 1167 Canadian traded corporations for the year 1996 and examining the relationship between stock liquidity and ultimate ownership structure. We find that in Canada corporate ownership is concentrated. In addition, the ultimate owner, generally a family, uses pyramidal holdings, cross holdings and other mechanisms to enhance his control, to accentuate the deviation between his ultimate ownership and his ultimate voting power. Our results suggest that the presence of a family increases the bid-ask spread. In addition, the magnitude of the deviation between ultimate ownership and ultimate control in the presence of families affects the bid-ask spread. Furthermore, we document that mechanisms for enhancing control, such as the use of pyramids by families, also affect the spreads.

Our evidence is special in that it shows that bid-ask spreads only relate to the presence of families but not to other types of controlling owners. This finding is linkable to the evidence provided by Bhattacharya and Ravikumar (2001) whereby family businesses are prone to decreases in management quality over the long term (or successive generations). It is also consistent with Morck et al.'s (2001) argument that influential families may shape prices in capital markets and lobby politicians so as to extract political rents and dilute minority interests⁵³.

Furthermore, we investigate: (1) the robustness of our results, (2) the sources of information asymmetry, and (3) the causality issue. We note that, according to Easley et al. (1996), high volume stocks tend to have a higher arrival rate of both informed traders and uninformed traders, hence they are less risky. In contrast, less active stocks face a greater risk of informed trading, and their larger spreads reflect the smaller proportion of uninformed traders. As for our evidence, given the presence of a large shareholder in the majority of sampled firms it likely reflects the smaller number of uninformed traders or a lower uninformed trading volume. Hence our observation of larger spreads and the likelihood that these have little to do with the information asymmetry resulting from the presence of families. However, after we control for uninformed holding or trading, similar results still obtain. This suggests that our results are robust and not driven by uninformed holding or trading.

⁵³ Jaffe (1974) shows that insiders do possess special information. Giammarino et al. (1992) show that corporate insiders manipulate corporate actions in an opportunistic fashion. Daniels and Morck (1995) argue that there is little if any opportunity for managers to ignore the large shareholders' wishes. This evidence illustrates the extent of power of controlling families.

We also document that the deviation between ultimate ownership and ultimate control affects bid-ask spreads. However, since both variables are highly correlated, it is virtually impossible to distinguish their respective effects in the OLS regression. For these reasons, we examine the endogeneity between stock liquidity, ultimate ownership, ultimate control and the ownership-control deviation. Simultaneous regression results indicate that the bid-ask spread reflects the asymmetric information costs attached to ultimate control but not to ultimate ownership. As a result, the ownership-control deviation, as measured, captures the effect of ultimate control and further affects the bid-ask spread. Our evidence turns out to be consistent with reverse causality in that controlling shareholders also look for stocks that display less liquidity to avoid monitoring from outside investors. Finally, we use intraday quotes and prices (with a 6-second interval) to compute three alternative measures of asymmetric information: the average dollar spread, the average bid-ask spread and the adverse selection cost calculated using the Glosten-Harris model (ADSC-*GH*). We innovate by documenting that the deviation between ultimate control and ultimate ownership is positively related to the adverse selection component. Overall, our robustness check supports our previous conclusions.

The remainder of this paper is organized as follows. Data construction and methodology are portrayed in section 2. Results and discussions are presented in section 3. Section 4 concludes the paper.

2. Data construction, methodology, and description of variables

2.1. Data construction

We start with the Canadian listed firms in *Stock Guide* 1996, a year lending itself to comparisons with the ownership structures reported for other countries in recent research (e.g., La Porta et al. (1999), Claessens et al. (2000) and Faccio and Lang (2002)). Data on the identity and size of direct and ultimate ownership and control stakes were collected manually from two sources: (1) *The Financial Post* "Survey of Industrials" and "Survey of Mines and Energy Resources" and (2) Statistics Canada *Intercorporate Ownership in Canada*. These sources provide information on all major shareholders and their stakes, as well as directors' ownership, for all listed firms in 1996. Ambiguities about shareholder identity or stake were reconciled through *Stock Guide*.

Canadian regulations require insiders to disclose holdings “beneficially owned, directly or indirectly or exercised control or direction” exceeding 10% of a firm’s shares. Accordingly, we classify the firms in our sample into two groups - widely-held and closely-held - at an ultimate control cut-off of 10%.⁵⁴ We further classify closely-held firms into family-controlled or non-family-controlled (i.e., controlled by the state, a widely-held financial institution, a widely-held corporation, or a miscellaneous investor such as a charity, voting trust, cooperative, minority foreign investor). If the shareholder with the most control rights is an unlisted company, we consider that company to be family-controlled (with the exception of companies controlled by unlisted financial institutions, which we classify as non-family-controlled).⁵⁵ Furthermore, when we encounter individual shareholders, we do not distinguish between family members and use the family group as the unit of analysis.

For each closely-held firm, we calculate the ultimate ownership stake (UOWS) and ultimate control stake (UCOS) using the methodology of La Porta et al. (1999) and Claessens et al. (2000). By examining all shareholders who control at least 10% of voting rights as well as their respective chains of ownership, we can measure ultimate ownership and control in terms of cash flow and voting rights. For example, if a family owns 25% of Firm X which owns 20% of Firm Y, then this family owns 5% of the cash flow rights of Firm Y – the product of the ownership stakes along the chain – and controls 20% of Firm Y – the weakest link along the control chain. Note that ultimate control can deviate from ultimate ownership through the use of dual-class shares, pyramids and cross-holdings.

2.2. *Description of variables*

We collect daily closing bid, and closing ask, prices over the period extending from 01/01/1996 to 31/12/1996. For each sampled firm, the daily closing bid-ask spread in percentage (BASP) is computed thus:

$$BASP = (Ask - Bid) / [(Ask + Bid) / 2] * 100 \quad (1)$$

For the year 1996, we collect daily transactions, daily closing prices, daily returns in order to compute the average daily trading transactions (MDTR) as a proxy for stock

⁵⁴ The use of a 10% cut-off is consistent with previous studies such as Claessens, Djankov, Fan and Lang (2002).

⁵⁵ This is because we are usually unable to identify the owners of unlisted companies, see Faccio and Lang (2002) for more discussion.

frequency trading⁵⁶, the average of daily closing prices (CLSP) as a proxy for stock price, the variance of stock daily returns as a proxy for return variability (RISK). Finally, we consider total assets (SIZE) at year-end 1996 as a proxy for firm size⁵⁷.

As for corporate ownership structure, we control for ultimate control stakes (UCOS)⁵⁸ and ultimate ownership stakes (UOWS). We measure ultimate ownership and control in terms of cash flow and voting rights. For example, if a family owns 25% of Firm X that owns 20% of Firm Y, then this family owns 5% of the cash flow rights of Firm Y – the product of the ownership stakes along the chain – and controls 20% of Firm Y – the weakest link along the control chain.

We check for the presence of means to enhance control, such as pyramidal holdings (PYRA), multiple control chains (MUCC), cross holdings (CRHO), the use of multiple class shares (MCLS), non-voting shares (NVOS), the required minimum capital to control 20% of the votes (MROV)⁵⁹ and whether managers belong to the controlling family (MFCF)⁶⁰.

⁵⁶ Previous research uses trading volume (VOLM) as a proxy for trading frequency. However, since VOLM and MDTR are highly correlated (0.86), if we replace MDTR by VOLM (volume/shares outstanding), the results remain similar. Furthermore, we consider the mean ratio of quote changes over quotes (QCOQ) as a proxy for information trading. Quote changes refer to the number of times the valid market quoted prices changed throughout the day for the security and quotes refer to the number of valid market quotes posted throughout the day for the security. Since prices do not always change when a new quote is posted, quote changes will always be less than or equal to quotes. This ratio might be compared to the turnover ratio (shares traded to shares outstanding), used by Stoll (1978) and Benston and Hagerman (1974) as a proxy for information trading. However the ratio of quote changes over quotes is inversely related to the turnover ratio. If we include this variable into the regressions, overall results remain similar. However, since we will incorporate a variable of uninformed trading in Table 6, there is little need to use the proxy for information trading.

⁵⁷ The commonly used control variables to explain cross-sectional bid-ask spread variation are trading frequency, closing price, risk, and firm size. In fact, Anderson and Fraser (2000) argue that stock-trading frequency is a proxy for the speed of information capture in stock prices. This frequency should be correlated with the variance of corporate assets and liabilities. Stoll (1978) argues that trading volume and risk affect the dealer's holding costs, and stock price is a proxy for the minimum unobservable cost. His theoretical and empirical evidence show that spreads are negatively related to trading volume and stock price, and positively related to returns variability. Besides, as proposed by Amihud and Mendelson (1986), liquidity affects asset prices because investors require a compensation for bearing transaction costs. In addition, Chiang and Venkatesh (1988) suggest that firm size is a significant determinant of the bid-ask spread. They argue that the well-known small-firm anomaly might be attributed to their illiquidity, which is reflected in a larger bid-ask spread. On the other hand, the fact that market dealers face higher adverse selection problems when trading small firm stocks might explain the negative expected relationship between firm size and bid-ask spread. Demsetz (1986) argues that smaller firms might have a smaller number of insiders and hence retain more inside information, thus explaining their wider spreads.

⁵⁸ We use UCOS_1 and UCOS_2 to distinguish between first and second ultimate control stakes (similarly for UOWS_1 and UOWS_2).

⁵⁹ For example, a firm has 1000-type A shares (three voting rights per share), 5000-type B shares (two voting rights per share), 70 000-type C shares (one-share-one-vote). The total number of outstanding shares is 76000 = (1000 + 5000 + 70000), the total number of voting rights is 83000 = (1000x3 + 5000x2 + 70000x1). The

Firm Y is said to be controlled through “pyramiding” if it has an ultimate owner, who controls Y indirectly through another corporation that it does not wholly control. For example, if a family owns 15% of Firm X which owns 20% of Firm Y, then Y satisfies the 10% threshold in terms of control. However, at the 20% threshold, we would say that Firm X (which is widely-held at the 20% threshold) directly controls Firm Y and no pyramiding would be recorded. If Firm X holds 100% of Firm Y, then again there is no pyramid. Pyramiding implies a discrepancy between ownership and control rights for the ultimate owner. In the above example, the family owns 3% of the cash flow rights of Firm Y – the product of its ownership stakes along the control chain — but its control rights are measured by the weakest link in its control chain, i.e., 15 percent.

Firm Y is said to be controlled through a “multiple control chain” if it has an ultimate owner who controls it via *a multitude* of control chains, each of which includes at least 5% of the voting rights at each link. In the previous example, suppose that the family also owns 7% of Firm Y directly. Then the family owns 10% of the cash flow rights of Firm Y ($0.15 * 0.20 + 0.07$) and controls 22% of its voting rights ($\min(0.15, 0.20) + 0.07$)^{61,62}. Finally, firm Y is said to be controlled by a “reciprocal-holding” at the 20% threshold if Firm X holds a stake in Firm Y of at least 20 percent, and Y holds a stake in Firm X of at least 20 percent.

3. Results

3.1. Descriptive statistics

The evidence reported in previous chapters (CHAPTERS I and II) suggests that Canadian corporate ownership is characterized by concentration and ultimate owners who

controlling shareholder needs to hold $16600 = (0.2 \times 83000)$ voting rights to control 20% of total voting rights, but needs to hold, for example, 1000-type A shares, 5000-type B shares, and 3600-type C shares. That is, the controlling shareholder needs $12.63\% = (1000 + 5000 + 3600)/76000$ of the total cash flow rights to control 20% of voting rights.

⁶⁰ A member of the controlling family is said to be in “management” if he/she is the CEO, Honorary Chairman, Chairman, or Vice-Chairman. We assumed that individuals are in the same family if they have the same last names, a convention that understates family affiliation.

⁶¹ A firm can be controlled by holdings through multiple control chains, even though pyramiding does not control it. For example, suppose that Firm A controls 10% of B and 100% of C, which controls 15% of B. Since C is fully controlled by A in the control chain A-C-B, there is no pyramiding. However, Firm A controls Firm B directly and indirectly through Firm C, with control rights of 25 percent. We conclude that Firm A controls Firm B through multiple control chains because; (1) Firm B has a controlling owner at the 20% level, (2) B is controlled via multiple control chains, and (3) all links in each chain involve at least 5% of the control rights.

⁶² Claessens et al. (2000) define “holdings through multiple control chains” as “cross-holdings”.

seek to enhance their control. In such setting information asymmetry and agency costs should be higher than otherwise. Thus, it becomes interesting to examine the effect of the ultimate ownership structure on stock liquidity as reflected in bid-ask spreads. Table 1 documents the distribution of these bid-ask spreads in relation to ultimate ownership at the cut-off levels chosen (10 and 20%), and with respect to the type of ultimate owners.

Panel A in Table 1 documents that bid-ask spreads for firms with an ultimate owner are significantly larger than for firms without such an owner. This is consistent with the notion that asymmetry costs are worsened by the presence of an ultimate owner, since he may exert rent-seeking behavior at the expense of minority shareholders. More importantly, we find that the presence of a second ultimate owner increases the asymmetry costs and agency problems.

Table 1: Ultimate ownership structure and stock liquidity

This Table reports mean and median comparison differences in the mean of daily percentage of bid-ask spread (BASP) (as a proxy for stock liquidity and information asymmetry) between groups of firms ranked according to their ultimate ownership structure (Panel A) and type of the ultimate owner (Panel B). We distinguish between firms that are widely-held, firms that have an ultimate owner and firms that have a second ultimate owner. The analysis is conducted for both cut-offs: 10 and 20 percent. The P-value of the mean and median comparison tests is represented in the two last columns. The full sample includes observations on 1121 corporations for the 1994-1996 period

Panel A: Ultimate ownership structure at the 10 and 20% cut-off levels												
Existence of ultimate owner												
10% cut-off						20% cut-off						
Non-Existence		Existence		P-value of tests of differences in: means medians		Non-Existence		Existence		P-value of tests in differences in: means medians		
Mean	Median	Mean	Median			Mean	Median	Mean	Median			
BASP	3.3792	2.0478	4.5067	3.0816	0.0026	0.0001	4.0200	2.3375	4.4380	3.2087	0.2276	0.0001
Existence of second ultimate owner												
BASP	3.8760	2.5815	5.0049	3.2822	0.0013	0.0094	4.1739	2.6398	4.8377	3.3560	0.1501	0.0312
Panel B: Type of the ultimate owner at the 10 and 20% cut-off levels												
10% cut-off						20% cut-off						
Non-Existence		Existence		P-value of tests of differences in: means medians		Non-Existence		Existence		P-value of tests in differences in: means medians		
Mean	Median	Mean	Median			Mean	Median	Mean	Median			
Family controlled firms												
BASP	3.5393	2.3735	4.8810	3.0334	0.0001	0.0001	3.9384	2.4958	4.7867	3.2251	0.0127	0.0001
Sate controlled firms												
BASP	4.3096	2.8171	3.3019	2.0816	0.2046	0.1016	4.2817	2.7923	3.9060	2.7412	0.7903	0.7216
Widely-held financial institution controlled firms												
BASP	4.3237	2.8129	4.0530	2.6794	0.5317	0.5224	4.2323	2.7601	4.6854	3.3642	0.4319	0.4231

More precisely, Panel A shows that bid-ask spreads are lower for firms without a second ultimate owner compared to firms with a second ultimate owner. The tests about differences in means and medians are statistically significant. Our interpretation is that the presence of second ultimate owners in Canadian firms does not reduce information asymmetry.

In light of the above evidence, we report in Panel B of Table 1 mean and median bid-ask spreads for three types of ultimate owners: family, financial institution and the government.⁶³ We find that spreads for firms ultimately controlled by families are significantly larger compared to firms not controlled by families. These results are compatible with the rent-seeking behavior hypothesized for such families and provide some justification to argue that information asymmetry and agency costs are worsened in the presence of family control. We find no real evidence that government control is associated with lower bid-ask spreads. Consistent with findings for East Asia (Claessens et al. 2002), we find that control by the government is not associated with a liquidity discount⁶⁴. Similarly, no significant difference in spreads is associated with control by widely-held financial institutions at both the 10 and 20% levels. This suggests that financial institution control does not necessarily mean lower asymmetry of information⁶⁵. To sum up, results in Table 1 suggest that ultimate ownership (beyond 10 or 20%) generally signifies larger bid-ask spreads, and lower liquidity, especially when a family is in control.

3.2. Regression analysis

We rely on prior research to consider stock price, return volatility, firm size, and trading activity as significant determinants of bid-ask spreads. According to our regression results in Panel A of Table 2, we find negative and statistically significant effects for the number of transactions, stock price and firm size, and a positive, statistically significant, effect of risk on the spread. The estimated coefficients of these variables are statistically significant (at the 1% level) across different model specifications. These findings are consistent with both the theoretical predictions of Stoll (1978), and empirical evidence provide by Stoll (1978) as well as with evidence from Chiang and Venkatesh (1988), Glosten and Harris (1988), Sarin et al. (1997), Heflin and Shaw (2000), etc. In addition, we report a relatively high degree of explanatory power with adjusted R-squares above 0.67 throughout. In model 1 (Table 2) we control for ultimate ownership stakes and find the estimated

⁶³ Results for the two other categories of ultimate owners (widely-held corporations, or miscellaneous investors) are available upon request from the author.

⁶⁴ Note that our results only mean that transactions costs are not increased when firms are under Government control.

⁶⁵ In fact, institutional ownership can be associated with wider spreads and smaller quoted depth (Sarin et al., 1997). This is due to their large inventory carrying costs.

coefficient significant at the 1% level. Note that both ultimate ownership and ultimate control variables are highly correlated (0.8593) and that, as for Claessens et al. (2002), we adopt ultimate ownership as the control variable, its estimated coefficient being significant across all models in Table 2.

Recall our intent to examine the effect of the ownership-control deviation on the bid-ask spread. Accordingly, we control for the ratio of largest ultimate block of ownership over largest ultimate block of control (model 3). Claessens et al. (2002) argue that the ratio should be lower with longer chains of control⁶⁶, a situation in which find themselves the bottom corporations in pyramidal ownership structures. In the latter ultimate owners have many channels to orchestrate corporate behaviour and secure extra benefits, given that the many layers of equity holdings create a veil opaque enough for the ultimate owners to engage in such value appropriation, should they choose to do so. At the same time information asymmetry is worsened. Thus we expect a negative and significant relationship to exist between this ratio and the bid-ask spread. The wider the ownership-control deviation is, the more acute the asymmetry problems and the wider the spread. As can be seen in Panel A of Table 2 for model 3, the coefficient of UOWS/UCOS is significant and negative, as expected, since a lower ratio means a larger ownership-control deviation. Had we taken the inverse ratio (UCOS/UOWS), the sign would have been positive and significant.

⁶⁶ For example, a family owns 51 per cent of company A, which owns 51 per cent of company B, which owns 51 per cent of company C, which owns 50 per cent of company D. The family controls 50 per cent of D via the A-B-C chain (the smallest ownership along the chain) but its ownership stake is only 7 per cent (51 per cent of 51 per cent of 51 per cent of 50 per cent).

Table 2: The effects of ultimate ownership structures on stock liquidity (as measured by the bid-ask spread)

This table reports regression results explaining the bid-ask spread (BASP) and focusing on the marginal effect of control-ownership deviation variables. The full sample includes observations on 1121 corporations for the 1994-1996 period. We control for ultimate control stakes (UCOS), ultimate ownership stakes (UOWS) and the ratio of largest ultimate ownership over largest ultimate control (UOWS over UCOS). As robustness check, we proxy the deviation between ultimate control and ultimate ownership by three other variables. Namely, we consider a continuous variable measuring the difference between ultimate control and ultimate ownership (UCOS minus UOWS), a dummy variable equal to 1 when ultimate control is higher than ultimate ownership (Dummy for UCOS>UOWS) and 0 otherwise. Finally, we consider a dummy variable equal to 1 if ultimate control is higher than ultimate ownership and the deviation is higher than the mean deviation in corporations where the control and ownership differ, otherwise it is 0. Other explanatory variables are related to firm size (log(SIZE)), average of daily trading transactions (MDTR), average of daily closing prices (CLSP), and the variance of daily returns (RISK) as proxy for return volatility. The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients. NB: UNIT stands for uninformed trading measured by the product of trading volume over total share outstanding and uninformed holding (UNIH). The latter is measured by subtracting the five largest direct blocks of control from total holding, then dividing by total holding.

Model	Intercept	MDTR	CLSP	RISK	Log(SIZE)	UOWS	UNIT	UOWS over UCOS	UCOS minus UOWS	Dummy for (UCOS>UOWS)	Dummy for high (UCOS>UOWS)	N	Adj-R ²
Panel A: Whole sample													
(1)	3.2079 (0.0001)	-0.0042 (0.0001)	-0.017 (0.0044)	3.9149 (0.0045)	-0.1771 (0.0001)	0.0043 (0.0001)						619	0.6735
(2)	3.0880 (0.0001)	-0.0043 (0.0001)	-0.0179 (0.0044)	4.3549 (0.0027)	-0.1673 (0.0001)	0.0046 (0.0001)	8.4038E-7 (0.7296)					593	0.6753
(3)	3.4138 (0.0001)	-0.0040 (0.0001)	-0.0175 (0.0035)	3.9467 (0.0044)	-0.1841 (0.0001)	0.0050 (0.0001)		-0.1659 (0.0388)				619	0.6753
(4)	3.2737 (0.0001)	-0.0039 (0.0001)	-0.0175 (0.0028)	3.9786 (0.0041)	-0.1865 (0.0001)	0.0049 (0.0001)			0.0041 (0.0331)			619	0.6763
(5)	3.2840 (0.0001)	-0.0039 (0.0001)	-0.0172 (0.0039)	3.8624 (0.0054)	-0.1886 (0.0001)	0.0049 (0.0001)				0.1624 (0.0048)		619	0.6767
(6)	3.2734 (0.0001)	-0.0039 (0.0001)	-0.0172 (0.0037)	3.9845 (0.0045)	-0.1881 (0.0001)	0.0050 (0.0001)					0.1786 (0.0042)	619	0.6780
Panel B: Family controlled firms													
(1)	3.3996 (0.0001)	-0.0086 (0.0001)	-0.0136 (0.0422)	3.3700 (0.0287)	-0.1803 (0.0001)	0.0032 (0.0317)						343	0.6715
(2)	3.1993 (0.0001)	-0.0088 (0.0001)	-0.0136 (0.0393)	4.4779 (0.0242)	-0.1649 (0.0001)	0.0031 (0.0682)	-0.0002 (0.7951)					328	0.6712
(3)	3.5973 (0.0001)	-0.0083 (0.0001)	-0.0136 (0.0394)	3.5276 (0.0221)	-0.1908 (0.0001)	0.0044 (0.0095)		-0.1471 (0.1311)				343	0.6726
(4)	3.4554 (0.0001)	-0.0083 (0.0001)	-0.0136 (0.0370)	3.4470 (0.0629)	-0.1890 (0.0001)	0.0038 (0.0372)			0.0021 (0.2560)			343	0.6717
(5)	3.4872 (0.0001)	-0.0082 (0.0001)	-0.0134 (0.0417)	3.4731 (0.0645)	-0.1956 (0.0001)	0.0043 (0.0169)				0.1405 (0.0446)		343	0.6746
(6)	3.5004 (0.0001)	-0.0082 (0.0001)	-0.0134 (0.0411)	3.4492 (0.0674)	-0.1962 (0.0001)	0.0043 (0.0202)					0.1442 (0.0639)	343	0.6742
Panel C: Firms not controlled by a family													
(1)	2.6760 (0.0001)	-0.0030 (0.0001)	-0.0232 (0.0001)	5.5684 (0.0015)	-0.1416 (0.0001)	0.0052 (0.0001)						275	0.7046
(2)	2.6576 (0.0001)	-0.0030 (0.0001)	-0.0248 (0.0001)	5.0494 (0.0057)	-0.1378 (0.0001)	0.0057 (0.0001)	-0.0000 (0.1612)					264	0.7106
(3)	2.5967 (0.0001)	-0.0030 (0.0001)	-0.0232 (0.0001)	5.6145 (0.0014)	-0.1408 (0.0001)	0.0052 (0.0001)		0.0749 (0.5993)				275	0.7036
(4)	2.6852 (0.0001)	-0.0029 (0.0001)	-0.0230 (0.0001)	5.5551 (0.0016)	-0.1428 (0.0001)	0.0052 (0.0001)			0.0020 (0.6770)			275	0.7036
(5)	2.6888 (0.0001)	-0.0029 (0.0001)	-0.0230 (0.0001)	5.5028 (0.0019)	-0.1430 (0.0001)	0.0052 (0.0001)				0.0409 (0.6657)		275	0.7036
(6)	2.6768 (0.0001)	-0.0030 (0.0001)	-0.0232 (0.0001)	5.5605 (0.0017)	-0.1417 (0.0001)	0.00527 (0.0001)					0.0062 (0.9491)	275	0.7035

When we replace UCOS/UOWS by UCOS-UOWS or dummies for large deviations, as in models 4, 5 or 6, we still find the expected, positive and significant, coefficient for the control-ownership deviation. This means we have a robust relationship between said deviation and the spread. By inference, the longer the distance separating firms from ultimate owners the less liquid their stocks and the higher the asymmetric information costs.

In Panel B-Table 2, we show the regression results for the subset of family-controlled firms. Notwithstanding the lower significance of the deviation variable coefficients, results are qualitatively similar to those reported for the whole sample. Specifically, the bid-ask spread widens with more deviation between control and ownership. We infer that information asymmetry costs are associated with this deviation. This relationship is not even nearly apparent for the non-family subset as revealed in Panel C. Thus the deviation between control and ownership for non-family firms seems not to affect the spread. It looks as if the deviation effect on spreads tends to operate when families are in control. It seems then that the risk of opportunistic behavior at the expense of the minority shareholders, inasmuch it is reflected in the control-ownership deviation, is higher with family-controlled firms. In causal terms, this risk is apt to increase asymmetric information costs, the bid-ask spread and, finally, the firm cost of capital⁶⁷.

It is worth noting that families, in most countries, control large conglomerates through pyramidal holdings. For example, outside Canada, Toyota Motor, Samsung Electronics, Levi Strauss, Dupont, etc., are all controlled via pyramidal structures, and still have families as the main shareholders. In Canada, families with names like Bombardier, Bronfman, Desmarais, Irving, McCain, Molson, Péladeau, etc. all evoke enormous financial clout, and contribute to the fact that the Canadian stock market is much less liquid than the US market. It is proper then to examine, as we do below, the association between ultimate owner type and stock liquidity, and the means used by ultimate owners to enhance their control.

We document in Table 3 that the presence of an ultimate owner, as represented by dummy variable UOWN tends to add significantly to the bid-ask spread, which is not the case when the presence of a second ultimate owner (SUOW) is substituted for UOWN. These results obtained at both the 10 and 20% cut-off levels. Furthermore, when we substitute family-control (FAMC) to UOWN, we also witness a significant addition to the dependent

⁶⁷ Amihud and Mendelson (1986) argue that by increasing liquidity, firms reduce their cost of capital and increase their value.

liquidity variable. By contrast, we find that government control (GOVC) has a negative, significant effect at the 10% cut-off level only, whereas control by financial institutions (FINC) is not significant. This suggests financial institution control is not necessarily associated with lower asymmetry of information. Recall that Chiang and Venkatesh (1988) document that financial institutions are not regarded as informed traders, because they might hold a relatively small fraction of the firms' stocks (Demsetz, 1986), and thus, cannot efficiently spread the costs of information acquisition over their investment, especially if financial institutions are subject to regulatory or fiduciary constraints, like in Canada. Even when we control simultaneously for the three dummy variables related to family, financial institution and government control, the estimated coefficients do not change signs and significance levels.

Overall, our regression results above are consistent with those of our section 2. Next we investigate the channels and means by which ultimate owners enhance their control, including pyramidal holdings, multiple control chains, cross-holdings, multiple class shares, non-voting shares, and family-related management. Results are reported in Table 4. When we use a dummy variable (PYRA) to control for pyramidal affiliation we find it has a non significant coefficient. When we add FAMC to account for the presence of family control, we find it is significant whilst PYRA remains non significant. However, further addition of interaction variable $PYRA * FAMC$ yields positive significance for interaction, no significance for FAMC and negative significance for PYRA. The inference here is that family-dominated pyramids can be associated with increased asymmetry costs and bid-ask spread (or illiquidity). Supportive evidence comes from Gosnell et al. (1992), who show that insiders use monopolistic information to generate abnormal returns from trading in their own firm's shares^{68,69}.

⁶⁸ Gosnell et al (1992) also show that insiders get rid of their stakes in the two-year two-year period prior to a bankruptcy announcement.

⁶⁹ The interactions between family control and the dummy variables for multiple control chains, cross holdings, multiple class shares, and non-voting shares are not significant.

Table 3: The effects of the ultimate ownership type on stock liquidity (as measured by the bid-ask spread)

This Table reports regression results explaining the bid-ask spread (BASP) and focusing on the marginal effect of control type variables. The full sample includes observations on 1121 Canadian corporations for the 1994-1996 period. We control for type of the ultimate owner. We use dummy variables to distinguish widely-held firms (WHEF), family-controlled firms (FAMC), financial institution controlled firms (FINC), government controlled firms (GOVC), the firms that have an ultimate owner (UOWN), and those that have a second ultimate owner (SUOW). All the dummy variables are considered at two cut-off levels: 10 and 20%. The other variables include: ultimate control stakes (UCOS), ultimate ownership stakes (UOWS), firm size (log(SIZE)), average of daily trading transactions (MDTR), average of daily closing price (CLSP), and the variance of daily returns (RISK) as proxy for return volatility. The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

Model	Intercept	MDTR	CLSP	RISK	Log(SIZE)	UOWS	UOWN	SUOW	FAMC	FINC	GOVC	N	Adj-R ²
10% cut-off													
(1a)	3.2202 (0.0001)	-0.0044 (0.0001)	-0.0178 (0.0033)	3.5350 (0.0098)	-0.1745 (0.0001)		0.1016 (0.0560)					619	0.6644
(2a)	3.2647 (0.0001)	-0.0045 (0.0001)	-0.0176 (0.0036)	3.6600 (0.0069)	-0.1729 (0.0001)			0.0520 (0.2691)				619	0.6739
(3a)	3.1798 (0.0001)	-0.0044 (0.0001)	-0.0175 (0.0030)	3.7918 (0.0056)	-0.1709 (0.0001)				0.1309 (0.0041)			619	0.6671
(4a)	3.2800 (0.0001)	-0.0046 (0.0001)	-0.0177 (0.0034)	3.7441 (0.0056)	-0.1724 (0.0001)					-0.0204 (0.7340)		619	0.6627
(5a)	3.2658 (0.0001)	-0.0046 (0.0001)	-0.0177 (0.0033)	3.7868 (0.0053)	-0.1710 (0.0001)						-0.02086 (0.0286)	619	0.6640
(6a)	3.1645 (0.0001)	-0.0044 (0.0001)	-0.0176 (0.0028)	3.8745 (0.0046)	-0.1688 (0.0001)				0.1279 (0.0053)	-0.0208 (0.7316)	-0.1888 (0.0410)	619	0.6672
(7a)	3.093 (0.0001)	-0.0041 (0.0001)	-0.0174 (0.0036)	4.0748 (0.0034)	-0.1730 (0.0001)	0.0043 (0.0001)			0.1278 (0.0047)	-0.0299 (0.6085)	-0.1759 (0.0543)	619	0.6774
20% cut-off													
(1b)	3.2545 (0.0001)	-0.0042 (0.0001)	-0.0174 (0.0033)	3.7092 (0.0071)	-0.1789 (0.0001)		0.1417 (0.0036)					619	0.6675
(2b)	3.2831 (0.0001)	-0.0045 (0.0001)	-0.0175 (0.0037)	3.6203 (0.0076)	-0.1740 (0.0001)			0.0779 (0.1981)				619	0.6637
(3b)	3.2382 (0.0001)	-0.0043 (0.0001)	-0.0173 (0.0031)	3.9526 (0.0048)	-0.1754 (0.0001)				0.1439 (0.0034)			619	0.6679
(4b)	3.2805 (0.0001)	-0.0046 (0.0001)	-0.0177 (0.0036)	3.6567 (0.0068)	-0.1734 (0.0001)					0.1047 (0.1588)		619	0.6637
(5b)	3.2768 (0.0001)	-0.0046 (0.0001)	-0.0177 (0.0035)	3.7550 (0.0054)	-0.1723 (0.0001)						-0.0974 (0.6479)	619	0.6627
(6b)	3.2307 (0.0001)	-0.0043 (0.0001)	-0.0174 (0.0033)	3.9124 (0.0048)	-0.1757 (0.0001)				0.1475 (0.0030)	0.1210 (0.1025)	-0.0775 (0.7077)	619	0.6683
(7b)	3.1801 (0.0001)	-0.0041 (0.0001)	-0.0174 (0.0043)	4.0460 (0.0040)	-0.1782 (0.0001)	0.0037 (0.0003)			0.1059 (0.0045)	0.0827 (0.2717)	-0.1068 (0.6199)	619	0.6752

Table 4: The effects of means of enhancing control on stock liquidity (as measured by the bid-ask spread)

This Table reports regression results about the effects of means of enhancing control on the bid-ask spread (BASP). The full sample includes observations on 1121 Canadian corporations for the 1994-1996 period. We control for ultimate control stakes (UCOS), ultimate ownership stakes (UOWS), and channels which influence the control-ownership deviation: we use dummy variables to distinguish pyramidal holdings (PYRA), multiple control chains (MUCC), cross-holdings (CHOL), multiple class shares (MCLS), non-voting shares (NVOS), family-related management (MFCF) with control beyond 10 or 20%, and the minimum required capital to control 20% of votes (MROV). Other explanatory variables are related to firm size (log(SIZE)), average of daily trading transactions (MDTR), average of daily closing prices (CLSP), and the variance of daily returns (RISK) as proxy for return volatility. The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

Model	Intercept	MDTR	CLSP	RISK	Log(SIZE)	UOWS	PYRA	FAMC	PYRA* FAMC	CHOL	MUCC	MCLS	NVOS	MROV	MFCF (at 10%)	MFCF (at 20%)	N	Adj-R ²
(1)	3.2055 (0.0001)	-0.0042 (0.0001)	-0.0175 (0.0047)	3.9237 (0.0041)	-0.1755 (0.0001)	0.0048 (0.0001)	-0.0449 (0.3356)										619	0.6734
(2)	3.0988 (0.0001)	-0.0041 (0.0001)	-0.0174 (0.0041)	3.9995 (0.0037)	-0.1732 (0.0001)	0.0045 (0.0001)	-0.0566 (0.2137)	0.1350 (0.0023)									619	0.6776
(3)	3.1785 (0.0001)	-0.0041 (0.0001)	-0.0172 (0.0040)	3.9289 (0.0044)	-0.1775 (0.0001)	0.0051 (0.0001)	-0.1998 (0.0080)	0.05101 (0.3648)	0.2400 (0.0128)								619	0.6802
(4)	3.2988 (0.0001)	-0.0045 (0.0001)	-0.0180 (0.0011)	3.6150 (0.0060)	-0.1743 (0.0001)					0.2511 (0.1133)							619	0.66640
(5)	3.2263 (0.0001)	-0.0041 (0.0001)	-0.0179 (0.0015)	3.8091 (0.0044)	-0.1786 (0.0001)	0.0043 (0.0001)				0.2525 (0.1057)							619	0.6744
(6)	3.2840 (0.0001)	-0.0046 (0.0001)	-0.0177 (0.0034)	3.7239 (0.0060)	-0.1731 (0.0001)						0.0159 (0.8463)						619	0.6627
(7)	3.2062 (0.0001)	-0.0042 (0.0001)	-0.0175 (0.0044)	3.9105 (0.0046)	-0.1766 (0.0001)	0.0044 (0.0001)					-0.0275 (0.7333)						619	0.6730
(8)	3.3138 (0.0001)	-0.0045 (0.0001)	-0.0176 (0.0030)	3.8534 (0.0051)	-0.1775 (0.0001)							0.0988 (0.1014)					619	0.6641
(9)	3.2298 (0.0001)	-0.0041 (0.0001)	-0.0175 (0.0041)	3.9824 (0.0043)	-0.1795 (0.0001)	0.0042 (0.0001)						0.0551 (0.3601)					619	0.6734
(10)	3.2968 (0.0001)	-0.0045 (0.0001)	-0.0176 (0.0035)	3.7835 (0.0056)	-0.1749 (0.0001)								0.1118 (0.2269)				619	0.6634
(11)	3.2272 (0.0001)	-0.0041 (0.0001)	-0.0175 (0.0046)	4.0131 (0.0039)	-0.1802 (0.0001)	0.0045 (0.0001)							0.1592 (0.0823)				619	0.6746
(12)	3.4692 (0.0001)	-0.0044 (0.0001)	-0.0178 (0.0024)	3.8112 (0.0053)	-0.1770 (0.0001)								-0.7824 (0.1015)				619	0.6641
(13)	3.4705 (0.0001)	-0.0040 (0.0001)	-0.0177 (0.0028)	4.0592 (0.0035)	-0.1833 (0.0001)	0.0047 (0.0001)							-1.1154 (0.0189)				619	0.6759
(14)	3.2132 (0.0001)	-0.0044 (0.0001)	-0.0179 (0.0029)	3.8045 (0.0057)	-0.1716 (0.0001)									0.1082 (0.0145)			619	0.6657
(15)	3.1729 (0.0001)	-0.0041 (0.0001)	-0.0177 (0.0039)	3.9520 (0.0045)	-0.1760 (0.0001)	0.0040 (0.0001)								0.0658 (0.1371)			619	0.6740
(16)	3.2530 (0.0001)	-0.0044 (0.0001)	-0.0176 (0.0030)	3.8485 (0.0056)	-0.1745 (0.0001)										0.1108 (0.0180)		619	0.6657
(17)	3.2001 (0.0001)	-0.0041 (0.0001)	-0.0175 (0.0040)	3.9660 (0.0046)	-0.1776 (0.0001)	0.0040 (0.0001)									0.0568 (0.2336)		619	0.6737

When the (always significant) ultimate ownership variable (UOWS) is replaced in the regression by any one of the control-enhancing variables (CHOL, MUCC...), only the family-related management variable (MFCF) turns out to be (positively) significant. The MFCF result is expected given that Canadian families are often ultimate owners of firms and present in their top management. The lack of significance of the other control-enhancing variables may just indicate that, taken individually, they don't suffice to reveal the importance of ultimate ownership in the firm, and thus lack explanatory power with respect to the bid-ask spread. When the control-enhancing variables are added at a time on top of the UOWS variable, they don't significantly affect the spread, except again for MFCF variable in a positive way, but also for the "minimum to control 20%" variable (MROV) in a negative way. This tells us that they are both compounding the effect of UOWS on the spread. All else being equal, with a family at the helm, as both owner and manager, asymmetry costs (and appropriation potential) increase and so does the spread, hence the positive sign. With a lower MROV, given the same level of UOS, the spread increases (hence a negative sign), presumably because the ownership structure thickens which in turn increases both the appropriation potential and asymmetry costs.

Overall, our results show that the (ultimate) ownership structures, pyramids especially, affect the bid-ask spread. Particularly, we find that the presence of a family, at the helm as both top owner and manager, increases the spread, the interpretation being that the situation entails more asymmetric information and more appropriation behaviour at the expense of shareholders in affiliated firms.

3.3. Robustness check

To test the robustness of our results we examine the effect of uninformed trading, the eventual simultaneous relationship and other measures of asymmetric information. Results are discussed in the following paragraphs.

3.3.1. An analysis of uninformed trading

We associate above the presence of a family as ultimate owner with increased asymmetric costs and larger bid-ask spreads. However, according Easley et al. (1996), high volume stocks, higher frequency of information events and higher intensity of informed trading go together but that the latter is more than neutralized in its effect by uninformed

trading. In contrast, less active stocks are more likely the domain of informed traders and expected to display wider spreads. As for our own evidence, it may just reflect the more concentrated ownership of sampled firms and the reduced uninformed trading that goes with it. Therefore the larger spreads we observe may relate more to uninformed trading than to information asymmetry.

Since we do not dispose of trading records for uninformed traders or ultimate owners, we make do with a proxy for uninformed trading (UNIT) by proceeding thus: (1) we measure “uninformed holding” (UNIH) by the ratio of minority interests (= Total holdings minus the five largest directly-owned blocks over total holdings, a ratio akin to a float measure); and (2) we multiply UNIH by the ratio of trading volume over total shares outstanding. Note that behind the UNIT variable the implicit assumption is made that trading is in proportion to the ratio of holdings¹.

As shown in Table 5, the bid-ask spread is negatively related to uninformed holdings (UNIH). The estimated coefficient is significant for the whole sample and its two sub-samples. Inasmuch that UNIH is a proxy for the number of uninformed traders, then the evidence accords with that of Easley et al. (1996): with more uninformed traders, market-makers set lower spreads and stock liquidity increases². However, contrary to expectations the results for UNIT (compared to UNIH) are dissimilar. The coefficients are nowhere significant³. This evidence is inconsistent with that of Easley et al. (1996). The indication is that our previous results are robust and are not statistical artifacts driven by uninformed holdings or trading.

¹ This strong assumption should bias our results for UNIT towards finding results similar to those found for UNIH.

² This result is not surprising in that the uninformed holding variable is highly correlated with the ultimate ownership variable but with opposite sign as shown in Table VI.

³ Similarly, the result for family trading variable (not reported) is also insignificant across different models. Besides, when we consider the mean ratio of quote changes over quotes (QCOQ: a proxy for information trading, but with an opposite sign) we find a consistent negative and significant effect of QCOQ on the bid-ask spreads. That is, larger bid-ask spreads result when there is an increase of informed trading.

Table 5: The effects of ultimate ownership structure on stock liquidity

This Table reports regression results linking uninformed trading to the bid-ask spread (BASP). The full sample includes observations on 1121 Canadian corporations for the 1994-1996 period. We control for ultimate ownership stakes (UOWS), the firm size (log(SIZE)), average of daily trading transactions (MDTR), average of daily closing prices (CLSP), and the variance of daily returns (RISK) as proxy for return volatility. UNIH stands for uninformed holding, and UNIT for uninformed trading. The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

Model	Intercept	MDTR	CLSP	RISK	Log(SIZE)	UOWS	UNIH	UNIT	N	Adj-R ²
Panel A: Whole sample										
(1)	3.5879 (0.0001)	-0.0040 (0.0001)	-0.0179 (0.0027)	4.1229 (0.0029)	-0.1797 (0.0001)		-0.0041 (0.0001)		618	0.6754
(2)	3.1502 (0.0001)	-0.0047 (0.0001)	-0.0181 (0.0033)	4.1773 (0.0032)	-0.1615 (0.0001)			7.6088E-7 (0.7656)	593	0.6636
(3)	3.0880 (0.0001)	-0.0043 (0.0001)	-0.0179 (0.0044)	4.3549 (0.0027)	-0.1673 (0.0001)	0.0046 (0.0001)		8.4038E-7 (0.7296)	593	0.6753
(4)	3.5464 (0.0001)	-0.0040 (0.0001)	-0.0180 (0.0029)	4.4300 (0.0022)	-0.1760 (0.0001)		-0.0042 (0.0001)	0.0000 (0.6414)	593	0.6801
Panel B: Family controlled sample										
(1)	3.7817 (0.0001)	-0.0081 (0.0001)	-0.0138 (0.0373)	3.7566 (0.0420)	-0.1926 (0.0001)		-0.0034 (0.0027)		341	0.6761
(2)	3.3033 (0.0001)	-0.0089 (0.0001)	-0.0139 (0.0348)	4.1908 (0.0289)	-0.1657 (0.0001)			-0.0004 (0.5968)	328	0.6681
(3)	3.1993 (0.0001)	-0.0088 (0.0001)	-0.0136 (0.0393)	4.4779 (0.0242)	-0.1649 (0.0001)	0.0031 (0.0682)		-0.0002 (0.7951)	328	0.6712
(4)	3.6633 (0.0001)	-0.0083 (0.0001)	-0.0137 (0.0358)	4.7744 (0.0180)	-0.1827 (0.0001)		-0.0038 (0.0015)	0.0001 (0.8233)	328	0.6778
Panel C: Non-family controlled sample										
(1)	2.9851 (0.0001)	-0.0031 (0.0001)	-0.0242 (0.0001)	5.3344 (0.0042)	-0.1316 (0.0001)		-0.0039 (0.0001)		276	0.6946
(2)	2.6255 (0.0001)	-0.0036 (0.0001)	-0.0244 (0.0001)	5.2806 (0.0043)	-0.1224 (0.0001)			-0.0000 (0.2506)	264	0.6869
(3)	2.6576 (0.0001)	-0.0030 (0.0001)	-0.0248 (0.0001)	5.0494 (0.0057)	-0.1378 (0.0001)	0.0057 (0.0001)		-0.0000 (0.1612)	264	0.7106
(4)	3.0704 (0.0001)	-0.0031 (0.0001)	-0.0248 (0.0001)	4.6639 (0.0151)	-0.1366 (0.0001)		-0.0040 (0.0001)	-0.0000 (0.7468)	264	0.7031

3.3.2. Simultaneous equations analysis

We documented above that the ownership-control deviation affects the bid-ask spread. It remains to show how both ultimate ownership and ultimate control individually affect the spread. We must be aware here that in his quest for more control the ultimate owner may select less liquid stocks so as to avoid being monitored by outside investors. The empirical investigation should be structured, then, to avoid misleading inferences of causality such as could happen should one consider stock liquidity and ultimate ownership stakes as being strictly exogenously determined. Indeed, it is fitting that we also examine the positive endogeneity between stock liquidity, ultimate ownership, ultimate control and control-ownership deviation as measured by UCOS minus UOWS⁴. To address these concerns, we use two-stage least squares methods so as to obtain unbiased and consistent estimators. Results are presented in Table 6.

⁴ Results are similar when we use other measures of deviation of ownership from control.

From our simultaneous (BASP or UOWS) analysis, we find that spread positively and significantly affects UOWS but not the other way around when the usual determinants are included. This indicates that: (1) the ultimate owner tends to increase his block of cash rights through less liquid stocks; and (2) asymmetry costs do not necessarily increase if ultimate ownership does. Another noteworthy result comes from the negative sign and lack of significance of FAMC. This suggests that our earlier (Table 4) finding that spread is larger for family controlled firms has no clear link to the ultimate ownership variable.

Table 6: Two-stage least square (2SLS) analysis of ownership structure and bid-ask spread (BASP)

Estimates are obtained for the simultaneous equations system between the largest ultimate ownership (UOWS) and (BASP), the largest ultimate control (UCOS) and (BASP), and the control-ownership deviation (UCOS minus UOWS) and (BASP). The full sample includes observations on 1121 Canadian corporations for the 1994-1996 period. The P-value of the t-statistics is between parentheses. The explanatory variables are firm size (log(SIZE)), pyramidal holding (PYRA), family control (FAMC), average of daily trading transactions (MDTR), average of daily closing prices (CLSP), and variance of daily returns (RISK) as proxy for return volatility.

	2SLS analysis of the UOWS and BASP equations		2SLS analysis of the UCOS and BASP equations		2SLS analysis of the difference (UCOS minus UOWS) and BASP equations	
	UOWS	BASP	UCOS	BASP	UCOS minus UOWS	BASP
Intercept	-26.2917 (0.1168)	3.6393 (0.0001)	-68.488 (0.0001)	3.6547 (0.0001)	-42.1963 (0.0001)	3.9261 (0.0001)
UOWS		0.0034 (0.5143)				
UCOS				0.0070 (0.0421)		
UCOS minus UOWS						0.0153 (0.0148)
BASP	10.6990 (0.0005)		15.5884 (0.0001)		4.8894 (0.0060)	
MDTR		-0.0041 (0.0001)		-0.0034 (0.0001)		-0.0038 (0.0001)
CLSP		-0.0226 (0.0001)		-0.0220 (0.0001)		-0.0217 (0.0001)
RISK		1.3855 (0.3217)		2.0482 (0.1426)		1.7214 (0.2362)
Log(SIZE)	3.1713 (0.0093)	-0.2050 (0.0001)	6.4532 (0.0001)	-0.2204 (0.0001)	3.2819 (0.0001)	-0.2319 (0.0001)
FAMC	-0.9453 (0.6784)		6.3408 (0.0090)		7.2861 (0.0001)	
PYRA	9.2441 (0.0001)		10.8408 (0.0001)		1.5966 (0.2361)	
Adj-R ²	0.1050	0.7459	0.1510	0.7431	0.1041	0.6940

From our simultaneous (BASP or UCOS) analysis, we find that both control (UCOS) and spread (BASP) are significantly interrelated. Implicitly then, asymmetry costs should increase with more ultimate control and stock liquidity decline. This finding corroborates the theoretical work of Maug (1998). In addition, when UCOS is explained, FAMC and PYRA have significant and positive coefficients. We might infer from this that dominating families in Canada are more concerned with corporate control than with cash flow rights. This

apparent behavior is compatible with the view that families would be prone to extract wealth from pyramidal affiliates in ways fitting their changing personal utility.

Also, these results likely indicate that the positive effect of family control on the bid-ask spread may well be driven by the asymmetry information costs associated with the ultimate control. Allegedly, the latter determines the control-ownership deviation, which in turn affects the spread.

Some light on this issue comes from our simultaneous (BASP or deviation) analysis. The rightmost results in Table 6 reveal that said deviation has a significantly positive influence on the spread, and vice-versa. More importantly, this deviation variable incorporates the effect of pyramidal structures (no more significant as before). This evidence adds to our previous findings that the control-ownership deviation is a matter of layers in the pyramidal structures. However, the deviation variable fully subsumes all information contained in the pyramids.

To sum up, we contend our findings provide some basis to argue that the bid-ask spread reflects the asymmetric information costs contained in the ultimate control, rather than ownership, variable. As a result, the control-ownership deviation likely captures the effect of ultimate control and further affects the spread. Moreover, the likelihood is that corporate affiliates with less liquid stocks create a convenient veil for the ultimate owner should he seek to avoid outside monitoring and engage in appropriating behavior.

3.3.3. Other measures of asymmetric information

Our previous results are reported for daily quoted spread that is observed at the end of every day, but daily market close is usually affected by inventory problem of market makers and traders. That is why we use three alternative measures of asymmetric information (stock liquidity) to further test for the robustness of our findings. These include the average dollar spread (AVDS), the average bid-ask spread (AVBA) and the *adverse selection cost* calculated using the Glosten-Harris model (ADSC-GH). To measure these variables we use the intraday quotes and prices (with a 6-second interval) during the first quarter⁵ of 1996. In particular, we use the Glosten-Harris model (1988) (GH, hereafter) to decompose the bid-ask spread and extract the adverse selection component (ADSC-GH), which is the component of the

⁵ We also used the data for the last quarter of 1996, results are qualitatively and quantitatively comparable to those reported for the first quarter.

transaction costs related to asymmetric information. More precisely, we define X_t the trade direction where $X_t = +1$ if the trade in t is a buy and $X_t = -1$ if it is a sell. Denoting the prevailing ask and bid quotes in as A_t and B_t , the midquote price is $m_t = \frac{[A_t + B_t]}{2}$ and the half-effective spread is $s_t = \frac{[A_t - B_t]}{2}$. V_t denotes the transaction volume in number of shares.

The cost components are ϕ and θ , which denote order processing costs and adverse selection costs. The GH model assumes a linear price impact of trading volume and a fixed cost of executing a trade. According to our notations, the price change relates to the transaction volume and cost as follows: $\Delta p_t = \theta X_t V_t + \phi [s_t - s_{t-1}] + \varepsilon_t$, where ε_t is the i.i.d. residual. We report results of the second component of transaction cost: θ , which compensates the liquidity provider for the risk of transacting against a trader with superior information and has a permanent impact on the asset price (GH). In Table 7 we report results for cross-section regressions using these three different measures of asymmetric information.

We first examine the effect of the type of ultimate owner on the, we find that family control is associated with higher asymmetric costs than government and financial institution control. Our results here are comparable to those reported in Table 4. More importantly, we document that the deviation between ownership and control, as measured by ultimate control minus ultimate ownership, bears negatively on the three different measures of asymmetric information. Particularly, the estimated coefficient of UCOS minus UOWS has a positive and significant effect on the adverse selection component of the bid-ask spread (*ADSC-GH*). Similarly, the use of means of enhancing control (e.g. multiple class shares) depresses stock liquidity. In fact, we report that the minimum required ownership to control 20% of voting power has a negative effect on the three measures of asymmetric information. Finally, we examine the effect pyramidal holding, and document a positive (negative) effect of pyramidal affiliation on stock liquidity (dependent variables). Conversely, when we include the interaction effect between family control and pyramidal affiliation (*PYRA*FAMC*) we document a positive and significant estimated coefficient. This result might be interpreted as consistent with our argument that family dynasties, at the apex of pyramidal holding, are associated with increased asymmetry costs and bid-ask spread (or illiquidity), may be because these families tend to make pervasive use of opportunistic practices aimed extracting undue rents. Overall, results in Table 7 are qualitatively and quantitatively consistent with our previous reported result when we used the quoted daily bid-ask spread.

Table 7: Robustness Check

This Table reports regression results explaining three alternative measures of asymmetric information: the average dollar spread (AVDS), the average bid-ask spread (AVBA) and the adverse selection cost calculated using the Glosten-Harris model (ADSC-*GH*). To measure these variables we use the intraday quotes and prices (with a 6-second interval) during the first quarter of 1996. The full sample includes observations on 1121 Canadian corporations for the 1994-1996 period. We first test the effect of the type of the ultimate owner. We use dummy variables to distinguish widely-held firms (WHEF), family-controlled firms (FAMC), financial institution controlled firms (FINC), and government controlled firms (GOVC). We then control for the ultimate ownership stakes (UOWS), the separation between ownership and control (e.g., ultimate control minus ultimate ownership: UCOS minus UOWS), the effect of pyramidal affiliation (PYRA). We include also the commonly used variables: firm size (log(SIZE)), average of daily trading transactions (MDTR), average of daily closing price (CLSP), and the variance of daily returns (RISK) as proxy for return volatility. The P-value of the *heteroscedasticity-consistent* t-statistics is between parentheses below the estimated coefficients.

	Family Control			Government Control			Widely held financial Institution		
	AVDS	AVBA	ADSC- <i>GH</i>	AVDS	AVBA	ADSC- <i>GH</i>	AVDS	AVBA	ADSC- <i>GH</i>
Intercept	-2.0731 (0.0001)	-1.6828 (0.0001)	0.0146 (0.6183)	-2.0815 (0.0001)	-1.6742 (0.0001)	0.0099 (0.7381)	-2.0715 (0.0001)	-1.6706 (0.0001)	0.0192 (0.5117)
MDTR	-0.0037 (0.0001)	-0.0026 (0.0001)	-0.001 (0.0422)	-0.0039 (0.0001)	-0.0028 (0.0001)	-0.0001 (0.0340)	-0.0039 (0.0001)	-0.0028 (0.0001)	-0.0001 (0.0310)
CLSP	0.0230 (0.0001)	-0.0139 (0.0001)	0.0008 (0.0083)	0.0227 (0.0001)	-0.0142 (0.0001)	0.0008 (0.0046)	0.0227 (0.0001)	-0.0143 (0.0001)	0.0007 (0.0090)
RISK	-16.140 (0.0001)	5.5165 (0.0001)	0.4653 (0.3067)	-16.174 (0.0001)	5.4028 (0.0001)	0.4751 (0.2854)	-16.1606 (0.0001)	5.2651 (0.0001)	0.4248 (0.3257)
Log(SIZE)	0.0230 (0.3043)	-0.1579 (0.0001)	-0.0007 (0.8216)	0.02951 (0.1795)	-0.1531 (0.0001)	-0.0003 (0.9148)	0.0287 (0.2014)	-0.1547 (0.0001)	-0.0008 (0.7881)
FAMC	0.1180 (0.0717)	0.1266 (0.0086)	0.00009 (0.9860)						
GOVC				-0.2636 (0.0310)	-0.0618 (0.5451)	-0.0139 (0.2240)			
FINC							-0.0628 (0.4749)	0.1514 (0.0747)	-0.0086 (0.1666)
Adj-R-Square	0.4339	0.6685	0.1613	0.4328	0.6634	0.1727	0.4306	0.6665	0.1805

Table 7: Robustness Check (continued)

	Effect of the deviation between control and ownership			Effect of means of enhancing control					
	AVDS	AVBA	ADSC- GH	AVDS	AVBA	ADSC- GH	AVDS	AVBA	ADSC- GH
Intercept	-2.0372 (0.0001)	-1.6137 (0.0001)	0.0188 (0.4979)	-1.7874 (0.0001)	-1.4456 (0.0001)	0.0234 (0.4366)	-2.0514 (0.0001)	-1.6732 (0.0001)	0.0147 (0.5827)
MDTR	-0.0033 (0.0001)	-0.0022 (0.0001)	-0.0009 (0.0124)	-0.0033 (0.0001)	-0.0024 (0.0001)	- (0.00009 (0.0106)	-0.0035 (0.0001)	-0.0025 (0.0001)	-0.0001 (0.0087)
CLSP	0.0226 (0.0001)	-0.0142 (0.0112)	0.0007 (0.0016)	0.0226 (0.0001)	-0.0142 (0.0001)	0.0007 (0.0023)	0.0225 (0.0001)	-0.0141 (0.0165)	0.0007 (0.0031)
RISK	-16.459 (0.0001)	5.3032 (0.0002)	0.3871 (0.1378)	-16.2377 (0.0001)	5.4352 (0.0001)	0.3823 (0.2537)	-16.550 (0.0001)	5.1610 (0.0002)	0.3135 (0.2909)
Log(SIZE)	0.0117 (0.6144)	-0.1702 (0.0001)	-0.0019 (0.3723)	0.0129 (0.5680)	-0.1642 (0.0001)	-0.0017 (0.4761)	0.0200 (0.3628)	-0.1613 (0.0001)	-0.0015 (0.6448)
UOWS	0.0051 (0.0008)	0.0039 (0.0001)	0.0004 (0.1223)	0.0050 (0.0010)	0.0035 (0.0005)	0.0004 (0.1312)	0.0046 (0.0025)	0.0035 (0.0009)	0.0004 (0.0896)
UCOS	0.0035	0.0050	0.0001						
minus	(0.0997)	(0.0068)	(0.0524)						
UOWS									
MROV				-1.3288 (0.0202)	-1.0705 (0.0429)	-0.0297 (0.2260)			
PYRA							-0.1692 (0.0318)	-0.0743 (0.1715)	-0.0224 (0.0433)
PYRA*							0.1459 (0.1602)	0.1475 (0.0512)	0.0144 (0.1229)
FAMC									
Adj-R ²	0.4435	0.6762	0.2604	0.4453	0.6727	0.2560	0.4446	0.6710	0.3050

4. Conclusion

We raised the issue of how corporate governance and dominance affect stock liquidity as measured by the bid-ask spread. According to our univariate and multivariate analyses, we documented that ultimate ownership (beyond 10 or 20%) generally signifies larger bid-ask spreads, and lower liquidity, especially when a family is in control. We find that the presence of a family, at the helm as both top owner and manager, increases the bid-ask spread, the plausible interpretation being that the situation entails more asymmetric information and possibly more dilution of minority interests. Our robustness tests indicate that our previous results are robust and not statistical artifacts driven by uninformed holdings or trading. Our simultaneous analysis shows that the positive effect of family control on the bid-ask spread is likely driven by the asymmetry information costs associated with ultimate control variable. Our findings provide some basis to argue that the bid-ask spread reflects the asymmetric

information costs contained in the ultimate control, rather than ownership, variable. As a result, the control-ownership deviation likely captures the effect of ultimate control and further affects the bid-ask spread.

The evidence reported here is important for many reasons. Firstly, it provides additional insight into the determinants of the firm's cost of capital. Secondly, our findings should suggest a future research agenda for empirical and theoretical finance. Finally, and more generally, our findings may be of use for regulators and law-setters (enhancing corporate governance effectiveness and market efficiency, reducing externalities, etc.).

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CONCLUSION

The separation of ownership from control confronts all large corporations with agency problems. In Canada, agency problems are between controlling owners and minority shareholders, since widely-held corporations are more the exception than the rule and the predominant ownership structure is family-controlled, with top management positions in hands of kins. Thus, in a first essay, we have traced out some characteristics of Canadian ultimate ownership structure and compared them with the ultimate ownership structures of “sister” Anglo/Saxon countries (i.e., U.S and U.K).

Our findings reveal that, in Canada, ownership is concentrated and one is likely to observe in Canadian firms an ultimate owner who seems to engage in expropriation behavior. As a matter of fact, we report, in the first essay, that controlling shareholders of Canadian companies use, frequently, pyramids, cross holding, reciprocal holding, appointment of related members to top-management positions, and use multiple class voting shares to gain control. Our results indicate also that despite the similarities in institutional indexes between Canada and the other Anglo-Saxon countries (e.g. UK and US), the Canadian corporate structure has very different patterns from those in the UK and the US. To solve this puzzling question we contrast ownership structure of firms headquartered in Quebec and those headquartered in the rest of Canada. We document that ownership and control concentration, use of means of enhancing control are more pronounced in Quebec than in the rest of Canada. Since politics and law about exhaust the sources of credible exogenous explanations for corporate structure and conduct, Canada would seem to illustrate some form of “path dependence” whereby first initial conditions of law, regulation or politics, not captured in the broad measures deployed so far by researchers, would explain the puzzle of the Canada’s very different corporate conduct (Bebchuck and Roe (1999)).

In the second essay, we raised the issue of corporate governance in pyramidal ownership and the opaque veil that surrounds their complex structures and operations of equity holdings. Our results suggest that it is barely feasible and more than costly to pierce the veil to an extent sufficient to monitor with some success the opportunistic, rent-seeking behavior of the ultimate owners, mostly families, or coalitions of families. Our results also support the hypothesis that ultimate owners prefer funding separate projects, conceivably because thus they maximize the value of the default options inherent in their limited liability vis-à-vis the controlled firms. Our results suggest that pyramidal ownership provides an

internal capital market, which benefits ultimate owners when faced by unfavorable external markets. These features should decrease investor confidence in financial markets. Especially, because the influential role of the controlling shareholders generates information asymmetry, caused by their incentives to obtain the necessary information to effectively control corporate policies that reduces the liquidity of the equity markets.

In the third essay we raised the issue of corporate governance in the context of market microstructure. According to our univariate and multivariate analysis, we documented that the deviation of ownership from control increases the information asymmetry, by increasing the bid-ask spread. Moreover, family ownership and the means of enhancing control significantly affect the bid-ask spread. The upshot is that the risk of opportunistic behavior positively affects the bid-ask spread and hence increases the asymmetry and agency costs. For instance, ultimate control concentration and the separation between voting power and corporate ownership should decrease both investor confidence in financial markets and the economic growth. Maintaining an undamaged reputation should help the controlling shareholders to easily access needed capital, and eventually, adjust their optimal portfolios.

The evidence reported in the text is important for many reasons. Firstly, Canada, despite its common law and Anglo-Saxon heritage and ‘excellent’ investor protection and law enforcement, displays concentrated corporate ownership with predominant use of mechanisms allowing ultimate owners to enhance their control. Canadian ownership structure seems to illustrate path dependence, whereby first initial conditions of law, regulation or politics, not captured in the broad measures deployed so far by researchers, would explain the puzzle of the Canada’s very different corporate conduct.

Secondly, the effective governance of pyramidal ownership requires the costly monitoring of the key actors in the pyramids, starting with ultimate owners. This might be done by committing to a complete disclosure policy, adding outsiders to the board, imposing one-share-one-vote rules and sanctions against insider trading and market manipulations. However, more research is needed before the problem of governance within pyramidal structures can be tackled effectively. On the ethical front, future research efforts might be well spent on how political connection and corruption influence the corporate marketplace. (Canada has many prominent politicians in such delicate situations. Unfortunately, those questions have been woefully neglected).

Thirdly, the results of our third essay provide additional insight into the determinants of firm's costs of capital, and should suggest a future research agenda for empirical and theoretical finance, to address, in greater depth, the question of corporate ownership, and its separation from control and their effect on market microstructure. More generally, our findings should improve market microstructure, regulation and investment management by the knowledge of factors that influence liquidity and trading activity. A better understanding of these determinants should increase investor confidence in financial markets, and thereby reduce the risks of being expropriated by the controlling shareholders (e.g. enhancing the efficacy of corporate policies) and lower the firm's cost of capital.

Overall, recent public disclosures of governance fraud cases, in U.S. and Canada, had (still has) an important impact on capital markets. Standard setters and regulators, more than ever before, feel pressed to impose tougher governance rules that may circumvent ultimate owners' ability to engage in expropriation activities. We submit that the evidence gathered in this thesis might be useful to regulators and law-setters, at various levels, including disclosure rules in accounting standards and corporate law enforcement, in order to assure and improve the efficiency of the Canadian stock market (enhancing corporate governance effectiveness and market efficiency, reducing externalities, etc.). Market regulation, however, should emphasize the inter-shareholders conflicts (large versus minority shareholders) that are exacerbated by the preponderance of closely held firms (through the use of multiple class shares) and highly interconnected corporate holdings (through pyramidal, cross, and reciprocal holdings). Similarly, regulators and legislators ought to focus more attention on political connections of Canadian tycoons, the disclosure rules, and the enforcement of corporate laws, to ensure the efficiency of the Canadian stock market.