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# Corporate Governance and Ownership Structure in Emerging Markets: Evidence from Latin America

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## ABSTRACT

Corporate Governance and Ownership Structure in Emerging Markets: Evidence from Latin America

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My dissertation explores the leading role of ownership structures in corporate governance for publicly traded firms in emerging markets. I analyze the relationships between ownership structures, corporate governance mechanisms, firm value and market liquidity for a sample of Latin American firms. The predominant highly concentrated ownership within a context of weak shareholder protection provides a rich environment to explore corporate governance practices in a regional setting. The period of analysis, 2000-2006, is characterized by economic growth sustained by the expansion of foreign direct investment in a post-privatization era. The region as a whole, rather than just individual markets, became an attractive investment destination. In addition the development of a private pension system initiated in Chile and subsequently expanded to more than 25 countries (the AFP system) reinvigorated the capital markets which have become more attractive as a means of diversification for global portfolios. Moreover, understanding the implications of concentrated ownership structures is fundamental for participants in a yet incipient mergers and acquisitions market. My dissertation consists of three related essays which collectively cohere to represent my research approach and understanding of the topic and they all benefit from the exploitation of a unique ownership database. This work serves to advance the finance literature in several

dimensions: a) the manuscript examines at markets which have hitherto been ignored or at best simply characterized as having very weak governance structures; b) it addresses endogeneity problems from the initial design of this research project through the data collection process; c) furthermore, I extend the literature on the interactions between governance mechanisms and firm value; and d) it develops new corporate governance measures, including novel "effective" firm ownership variables for these markets. Dominant shareholders may have both the capability and the incentive to expropriate minority shareholders. Specifically, I examine performance effects that may be attributable to discrepancies between voting rights and cash-flow rights. I examine the extent to which dominant shareholders can divert resources for their own consumption, in turn reducing overall shareholder value. Given the large potential for private consumption, by the dominant shareholders, I also explore the motivations for outside investors to participate in the financing of the firms' activities.

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To my mother Rosa Maria so she heals soon.
To my father Antonio for his strength.
To my brothers Toño and Pablo who share my hopes.
And, to the memory of Alfredo.

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TABLE OF CONTENTS

## LIST OF FIGURES

## LIST OF TABLES

# Chapter 1

## Introduction

One of the focal points of the corporate governance literature is the leading role of ownership structure as a governance mechanism. In this research I study the effects of ownership structures on firm value and market liquidity through their interaction with other corporate governance mechanisms in emerging economies within a context of weak shareholder protection[1]. In this introductory chapter I present the motivation for this research project and I outline the main contributions I provide to the advancement of the finance literature. I also describe the database and the challenges encountered during the data collection process. I develop novel measures of ownership and describe the aggregation process of voting rights and cash-flow rights in business groups. Finally, I outline the endogeneity problems and the methodological approaches used in the analysis.

According to a traditional finance paradigm, the ownership of public corporations is widely dispersed among atomistic investors and agency problems arise between managers and shareholders. This paradigm is not applicable in many countries, particularly those in which families, business groups or governments control most publicly traded firms (Faccio and Lang, 2002; Claessens *et al.*, 2002; Lins, 2003; Khanna and Yafeh, 2005). Even in the United States, controlling shareholders govern a large number of firms (Holderness, 2007; Demsetz and Lehn, 1985). Concentrated ownership

[1] In emerging economies shareholders rights are protected by local stock exchanges, local securities exchange commissions, courts of justices and the rule of law, but these institutions are deemed to be weaker than in developed countries and are considered especially weak in countries under Civil Law regimes.

structures give rise to a new form of conflict of interest between dominant shareholders and minority shareholders. This conflict of interest is characterized by the potential for asset diversion from the firms to dominant shareholders, thereby reducing overall shareholder value.

When the voting rights of dominant shareholders exceed their cash-flow rights, the conflict of interest, and the incentive for asset diversion is magnified because the costs of private consumption to dominant shareholders are proportionally lower than the costs to minority shareholders. The discrepancies between voting rights and cash-flow rights are created and amplified by at least three mechanisms: aggregation of voting rights through business groups, use of multiple-class shares, and indirect ownership through pyramidal structures. In the latter, firms at the top of the pyramid are endowed with disproportionate voting rights over the cash-flow generated by firms at the base, inducing asset diversion from the base up (Claessens *et al.*, 2002). On the other hand, the temptation for private consumption may be limited when external financial markets are underdeveloped and are relatively costly sources of funds. Under these circumstances and when the investment requirements of growing business opportunities exceed internally generated funds, equity represent an important alternative source of financing. Consequently, dominant shareholders reduce private consumption, and may hold onto significant cash-flow rights to signal the quality of investments and their commitment not to expropriate minority shareholders. The self-control argument is consistent with the pecking order theory of Myers and Majluf (1984) since voting and non-voting equity are issued as a last resort when debt financing becomes extremely expensive in terms of interest rates and excessive monitoring privileges to creditors. This approach however

diverges from La Porta, Lopez-De-Silanes and Shleifer (1999) argument of bank centered financial systems in which firms rely on debt finance and corporations rarely have to issue equity to raise funds. The identity of dominant shareholders also plays an important role in credibly signaling the degree of potential asset diversion.

In this introductory chapter, the ownership structures in five Latin American markets: Brazil, Chile, Colombia, Peru and Venezuela, are characterized. The ownership structures predominant in the Latin American markets provide a rich environment to explore corporate governance practices in a regional setting. La Porta, Lopez-De-Silanes, Shleifer, and Vishny (1998) report the aggregated ownership by the three largest shareholders in Brazil (57%), Chile (45%), Colombia (63%), and Peru (39%) for the ten largest non-financial firms. My preliminary examination of the sample of publicly traded firms indicates that the largest shareholder in Latin American firms has between 4.99% and 100% of the voting shares, with an average holding of 53%. With such a concentration of voting shares, any shareholder not affiliated with the dominant shareholders (or shareholder group) is unlikely to gain a seat on the board, be motivated enough to monitor the managers, assume managerial functions, file a law suit and/or obtain other benefits; and a conflict of interest between dominant shareholders and minority shareholders is more likely to occur than agency problems between managers and shareholders (Bennedsen and Wolfenzon, 2000; Claessens *et al.*, 2002).

This research characterizes the ownership structures in Latin American markets from a new perspective which constitutes one of its contributions. In markets characterized by weak shareholder protection, dominant shareholders and their close

collaborators may assume managerial functions or alternatively, dominant shareholders closely monitor the managers, thus managerial ownership as studied in previous literature is subsumed into the ownership of dominant shareholders. Consequently, I assume that the managers behave in the interest of dominant shareholders (La Porta, Lopez-De-Silanes, Shleifer, and Vishny, 2002) and that blockholders are active monitors rather than passive investors (Bennedsen and Wolfenzon, 2000). This framework questions the role of managers as independent decision makers and departs from Lins (2003), who examines management-controlled firms. If managers do not belong to the dominant shareholders' business group, they will have to co-operate with dominant shareholders anyway. For example, in 2005 at Ferreyros S.A.A. the largest holders of voting shares are two local pension funds, (13.6% and 10.87% of voting shares) and an insurance company (11.08% of voting shares) but the firm is still managed by the founding family. The managers have extensive latitude in operating and routine business decisions, but for strategic decisions[2], the institutional investors will be consulted. To examine the argument of conflict of interest between shareholders I develop a number of measures of effective ownership concentration which constitutes another of the contributions of this study. First, I identify each relevant shareholder. Next, each shareholder is assigned to a business group. Finally, I perform separate aggregations of voting rights and cash-flow rights within business groups. I use these measures to study the effect on firm value and market liquidity of the discrepancies between voting rights and cash-flow rights for dominant shareholders through its interaction with other governance mechanisms.

Specifically, I examine performance effects that may be attributable to

[2] Strategic decisions are defined as decisions that put at risk a significant fraction of firm resources.

discrepancies between voting rights and cash-flow rights. I look at the extent to which dominant shareholders divert resources for their own consumption, in turn reducing shareholder value. Dominant shareholders may have both the capability and the incentive to expropriate minority shareholders. The capability to expropriate hinges on the percentage of voting rights held by dominant shareholders (TOP1VR). Large holdings by dominant shareholders reduce the likelihood for outside blockholders to stand up and challenge managerial and strategic decisions. To determine the incentive to expropriate I compute two alternative measures of the discrepancies between voting rights and cash-flow rights. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. The larger the difference, the greater the incentive to expropriate minority shareholders. Since the GAP1 range is wide and includes some negative and zero values I also calculate RAT1: the ratio of the percentage of cash-flow rights to the percentage of voting rights. The larger the ratio, the lower the incentive for expropriation. In the subsequent chapters, the analysis is conducted using these alternative ownership concentration measures, to investigate the robustness of the results. In the regression analyses of firm performance the coefficient estimates are expected to have opposite signs for the GAP1 and the RAT1 specifications.

Given the large potential for private consumption, the role of blockholders is of particular interest. Blockholders are defined as outside investors (excluding dominant shareholders) who are large enough to have a choice between whether to assume a monitoring role or to collude with the dominant shareholders to extract private benefits. La Porta, Lopez-De-Silanes and Shleifer (1999) analyze the problem of monitoring families. My approach extends this analysis, and focuses on the parties whose role it is to

monitor the dominant shareholders. This research project also examines the motivations for outside investors to take large stakes to finance the firms' activities, while facing the risks of expropriation, illiquidity and under diversification. Bennedsen and Wolfenzon (2000) find that optimal ownership structures have a single large shareholder or few large shareholders of similar size. Bathala, Moon and Rao (1994) suggest that the "exit" solution by unsatisfied institutional investors has become more difficult due to transaction costs and portfolios heavily weighted on firms making up the index. Since most of the firms in the Latin American sample are part of the local exchange index, increasing monitoring becomes a viable alternative. In addition, if low ownership concentration increases markets liquidity, facilitates takeovers, and prompt exits from troubled positions, blockholders are incurring in additional risk by holding undiversified portfolios. Therefore, some mechanisms should be in place to ensure an adequate return on investment, to increase shareholder protection and to reduce market undervaluation.

In some cases, blockholders and creditors could deter excessive private consumption by dominant shareholders. Some blockholders, such as pension funds, have the potential to prevent asset diversion thereby increasing shareholder value. However, others may negotiate with dominant shareholders to obtain a portion of the private benefits. Blockholders' identity, their stake in the firm and the value of the stake with respect to the total value of their portfolio determine the behavior of the blockholders. To the extent that firm leverage is low, and blockholders collude with dominant shareholders, the monitoring incentive vanishes. Therefore, I also calculate the discrepancies between voting rights and cash-flow rights for the second and third largest shareholders as well as for an aggregated investor for every category in each firm. The

unique ownership database also allows a detailed time series analysis of the ownership structures. The time-series dimension of analysis counts as an additional contribution of this work since it exceeds by far the scrutiny present in previously published research.

Figure 1.1 offers an understanding of the ownership concentration in these markets. Dominant shareholders concentrate most voting rights, leaving little room for blockholders (outside investors), when they exist at all. Moreover, floating shares are in short supply, and voting shares float less than non-voting shares. On the inclined coordinate plane are shown the percentage of voting rights (from right to left) and cash-flow rights (from front to back) for dominant shareholders of firms in the sample (all years). Observations off the main diagonal indicate more voting rights than cash-flow rights for dominant shareholders, and thus an incentive for asset diversion. Dominant shareholders frequently choose holding voting rights that exceed cash-flow rights reducing the own portion of the costs of private consumption. The vertical axis indicates Tobin's Q ratios as a proxy for firm value. Market participants seem to attach a higher value to those firms in which the discrepancies between voting rights and cash-flow rights are lower. However, having a balance between voting rights and cash-flow rights is not enough to ensure high firm value. The variation of firm valuation along and near the main diagonal of zero discrepancies may represent differentials of managerial ability, firm characteristics, market conditions, risks associated with industry effects and country specific environments. Additional variability in firm valuation off-diagonal represents dominant shareholders' pre-commitment not to expropriate minority shareholders. The populated off-diagonal zone shows the requirements to finance the firms' activities beyond the availability of internally generated funds and debt financing, and the

willingness of outside investors to participate. Since similar levels of market value are displayed at different positions on the plane, some governance mechanisms should be in place to help protect minority shareholders.

Figure 1.2 reveals the ownership concentration and interconnectedness of firms in the Latin American sample. It represents a sub-sample of the firms and shareholders in the ownership database. Minimum holdings of 5% voting shares are represented by the ties (arrows) between firms and shareholders. Lower shareholdings are omitted for the sake of a cleaner picture. Firms are represented by the circles originating the arrows forming the remote (small) semi-ellipse. Shareholders are represented by the circles receiving the head of the arrows, forming the nearest (large) semi-ellipse. We should focus on the number of ties (arrows) each firm originates and each shareholder receives. Most of the firms in this sub-sample have in common "Caixa Prev Func BB – Previ" (center) as shareholder, or have other shareholders in common with a firm in which "Caixa Prev Func BB - Previ" has a stake. These interconnected ownership structures motivate the analysis in a regional setting. In this case, "Caixa Prev Func BB – Previ" is a local pension fund. Its holdings of more than 5% of voting rights in many firms suggest its potential for a central role in the governance of a number of firms. Under certain circumstances the pension fund would exercise closer or looser monitoring, but it reserves the right to participate in strategic decisions (acquisitions, capital restructurings), consistent with its fiduciary duty towards investors and clients. There are other important shareholders in the region (with many ties) around the center of the figure. For example Cia Hering has four shareholders with more than 5% of voting shares: Invest Particip INPASA S/A with 22.76%, Ivo Hering with 15.82%, IPE Invest e Part Empresariais

Ltda. with 7.43% and Caixa Prev Func BB – Previ with 5.75%. The founder is no longer the dominant shareholder but it performs managerial functions. However, for strategic decisions the blockholders will step in.

I also compute ownership variables to account for the level of (absolute) power of dominant shareholders. For example, the dummy value Control50 equals 1 for firm-year observations in which dominant shareholders control more than 50% of the voting rights. Table 1.1 provides an insight of the ownership concentration in these markets for the sub-sample used in Chapter 3 with 935 observations remaining after the lag of Tobin's Q is calculated. For example, for Brazil in 2001 out of 74 firms in the sample, 55 have a dominant shareholder with more than 50% of voting rights. Similarly, 40 firms have a dominant shareholder with more than 60% of voting rights. Given such prominent ownership concentration, an interesting aspect to explore in Latin American markets is whether some firm characteristics or ownership structures attract large numbers of blockholders. There are a number of published academic works that study corporate governance mechanisms in individual countries (Canada: Switzer and Kelly, 2006) as well as multi-country or regional studies (East Asia: Claessens *et al.*, 2002; Western Europe: Faccio and Lang, 2002; Cross-country: Lins, 2003). Some studies focus on developed countries while others focus on emerging or transition economies. This investigation contributes to the finance literature by focusing on the Latin American region as an investment destination for local and foreign business groups.

Data collection remains one of the greatest challenges to conducting research in emerging markets. Many corporate governance studies use data from primary sources,

usually collected by hand from hard formats, are constrained to cross-sectional analysis and few firms, usually covering few years. Moreover, Anderson and Lee (1997a and 1997b) discuss the different reporting conventions of four databases for US firms and show how the data source could affect the results in ownership studies. My analysis is based on a unique database that provides detailed ownership information for publicly traded firms from Brazil, Chile, Colombia, Peru and Venezuela. Rigorously and conservatively exploiting this database constitutes another contribution of this work. Most of the firms are part of the respective local exchange index and hence may have liquidity advantages and increased visibility, relative to non index firms. Those firms are followed by more analysts than other firms and may improve corporate governance practices to attract global investors seeking portfolio diversification. However, Nenova (2003) warns of a survivorship bias by suggesting that firms in which private benefits are higher could eventually delist, and Claessens *et al.* (2002) argue that studying only listed firms would create a bias in terms of ownership and firm valuation.

The ownership database Economatica is matched to Bloomberg for financial data and SDC for mergers data. Stability is historically rare in a region marked by political turmoil and economies tied to highly volatile commodity markets. The period of analysis (years 2000 to 2006), is characterized by constant and stable growth for most countries in the region (Table 1.2). However, the relative size of the security markets lag behind those in developed countries (Table 1.3). From the ownership database I obtained the name of 2261 different shareholders owners of voting and/or non-voting shares, for the initial sample of 329 firms. The maximum number of shareholders (Shholdrs) per firm is 18 (three observations), with 62 observations indicating 17 shareholders, and 318

observations with a single shareholder. A given shareholder may occupy the dominant voting position in one firm, and be a marginal voting shareholder or just a non-voting shareholder in another firm or year. Additionally, a voting shareholder is frequently also a non-voting shareholder for the same firm-year, narrowing the discrepancies between voting rights and cash-flow rights.

In the sample there are firms in which atomistic shareholders own just voting shares or just non-voting shares. With concentrated ownership, multiple-class shares provide vehicles to raise funds while maintaining control, therefore non-voting shares are most frequently traded while voting shares are rarely traded, traded at a discount, or traded in blocks during a negotiated change of control[3]. But, even in the case of public firms without voting shares floating, blockholders could use the stock exchanges to trade, or use other formal market mechanisms such as a tender offer, to transfer control. Lins (2003) finds that managers of Latin American firms frequently use shares with superior voting rights to increase the voting rights associated with their cash-flow rights. He reports a mean (median) of 45% (51%) of non-voting shares in the equity capital structures in Peru and Brazil. Nenova (2003) reports that dual-class shares are much more frequent in Brazil than in Chile and Lefort and Walker (1999) also indicate that dual-class shares are rare in Chile (7.5% of listed firms) while cross-holdings are forbidden by law. Valadares and Leal (2000) state that in Brazil non-voting shares are frequently more liquid than the corresponding common shares. They note that the Brazilian law allows the issuance of up to 2 non-voting shares for each voting share. Thus, in the extreme case the control of a Brazilian company could be obtained with 50% of the voting shares that

[3] Although the OECD Principles (2004) do not take a position on the concept of one-share-one-vote, they recommend that within any series of a class all shares carry the same rights.

represent only 16.7% of the total capital (control can be guaranteed with just 1/6 of its total capital). However, only 27% of Brazilian firms are close to the limit of non-voting shares. They find that 54% of equity are voting capital, but only 11% of Brazilian listed firms do not have non-voting shares.

I obtained the percentage of voting and non-voting shares for each identified shareholder (non-floating shares), and the percentage of voting and non-voting shares owned by unnamed atomistic shareholders (floating shares) as well as the total number of voting and non-voting shares of the firm. Voting rights are numerically equal to the percentage of voting shares, assuming that all voting shares entitle the owner to one vote as indicated by the data provider. Should this assumption not hold, the bias introduced in the analysis would work against obtaining significant results since dominant shareholders would have even more voting rights in excess of cash-flow rights than those computed. Cash-flow rights represent claims in future dividends. I calculate the cash-flow rights of each shareholder as the percentage of voting shares times the total number of voting shares of the firm plus the percentage of non-voting shares times the total number of non-voting shares. The sum is divided by the sum of total voting and non-voting shares.

When the shareholders are corporations with observable ownership structures, they are entitled only to the portion of cash-flow rights corresponding to their own dominant shareholders, but to all the voting rights. I adjust the measures of cash-flow rights accordingly. Since voting rights are maintained intact while the cash-flow rights are reassigned, these necessary recalculations likely weaken the cash-flow rights of corporation blockholders and ultimately increase the discrepancies between voting rights

and cash-flow rights for dominant shareholders. The resulting measures of voting rights and cash-flow rights are in line with the measures of ownership and control in Faccio and Lang (2002). The algorithm designed with nested steps takes care of pyramidal structures, cross-ownership, and diversion from the one-share-one-vote rule through the use of multiple-class shares. The aggregation procedure is integral, and is closer to the method of Lins (2003) than to Faccio and Lang (2002) or Claessens *et al.* (2002), that use the weakest link along the control chain as a measure of voting rights, and the product as a measure of control rights. With the weakest link approach a portion of voting rights are left unexercised. Lefort and Walker (1999) find that Chilean groups use relatively simple pyramid structures in which more than four layers are rare. They point to large differences between personal and corporate tax rates to explain the extensive use of holding companies. Valadares and Leal (2000) find that relatively flat pyramidal structures although common for Brazilian firms are not important means to separate ownership and control but to keep the control of the firm within the same family.

One contribution of this study is to establish the identity of the shareholders. The identification of business groups facilitates an analysis of voting behavior by blockholders and allows for the calculation of aggregated voting rights and cash-flow rights. Business groups are ad-hoc groupings in which distinct shareholders have ties such that during the shareholders' general meetings (or their representatives during the board of directors' meetings) they will vote in the same direction in all matters, including actions that could expropriate other shareholders who are not members of the groups. Khanna and Yafeh (2005) define business groups as hybrid forms of diversified organizations between firms and markets, ubiquitous in emerging markets and that would

roughly correspond to US conglomerates. Members of the coalitions benefit, or remain neutral from expropriation actions in the short run but these groups have medium and long horizons.

Holdings of non-voting shares by blockholders who are no members of dominant coalitions are common which increases the risks of expropriation. However, business groups partially insulate their members against expropriation by dominant shareholders. The difficult access to debt financing and the steep financial requirements of the firms motivates the offering of non-voting shares to blockholders. Even though blockholders are incurring in additional risk by holding undiversified portfolios, business groups strengthen bargaining positions, and increase the predisposition to participate in expropriating minority shareholders. Moreover, otherwise unrelated firms dominated by business groups may benefit from intra-firm financial transfers that are not necessarily market based, as in Claessens *et al.* (2002) and Dahya, Dimitrov and McConnell (2008). Similarly, Lefort and Walker (1999) suggest that business groups may function as investment vehicles thereby partially substituting for capital markets.

First, I identify each named shareholder as member of an inter-temporal cross-firm business group or as a stand-alone investor. Grouping shareholders in business groups assures that all the siblings in a family (along with spouses, cousins, parents and children) vote in the same direction (Claessens *et al.*, 2002). For example in 2005, Lucila, Barbara, Jaime, Carolina, Eduardo, Marian, Salvador, Silvia and Patricia Gubbins G. each own 7.99% of voting shares of Soc. Minera Corona. The Succession Reynaldo Gubbins Granger owns an additional 6.5%. With a cutoff level of 10% it would appear to

be a widely-held firm; however it is closely controlled at 78.41%. In the same way, the votes of all the shares owned by a mutual fund through different financial products or by a bank through different branches are cast in the same direction. A mutual fund may offer a capital-preserving fund, a capital-growth fund, and an aggressive-growth fund to his clients. Through products designed to accommodate different risk-aversion profiles the fund invests different proportions of the capital in given markets and companies. Moreover, the different products may have independent flags for increasing and reducing exposure to idiosyncratic or market risks, but when converging as shareholders in a firm, their votes are aggregated. Such cases indeed occur in the database and are not merely theoretical. Thus, the voting rights of all members of a business group are aggregated. Previous works aggregated the voting rights of the three or five largest shareholders without analyzing the identities of each one. In that sense the careful inspection of the ownership data represents an advance over previously published articles.

Second, the cash-flow rights are aggregated. Cash-flow rights of voting shareholders are diluted, with respect to the simple percentage of voting shares, as cash-flow rights of other non-voting shareholders are taken into account. As a consequence, failing to aggregate voting and non-voting shares across members of business groups would result in narrower (wider) voting rights/cash-flow rights discrepancies, if the unaccounted percentage of voting shares were larger (smaller) than the unaccounted percentage of non-voting shares. Narrower voting rights/cash-flow rights discrepancies would work against finding significant results since dominant shareholders would have even more incentive to expropriate minority shareholders than that computed. Thus, aggregation in business groups is an important contribution of this study. Members of

business groups have common family names, have similar firm names likely to be copyrighted, or have multi-firm relations (been owners/shareholders in many firms). However, in some cases, by looking just at the shareholders' name it would not be evident why they should vote in the same direction, thus a detailed analysis is necessary to realize their ties. Corporate documentation, analyst reports, and previous works were reviewed to confirm group membership. As any matching procedure, this will also be imperfect. Group membership was double checked and members' voting rights are effectively aggregated when they meet in the same firm-year. Thus, "over grouping" is not expected to have a major effect; in contrast "under grouping" is more likely to occur, due to limitations in identifying reasonable links between shareholders. Nevertheless, the bias introduced in the analysis by the under grouping problem would work against finding significant results since dominant shareholders would have even more voting rights in excess of cash-flow rights than calculated.

Then, I reorganize the newly aggregated shareholders according to the level of voting rights and I establish a direct correspondence between voting rights and cash-flow rights for each shareholder. Aggregating voting rights may consolidate the position of dominant shareholders, but previously dominant shareholders can also be overthrown by grouping siblings that become more powerful after aggregation. Finally, I assign any treasury stocks' voting rights and cash-flow rights to dominant shareholders. I group 793 shareholders in 225 business groups. The most populated business group has 24 members, the second most populated group has 17 different members, and there are 114 groups with just two members. A given shareholder may appear in the database in multiple occurrences, holding shares in different firms and years, but no shareholder will

appear as member of two groups, nor as a group member and individually.

Extending Faccio and Lang (2002), Claessens *et al.* (2002) and Lins (2003) the 793 shareholders members of business groups and the 1468 stand alone investors are further classified into five categories. The purpose of the classification is to predict their behavior (the direction of their votes) in cases of imminent conflict of interest between dominant shareholders and minority shareholders. These exclusive categories are Family, Corporation, Institutional Investor, Government and Other. All members of a business group must have the same category. When conflicting categories arise within members of a business group, the Family category dominates then the Government category has priority, and then the Corporation category. For example a family controlled corporation that appears as a shareholder in another firm is assigned to the family business groups and behaves as a family member. Similarly a government controlled bank behaves as a government agency when it appears as a shareholder in another firm. The shareholder categories represent a first level of monitoring by blockholders as they can influence each other, influence dominant shareholders and managers. Another level of monitoring that will be discussed in Chapter 3 comes from external stakeholders: creditors, analysts, market regulators and stock markets which represent minority shareholder interests. For example, when a firm decides to cross-list in foreign exchanges they may abide to increased financial disclosure but only in some cases. A priori, a specific behavior may be expected from the different categories of investors:

Family groups, as well as individual investors (families of just one member) may be inclined to expropriate minority shareholders and colluding with other shareholders to

do so. They are short run rent seekers and treat the firm they control as they private realms. Nepotism is frequent, noticeable and often justifiable. However, for reputation concerns, they could refrain from excessive private consumption. Most of the firms in the sample make the local exchange index, are among the largest companies in these economies and have been operating for a long time; therefore I do not distinguish between lone founder business and true family business as Miller *et al.* (2007) who find that only the former outperform public firms in the US, for the period 1996-2000. In markets characterized by weak shareholder protection, initial public offers (IPOs) are rare and entrepreneurial initiatives, which impulse economic development and innovation are most often privately financed and resort to public financing for growth only after success can be demonstrated.

Under the profit maximizing premise, corporations would take advantage of any business opportunity, whether it is building market power or expropriating minority shareholders in other firms in which they have controlling investments. But corporations have also the ability to block expropriation practices by other shareholders. Moreover, belonging to powerful business groups reduces the chances of being a victim of expropriation and increases the chances of being invited to consume a portion of the private benefits as in Bennedsen and Wolfenzon (2000). However, Claessens *et al.* (2002) claim that the managers of firms controlled by both widely-held corporations and institutional investors have less opportunity to efficiently divert assets.

Members of the Institutional Investor category such as depository banks, investment banks, mutual funds, pension funds, insurance companies, stock brokers, and

stock exchanges tend to increase the value of the firms in which they have interests. They presumably have the expertise and the resources to monitor, and meaningfully influence corporate actions and elect capable board members. Furthermore, most institutional investors comply with their own strict governance codes and impose governance standards on the firms they control, thus asset diversion and minority shareholders expropriation is less probable. In general, institutional investors will oppose expropriation, will not collude with other shareholders, and will block expropriation attempts. Moreover, the mere presence of institutional investors may dissuade dominant shareholders from engaging in expropriation activities to avoid initiating monitoring behavior. Even if individually institutional investors look weak or distant, a large number of them may get organized and join voting rights when dominant shareholders excessively consume private benefits. The Institutional Investor category includes local as well as foreign shareholders.

Shareholders in the category Government are federal, provincial or municipal governments or government agencies, government banks, development agencies, and firms owned by governments, such as utilities or natural resources companies. They may form business groups, meaning in this case that their representatives, when they meet at the boardroom, vote in the same direction, probably following the most influential of them. This assumption is satisfied if most government representatives have partisan allegiances, are disciplined and likely to rotate from one position to another and in and out of political appointments. Governments behave much as institutional investors blocking asset diversion. However, some authors have suggested that politicians would appropriate private benefits or collude with the managers (or dominant shareholders) to

do so. Khanna and Yafeh (2005) offer a review of the relation between groups and politics. Government controlled firms may also obtain preferential subsidies, which could be of benefit to the firm. On the other hand, they are subject to greater pressure from unions.

The few distinct shareholders under the category Others are institutions of different kinds, such as income trusts, foundations, cooperatives, religious organizations, active and retired employee associations, social security networks, fraternities, cultural foundations, universities and educational foundations. When they are not related to business groups, and if properly run, they behave as corporations. They are few, and relatively powerless, and for subsequent analysis and reporting, they are subsumed into the Corporation category.

My dissertation consists of three related essays exploring the topic of corporate governance in emerging markets. The three essays (Chapters 2, 3, and 4) collectively cohere to represent my research approach and understanding of the topic and they all benefit from the exploitation of a unique ownership database and share the same variables definition. However, different econometric techniques are used in each one. In Chapters 2 and Chapter 3 the endogeneity problems are addressed with an appropriate empirical design. The endogeneity problems that plague many corporate governance studies arise when some regressors are not orthogonal to the error term. Several forms of model misspecification cause endogeneity bias. Among the most often cited causes are: omitted variables, simultaneity bias and errors-in-variables. While desirable, it becomes impracticable to control for every form of model misspecification at the same time. In

Chapter 2, I attack problems caused by omitted variables while the approach in Chapter 3 is designed to deal with simultaneity.

In the first essay (Chapter 2), I also expand on the characterization of the ownership structures outlined in the introductory chapter. I directly explore the relation between ownership structures and firm value using panel data techniques and the measures of ownership concentration. I study the discrepancies between voting rights and cash-flow rights for dominant shareholders, as well as the voting rights for characterized aggregated blockholders, as determinants of firm value. Dominant shareholders are confronted with the decision to expropriate minority shareholders when the opportunity presents itself. Blockholders are defined as outside investors large enough to have the choice whether to assume monitoring roles or to collude with dominant shareholders to extract private benefits. Depending on their ownership stakes and identity (family groups, corporations, institutional investors or governments), blockholders may serve to either boost or depress investor confidence (McConnell and Servaes, 1990; Bennedsen and Wolfenzon, 2000; Lins, 2003). Since I collect and analyze ownership data for the years 2000 to 2006, panel data techniques provide a means to address unobserved heterogeneity for individual firms. I find that a discount is imposed on the value of firms in which the voting rights of dominant shareholders exceed their cash-flow rights, in the studied markets, which are characterized by weak protection for minority shareholders and high ownership concentration. However, valuations are enhanced for firms whose dominant shareholders are family groups or corporations rather than institutional investors or governments. The evidence suggests that the stock market discount is lower when other family groups and corporations assume monitoring roles similar to that of

creditors. Collusion between blockholders and dominant shareholders for the purpose of extracting private benefits of control, to the detriment of minority shareholders, is not evident.

In the second essay (Chapter 3) I investigate the interactions between ownership structures and several corporate governance mechanisms as determinants of firm value. I use a simultaneous equations approach which requires computing a number of governance variables as instruments, in addition to the ownership measures and firm characteristic used in Chapter 2. As a consequence, the analysis in Chapter 3 uses fewer observations than in Chapter 2; it is noteworthy that all the observations from the year 2000 are lost when I compute the first lag of the measures of firm value. The level of some governance mechanisms, such as takeover activity, is externally determined; while other mechanisms such as the ownership of dominant shareholders are decided internally to the firm to offset environmental mechanisms (Switzer, 2007). I use a simultaneous equations system to analyze the relation between governance mechanisms and firm value, expanding on the approach of Agrawal and Knoeber (1996). Even though some mechanisms may not look optimal in isolation, they would be collectively optimal. The costs of changing dominant shareholders' ownership may exceed the benefits and it may be optimal to maintain control of the firm. In addition, firm value and ownership may be endogenously determined (Himmelberg, Hubbard and Palia, 1999; Demsetz, and Villalonga, 2001; Lins, 2003; Bhagat and Bolton, 2007). Therefore, other governance mechanisms adjust to maximize firm value. For example, dominant shareholders might decide that the firm should not issue multiple-class shares, to signal their respect of minority shareholders' rights. Similarly, debt financing increases outside monitoring.

Both mechanisms may be used by dominant shareholders to pre-commit not to expropriate minority shareholders. I analyze the collective effects on firm value of a number of endogenous governance mechanisms including ownership structures, board independence and firm leverage while controlling for takeover activity, country effects, industry effects and firm characteristics such as firm size, board size, cross-listing, single/multiple-class shares, dual role of the CEO as chairman of the board and stock return volatility.

The third essay (Chapter 4) focuses on the effects of ownership structures on the liquidity of stock markets. Additional data is collected to compute liquidity measures from intraday trading data. Data availability limits the analysis to two countries: Brazil and Chile, during a three month period in 2006. The ultimate defense strategy of an expropriated investor is to exit the position, provided that a deep enough market exists. In principle, this should not be a problem for a stock in the local index. However, a run by blockholders may hurt minority shareholders more than the consumption of private benefits by dominant shareholders. Moreover, to the extent that blockholders such as local pension funds have few diversification opportunities and their funds increase overtime, they are themselves locked into their positions and would prefer increasing monitoring than exiting large positions and risking triggering a domino effect which could precipitate a market wide crisis.

Chapter 5 concludes.

## Chapter 2

# OWNERSHIP STRUCTURE AND FIRM VALUE: A PANEL DATA ANALYSIS

In this chapter I directly explore the relations between ownership structures and firm value. Endogeneity problems which affect many governance studies are addressed with the very design of the empirical approach as opposed to just in a robustness test. Similarly, the analysis is conducted over alternative ownership concentration measures to investigate the robustness of the results. I expand on the characterization of the ownership structures of the firms in the sample outlined in the introductory chapter. Using panel data techniques, I regress firm value, as proxied by Tobin's Q, on several ownership variables characterizing the identity and holdings of dominant shareholders, and the discrepancies between voting rights and cash-flow rights which represent the incentive for private consumption. I then examine the role of blockholders, including institutional investors and governments, and their potential for monitoring or colluding with dominant shareholders.

All the countries in the Latin American sample: Brazil, Chile, Colombia, Peru and Venezuela have a civil law tradition as per La Porta, Lopez-De-Silanes, Shleifer and Vishny (1998) and consequently are described as having weak protection for minority shareholders. Moreover, Djankov, La Porta, Lopez-De-Silanes and Shleifer (2008) find that in successful stock markets private contracting is more important than public enforcement. When shareholders receive full disclosure of a potential conflict of interest, the power to vote and the means to effectively litigate expropriation may be deterred without relying on fines and criminal sanctions. In this context of weak shareholder

protection and high ownership concentration, I find that a discount is imposed on the value of firms in which the voting rights of dominant shareholders exceed their cash-flow rights. However, investors prefer dominant shareholders which are family groups or corporations rather than institutional investors or governments. The evidence suggests that the stock market discount is lower when other family groups and corporations assume monitoring roles similar to that of creditors. Collusion between blockholders and dominant shareholders for the purpose of extracting private benefits, to the detriment of investors, is not evident.

## 2.1 LITERATURE REVIEW

The purpose of this literature review section is two-fold. The first objective is to position this research among the most recent and relevant ownership studies, especially those which investigate international firms. The second objective is to show that many related papers address similar problems from a variety of perspectives. This diversity of viewpoints corresponds to data availability which differs from country to country and is also affected by different aggregation algorithms. Moreover, Anderson and Lee (1997a and 1997b) discuss the different reporting conventions of four databases for US firms and show how the data source could affect the results in ownership studies. Thus, it is difficult to assert that managerial ownership in one paper exactly corresponds to the ownership of controlling parties in another paper or to the definition of dominant shareholders presented here. Different papers denote the same variables very differently, for example state ownership and government shareholdings are usually referring to the same type of investor. Therefore, for the literature review I maintain the original word

choice from the authors, and in subsequent sections and chapters I consistently use the terminology I suggest.

The theoretical model of Bennedsen and Wolfenzon (2000) for closely held corporations shows that the founder of the firm can use control dilution as a mechanism to reduce asset diversion which would be harmful for him. In their model some shareholders are large enough not to surrender control to the managers, but none is large enough to obtain control by himself. Diverting assets from the firm requires the consent of a coalition of blockholders, and the winning coalition minimizes its cash-flow rights.

In their 1995 sample, La Porta, Lopez-De-Silanes and Shleifer (1999) find that families or the state typically control most large corporations in 27 industrialized economies. Additionally, the power of the controlling shareholder exceeds his cash-flow rights, and dispersed ownership is more of an exception in countries with poor shareholder protection, which tend to have a civil law tradition. The authors suggest that a mandatory rule of one-share-one-vote will have limited impact as long as pyramids remain the principal vehicle to separate ownership and control.

McConnell and Servaes (1990) investigate the cross-sectional relation between firm value and equity ownership for a sample of US firms for 1976 and 1986. They find that firm value first increases with insider ownership (alignment effects), and then it declines (entrenchment effects). Their sample average of inside ownership is about 13.9% and 11.8% for each period, and the inflexion point is close to 37%. In addition, they do not find support for the hypothesis that blockholders have an independent effect on corporate value, but also cannot reject the possibility that blockholders and insiders

operate in conjunction. Their results however, suggest that institutional ownership reinforces the positive effects of insider ownership on corporate value (efficient monitoring hypothesis). In addition, the authors outline potential endogeneity problems: managers and founders can be more inclined to retain a large fraction of successful firms, managers of successful firms are more likely to be rewarded with additional stocks.

Claessens *et al.* (2002) find that firm value increases with the cash-flow ownership of the largest shareholder, consistent with a positive incentive effect, for their sample of 1301 publicly traded firms in eight East Asian economies in 1996. However, firm value falls when control rights exceed cash-flow rights for dominant shareholders (entrenchment effect). They argue that the separation of ownership and control in general, and not any mechanism in particular (pyramidal structures, dual-class shares, cross-holdings), is responsible for the valuation discount.

Faccio and Lang (2002) analyze the ultimate ownership and control of 5232 corporations in 13 Western European countries, from 1996 to 1999. They find that firms are typically widely-held (36.93% of the sample) or family controlled (44.29% of the sample) with financial and large firms more likely to be widely-held, while non-financial and small firms are more likely to be family-controlled. They find that in some countries, widely-held financial institutions or governments are important controlling shareholders, but widely-held corporations control few firms. Although dual-class shares, multiple control chains, cross-holdings and pyramidal structures are used to enhance control of the largest shareholders, on average the divergences between ownership (38.48%) and control (34.64%) are significant in just a few countries. Closely controlled firms often

have a sole shareholder at the 20% cutoff level – for example in 53.99% of the European sample.

In Lins (2003) management groups own on average 30% of control rights in the firms and are the largest blockholders in 2/3 of the sample, while non-management blockholders own 20% of control rights. He uses a cross-sectional sample of 1433 publicly traded firms from 18 emerging markets in 1995, which predates my sample. The author finds support for the managerial entrenchment hypothesis. Additionally, he finds evidence that large non-management blockholders can reduce the valuation discount associated with expected managerial agency problems thereby acting as a partial substitute for missing institutional governance mechanisms. Finally, he suggests that future research should study the frequent use of non-voting equity structures in Latin American firms.

Nenova (2003) analyses a sample of 661 dual-class firms in 18 countries for the year 1997, and develops an approach in which shareholders competing for control are willing to pay minority vote-owners a price up to the expected value of private benefits. Therefore, vote value can be identified as a lower bound for control benefits. She finds that control-block votes are valued at more than a quarter of company market capitalization in Brazil and Chile.

Lefort and Walker (1999) describe the ownership of non-financial Chilean conglomerates. They consolidate the balance sheet of firms in pre-defined economic groups to analyze the level of firm assets that are financed by debt and minority shareholder equity. The authors argue that pyramids are often used to separate ownership

and control, and that controllers of Chilean conglomerates hold more shares than necessary to maintain control, suggesting potential large private benefits of controlling the cash-flow from subsidiaries. In addition, they find that board members are exclusively appointed within firms associated to their economic groups, indicating that economic groups do not collaborate with each other.

Valadares and Leal (2000) show a high degree of ownership concentration for Brazilian public firms. The largest shareholder has, on average, 41% of the equity capital while the five largest have 61% for their sample of 325 firms in 1996. In 62% of the companies, a single shareholder owns more than 50% of the voting shares. The authors show that corporations are the main direct investors, while individuals are the more important indirect owners (through pyramid structures and cross-holdings).

## 2.2 DESCRIPTION OF THE DATA

Many corporate governance studies are constrained to cross-sectional analysis whereas the contribution of my analysis is based on a unique database that provides detailed ownership information and financial information for publicly traded firms from Brazil, Chile, Colombia, Peru and Venezuela for the years 2000 to 2006. Tobin's Q, the proxy for firm value, is defined as the sum of Total liabilities and Market value of equity divided by Total assets. After an initial inspection of the financial database I impose a number of restrictions on Tobin's Q to accept valid observations. First 797 observations for which Tobin's Q values could not be calculated are removed from the sample. Since outliers may bias the results and may also originate from data entry mistakes on the original database, I remove 26 observations that report Tobin's Q values higher than 30.

Then, I retain only the earliest observation per firm when Tobin's Q values are repeated. Tobin's Q values are computed from balance sheet items and market value of equity, thus identical observations may result from stale data. The remaining average firm in the sample has a Tobin's Q value of 1.19 and the maximum Tobin's Q value is 8.89. Similarly, McConnell and Servaes (1990) delete firms with Q ratios larger than 6.0; alternatively I could have followed Lins (2003) who censors Q at the 1st and 99th percentiles. Finally, market value data should be accompanied by measures of idiosyncratic risk. In this respect, I impose a filter for stock return volatility removing observations for which the standard deviation of monthly stock price returns over the previous 24 months (Volatility) is missing or zero.

Similarly, I filter the database, considering the following restrictions of the ownership data. I drop nine observations for which dominant shareholders command 100% of voting rights and also 100% of cash-flow rights because the conflict of interest under analysis is between dominant shareholders and minority shareholders, not within family members in private firms. Since dominant shareholders are aggregated entities created from the stock holdings of all the members of a business group, those firms should not have passed the volatility filter (which may have occurred due to stale data). Descriptive statistics for the 1179 valid observations are summarized in Table 2.1[4]. For 484 observations out of 1179, dominant shareholders have voting rights which are numerically equal to cash-flow rights. For such firms GAP1=0 and RAT1=1 where GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders and RAT1 is the ratio of the percentage

[4] Most variables are collected at the firm level. With multiple-class shares, security-specific measures such as volatility are calculated for the security traded most recently with respect to the end of the year.

of cash-flow rights to the percentage of voting rights. For 24 observations out of 1179, dominant shareholders have fewer voting rights than cash-flow rights. For such firms GAP1<0 and RAT1>1. Since other governance measures and firm characteristics not seem abnormal I keep those observations instead of removing them from the sample. A shortage of voting rights with respect to cash-flow rights may temporarily occur due the necessity of funding a new investment project. Dominant shareholders could easily reverse the shortage to an excess of voting rights over cash-flow rights when external equity financing becomes available.

In terms of Total assets, the average (median) size of the firms in the sample is USD 3955 million (891 million), comparable to the size of the firms in Lins (2003). The average (median) firm has a leverage ratio (Leverage) of 0.54 (0.52) calculated as Total liabilities divided by Total assets. The range of the leverage ratio is from 0.02 to 3.11. For 13 observations out of 1179, the leverage ratio is larger than 1 due to a negative book value of equity. Since other governance measures and firm characteristics are not unusual, I keep those observations instead of removing them from the sample. A negative book value of equity may reflect a capital restructuring and does not have to affect firm value if it is a temporary occurrence. The negative book value of equity could easily be reversed when the firm accumulates earnings in subsequent periods. Note that none of the 13 observations with negative equity correspond to the 24 observations with negative GAP1, thus the range of both variables reflects normal business operations. Table 2.2, Panel A provides the geographical distribution of the sample. Brazilian (582 observations) and Chilean firms (269 observations) are the largest, and also outnumber firms in other countries. Table 2.2, Panel B presents the number of observations by

country and year. There are 126 observations in 2006, 186 observations in 2005, 182 observations in 2004, 170 observations in 2003, 168 observations in 2002, 174 observations in 2001, and 173 observations in year 2000.

Dominant shareholders depending of their identity and their discrepancies between voting rights and cash-flow rights may be tempted to expropriate minority shareholders. Blockholders are defined as outside shareholders large enough to have a choice between whether to assume monitoring roles or to collude with dominant shareholders to extract private benefits. Table 2.3 shows the frequency distribution and percentage of voting rights and cash-flow rights by shareholder category. Non-floating shares are owned by identified blockholders, as opposed to floating shares which are owned by unnamed anonymous atomistic minority shareholders. On average, for non-floating shares the range of voting rights (cash-flow rights) is from 5.68% (2.25%) to 100% (100%), with a mean of 63.91% (48.6%). Voting rights also exceed cash-flow rights for non-floating shares when averaging across all the shareholders of a given category. For example, institutional investors have, on average, 33.39% of voting rights but only 27.98% of cash-flow rights. On the other hand, for floating shares the range of voting rights (cash-flow rights) is from 0.01% (0.15%) to 94.32% (94.32%) with a mean of 21.23% (32.55%). These statistics confirm the exposure of minority shareholders to asset expropriation vis-à-vis dominant shareholders and blockholders.

Another contribution of this work is the analysis of the interaction between the largest shareholders of the firm. Table 2.4, Panel A, shows the frequency of the voting rights for the three largest shareholders and their distribution in the four exclusive

categories (Family, Corporation, Institutional Investor and Government). Less than absolutely powerful dominant shareholders may decide to collude with the second or the third largest shareholder in the firm, to obtain, maintain or strengthen control, and/or expropriate minority shareholders. In 944 observations, out of 1179, there is a second largest shareholder -in terms of voting rights- that may monitor, challenge or collude with the dominant shareholder. Similarly there are 764 third largest shareholders. Thus blockholders may have a significant role interacting with dominant shareholders.

Given the ubiquitous organization of business groups in many countries, Djankov, La Porta, Lopez-De-Silanes and Shleifer (2008) suggest that the requirements for disclosing intra-groups transactions should be lower enough to expose them to the public light and to bring the transactions to the shareholders for approval. The interconnectedness of firms in the Latin American sample revealed by Figure 1.2 and the business group membership of the three largest shareholders in all four categories suggest that blockholders may collaborate and collude in an extra-firm scale. In the aggregation procedure, when I conclude that two shareholders would always vote in the same direction, they are assigned to a single business group. When blockholders meet in several firms their relations are governed by their respective categories which are unaffected. Although not modeled in this analysis, meeting in several firms may revise the incentive for blockholders to monitor each other. Thus a level of collusion higher than what the results suggest may occur. However the market may be impaired on its ability to detect and value sophisticate forms of extra-firm associations. The alternative design constitutes an interesting avenue for future research, which the database may allow.

Table 2.4, Panel B, shows the percentage of voting rights and cash-flow rights by shareholder category, for the three largest shareholders. In contrast, Claessens *et al.* (2002) calculate the wedge just for the largest shareholder. The dominant shareholders in these firms have between 4.99% (1.1%) and 100% (99.85%) of voting rights (cash-flow rights), and on average have 55.78% (39.48%). Thus, dominant shareholders have not only the capability but also the incentive to divert assets from the firm. Specifically, when dominant shareholders are corporations, on average, they have 53.68% of voting rights and only 36.63% of cash-flow rights. Since the three largest shareholders have more voting rights than cash-flow rights independent of their identity (except by Government as second largest shareholder), dominant shareholders may also rely on the complicity of blockholders to expropriate minority shareholders. However, from Table 2.4 Panel A, there are only 629 cases where the second largest shareholder is a corporation. There is also a chance that some of the 772 dominant shareholders in the corporation category do not have a second largest shareholder to deal with or that when it exists it is not also a corporation. In this case, communication and collusion for expropriation may be more difficult. Note that Table 2.4, Panel A refers to the entire sample. For example, there are 201 third largest shareholders in the category Institutional Investor which may correspond or not to a dominant shareholder in the same category (191 observations). It may well be the case that many of the 201 third largest shareholders have not a dominant shareholder in the same category. The impact of blockholders as monitors for the dominant shareholders is studied in the analysis of this and subsequent chapters. Laeven and Levine (2008) also explore how the identities of the parties affect their behavior assuming monitoring roles or colluding to expropriate minority shareholders.

## 2.3 EMPIRICAL DESIGN

The rich structure of the ownership database allows, as an additional contribution, a time series and cross-sectional analysis for years 2000 to 2006 as opposed to previous corporate governance studies which have been constrained to cross-sectional data. A panel data approach brings larger samples, more information and richer data that reflect the effects of time and market dynamics. Some firms are dropped from the sample when acquired or go bankrupt while others are included when they enter the market and are listed. Thus the panel is unbalanced. Forcing the panel to be balanced would introduce additional selection biases and would discard valuable information. This is one the first corporate governance studies to apply panel data techniques to a set of firms in different emerging countries[5].

When the ordinary least squares (OLS) approach is applied to a panel of data, the variance matrix based on independent and identically distributed (iid) errors may be inadequate since the error terms for a given firm are likely to be correlated over time. First, assuming homoskedastic disturbances I perform Breusch-Pagan (1980) Lagrange multiplier (LM) tests for firm specific effects (not reported), and the pooled OLS specification is rejected due to the presence of unobserved heterogeneity. Unobserved heterogeneity refers to unobserved individual firm effects which are embedded in the omitted random variables and potentially correlated with the regressors. The omitted variables represent a form of model misspecification which could introduce endogeneity problems. The choice of how to compute the regression coefficients rests between a

[5] See also Gottesman *et al.* (2007) for emerging markets, Jog, Zhu and Dutta (2008) for Canadian TSX firms, Himmelberg, Hubbard and Palia (1999) for Compustat firms, and La Porta, Lopez-De-Silanes, Shleifer, and Vishny (2002) which separates civil law and common law countries.

Random effects and a Fixed effects specification. The random effects specification relies on the strong assumption that the unobserved firm specific effects are uncorrelated with all the regressors while the fixed effects specification allows for unspecified forms of covariance. However, with the fixed effects specification the coefficients of time-invariant regressors are not identified. Second, with the presence of unobservable heterogeneity established, I use a Hausman (1978) type test to distinguish between random and fixed effects. Under the null hypothesis of the test both the random effects estimator and the fixed effects estimator are consistent but the random effects estimator is efficient; thus any difference in the estimated variance is due to sampling error. Under the alternative hypothesis the random effects estimator is inconsistent. The test statistic is $\chi^2$ distributed with degrees of freedom equal to the number of time-varying regressors. A large test statistic rejects the null hypothesis for given confidence levels. The test (unreported) rejects the random effects specification.

The fixed effects specification, which is retained, allows for disturbances that are heteroskedastic and autocorrelated across time for each firm, but uncorrelated across firms. However, the Driscoll and Kraay (1998) approach allows for standard errors which are robust to general forms of cross-sectional and temporal dependence. This spatial correlation may compensate for the restrictions to directly control for country or industry effects under the fixed effects specification. Moreover, the ownership concentration and interconnectedness of firms in the Latin American sample described in Figure 1.2 suggest contemporaneous cross-sectional correlations for the disturbances. The Driscoll and Kraay (1998) covariance estimator is implemented in Stata for pooled and fixed effects (within) regression. Driscoll and Kraay (1998) use a GMM estimator in which the

orthogonal conditions have been averaged across firms in each year. Then a consistent estimator of the variance is computed using Newey-West (1987) spectral density matrix estimation techniques. The structure of standard errors for coefficient estimates is assumed to be heteroskedastic, auto correlated up to lag (T-1=6), and possibly correlated between firms. Along with the within regression estimates, I also report the pooled regressions estimates to directly account for country effects through dummy variables.

The purpose of the regression analysis is to provide evidence of the market anticipation of a potential conflict of interest between shareholders in a highly concentrated market. Investors assess managerial ability along with the appetite of dominant shareholders for extracting large benefits of control. In addition, blockholders may influence the firm performance. I regress a proxy for firm value (Tobin's Q) on several ownership variables which characterize the identity and holdings of dominant shareholders. Dominant shareholders may have both the capability and the incentive to expropriate minority shareholders. The capability to expropriate hinges on the percentage of voting rights held by dominant shareholders (TOP1VR). Large holdings by dominant shareholders reduce the likelihood for outside blockholders to stand up and challenge managerial and strategic decisions. To determine the incentive to expropriate I compute two alternative measures of the discrepancies between voting rights and cash-flow rights, to investigate the robustness of the results. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. The larger the difference, the greater the incentive for expropriation. Similarly, RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights held by dominant shareholders. The larger the ratio, the lower the incentive

for expropriation. In the regression analysis of firm performance the coefficient estimates are expected to have opposite signs for the GAP1 and the RAT1 specifications. CFCON1 is a dummy variable that takes the value of 1 if dominant shareholders are family groups or corporations, and zero otherwise.

Given the large potential for private consumption, I also explore the motivations for outside investors to participate in the financing of the firms' activities and their potential for monitoring or colluding with dominant shareholders. Since blockholders in both the Family and Corporation categories have are a priori tendencies to collude and expropriate minority shareholders, I analyzed their effect on firm value both individually and aggregating their votes. For space considerations, I report only the results when their votes are aggregated since preliminary results suggest that indeed they have similar effects. Moreover, Table 2.4, Panel A shows a proportion of corporations among the three largest shareholders that is higher than in other samples. If the limitations of the database were overcome many corporations may result to be family controlled, by some of the families already identified of by new ones. Thus, the analysis results would not be biased by these assumptions and aggregation of votes. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. BHS is the sum of the percentage of voting rights held by all blockholders within the family and corporation categories, excluding dominant shareholders. BHD is an indicator variable equal to 1 if an aggregated blockholder exists, as defined by BHS, and zero otherwise. INSOWN is the percentage of voting rights held by institutional investors excluding dominant shareholders and GOVOWN is the percentage of voting rights held by governments excluding dominant

shareholders. Since institutional investors and governments have similar a priori behavior oriented towards monitoring dominant shareholders I also aggregate their votes. CIGOWN = INSOWN + GOVOWN is the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders.

The specification of the regressions includes year dummies, and for the pooled regressions, country dummies. I use country dummies to capture differences in sovereign risk, political risk, operation of financial markets, regulatory environments and corporate governance approaches. The country and year of comparison are Brazil and 2000 respectively. I control for differences in firm size calculated as the natural logarithm of Total assets (LSIZE); leverage levels computed as Total liabilities divided by Total assets (Leverage), and idiosyncratic risk as measured by the standard deviation of monthly stock price returns over the previous 24 months (Volatility). With very few firms paying dividends, stock price return volatility is a consistent measure of idiosyncratic risk

## 2.4 RESULTS

Table 2.5 provides the correlation matrix of the variables in the regression analysis. The negative correlations between dominant shareholders' voting rights and blockholders' voting rights ($\rho$ range between -0.6090 and -0.1250) are indications of the ownership concentration in these markets as shown in Figures 1.1 and 1.2 since blockholders can only buy shares left by dominant shareholders. The negative correlation involving dominant shareholders' discrepancies between voting rights and cash-flow rights and blockholders' voting rights ($\rho$ range between -0.3158 and -0.0711) reflect the resistance from blockholders to invest in firms with large potential for private

consumption by dominant shareholders. Finally, the potential monitoring role for blockholders is indicated by the positive correlation coefficient between firm value and voting rights for blockholders ($\rho$= 0.0608).

The analysis is conducted over alternative ownership concentration measures, to investigate the robustness of the results. In particular I do not use sub-sample techniques to run robustness tests, because the database is already small, and proper filters were used to remove outliers and invalid data points, thus all the remaining data contain valuable information. Tables 2.6, 2.7 and 2.8 provide regression results for alternative model specifications and variable definitions. In addition, each table presents two sets of results: the OLS and the within (fixed effects) coefficient estimates. In Table 2.6, the dependent variable is the percentage of voting rights held by dominant shareholders (TOP1VR) which represents the capability to expropriate minority shareholders. In Tables 2.7 and 2.8, the dependent variables are the two alternative measures of the discrepancies between voting rights and cash-flow rights for dominant shareholders (GAP1 and RAT1 respectively) which represent the incentive to expropriate minority shareholders. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights held by dominant shareholders. Laeven and Levine (2008) also present results based on both differences and ratios of voting rights /cash-flow rights.

The negative and significant estimated coefficients of TOP1VR and GAP1, in Tables 2.6 and 2.7 indicate the pessimism of market participants about high ownership

concentration. Consistently, the cash-flow rights/voting rights ratio (RAT1) is positively related to firm value in Tables 2.6 and 2.8. Since asset diversion is inefficient, market participants seem to appreciate that dominant shareholders accumulate cash-flow rights thereby reducing their incentive for private consumption. The results are consistent with those in Lins (2003), who concludes that the costs of the private consumption are capitalized into share prices in emerging markets. He shows that firm value declines as the separation of management groups' control and cash-flow rights increases. Claessens *et al.* (2002) also find that firm value falls when control rights exceeded cash-flow rights for dominant shareholders.

The positive estimated coefficients of CFCON1, suggests that despite high ownership concentration, market participants prefer dominant shareholders which are family groups or corporations as opposed to institutional investors or governments. The limited confidence towards institutional investors as effective managers or monitors may reflect the small weight on the total portfolio represented by the stake on the firm. Therefore, despite the difficulty for institutional investors to divert funds away from the firm, the managers may have more freedom for decision making and returning to traditional forms of conflict of interest. Similarly, firms dominated by governments may pursue political agendas, not in line with shareholder wealth maximization, and are more difficult to discipline. However, Durnev and Guriev (2008) suggest that state ownership reduces the risk of government expropriation, thus reducing the incentive to hide earnings and liquid assets that could be seized, increasing overall corporate governance.

The positive (but not always significant) estimated coefficients of TOP2_3 and

BHS in Tables 2.6, 2.7 and 2.8 indicate that blockholders may exercise effective monitoring and collaborate with dominant shareholders providing managerial expertise and access to product markets rather than colluding with dominant shareholders to expropriate minority shareholders. This result is consistent with the findings in Lins (2003) who obtains evidence that large non-management blockholders can reduce the valuation discount associated with expected managerial agency problems thereby acting as a partial substitute for missing institutional governance mechanisms. Although McConnell and Servaes (1990) can not reject the conjecture that blockholders and insider ownership operate in conjunction, their results, however, do suggest that institutional ownership reinforces the positive effects of insider ownership on corporate value (efficient monitoring hypothesis). However, the influence of blockholders is conditioned by their identity and only family groups and corporations have positive effects on firm value. Moreover, the effects on firm value are characterized by the size of their stake in the firm. The mere presence of a potential monitor is not sufficient to increase market confidence, as indicated by the insignificance of the estimated coefficients of BHD. Laeven and Levine (2008) also find a monitoring role for blockholders. Specifically, they show that many publicly listed firms in Europe have multiple large owners and that less disperse cash-flow rights increase the incentive for blockholders to monitor dominant shareholders.

In addition, the role of institutional investors and governments as efficient monitoring agents is questioned by the negative and often insignificant estimated coefficients of CIGOWN, INSOWN and GOVOWN in Tables 2.6, 2.7 and 2.8. They are perceived not only as poor monitors, but also as potential obstacles to pursuing

investment projects with positive net present value, because they would be extra-conservative, extremely risk averse, and would lengthen vital decision making processes. On the other hand, the positive estimated coefficients of Leverage point to an increased monitoring role by creditors since firms with high levels of debt pre-commit to use cash-in-hand to repay short term liabilities thereby reducing the risk of asset diversion (Jensen, 1986). Moreover, the results indicate that incurring more debt would be perceived as a value creating strategy since it facilitates investment and sustainable growth. These findings are not without controversy since other authors find a negative effect of debt on firm value, but those papers analyze firms in developed countries.

## 2.5 CONCLUDING REMARKS

I find that in a context of weak protection for minority shareholders, and high ownership concentration, a discount is imposed on the value of firms in which the voting rights of dominant shareholders exceed their cash-flow rights. However, the valuation discount is mitigated when dominant shareholders are family groups or corporations rather than institutional investors or governments. Such a preference may reflect managerial expertise, efficiency and/or enhanced access to product markets. The evidence suggests that the stock market discount is also lower when other family groups and corporations assume monitoring roles similar to that of creditors. On the other hand, institutional investors and governments are not perceived as efficient corporate monitors. Collusion between blockholders and dominant shareholders for the purpose of extracting private benefits, to the detriment of minority shareholders, is not evident.

## Chapter 3

# SUBSTITUTABILITY VS. COMPLEMENTARITY AMONG CORPORATE GOVERNANCE MECHANISMS IN LATIN AMERICA

Emerging economies are typically characterized by weak shareholder protection and highly concentrated ownership structures which are relatively stable over time. With concentrated ownership, the conflict of interest shifts from the principal-agent problem to a dominant-minority shareholder focus. Therefore, assuming that the managers behave in the interest of dominant shareholders as in La Porta, Lopez-de-Silanes, Shleifer and Vishny (2002), dominant shareholders may take advantage of inside information, in the pursuit of their personal strategies and objectives which sometimes collide with those of minority shareholders. The conflict of interest between shareholders is characterized as the potential for asset diversion from the firm to dominant shareholders, reducing overall firm value. Dominant shareholders may reduce their proportional share of the costs of private consumption by widening the discrepancies between voting rights and cash-flow rights. The separation of ownership and control allows investors to diversify their portfolios, and permits firms to reach a large investor base, thereby lowering the cost of future capital. However, the delegation of control causes anxiety to investors who implement strategies to align the interests of dominant shareholders with their own interests.

Investors channel their monitoring efforts primarily through elected boards of directors. Ideally, external forces originated by competition in product markets and markets for corporate control interact to discipline dominant shareholders. Recently, under reinforced market regulation and with rising shareholder activism, pension funds

and mutual funds have increased efforts to exercise influence over dominant shareholders. Any individual corporate governance mechanism may fail in given circumstances. Market regulation is ineffective if its scope is too narrow or its provisions are feeble or out-of-date, and the rule of law is not enforced. The board of directors may be captured by dominant shareholders, may have too many or too few members, or appoint directors who are under trained or too busy. Weak boards may fail to provide adequate compensation for both executives and board members to redistribute wealth to shareholders. Monitoring by creditors and market regulators helps reduce the temptation for asset diversion. However, increased disclosure may impose additional costs on the firm not offset by the access to an alternative source of funding. When external financial markets are incipient, nonexistent, or too expensive in terms of interest rates and excessive monitoring privileges to creditors, equity represent the remaining source to finance investment opportunities not covered by internally generated funds. Blockholders are also potentially subject to expropriation; alternatively blockholders could collude with dominant shareholders to share a portion of the private benefits.

Several authors have suggested the endogenous nature of a number of corporate governance mechanisms. In particular the endogeneity of ownership structures and firm performance has been emphasized (Himmelberg, Hubbard and Palia, 1999; Demsetz, and Villalonga, 2001; Lins, 2003; Bhagat and Bolton, 2007) and consequently, I propose a simultaneous equations system to analyze the complex interrelations between corporate governance mechanisms extending the work of Agrawal and Knoeber (1996) and Switzer (2007) to an environment of a priori weak shareholder protection (La Porta, Lopez-de-Silanes, Shleifer and Vishny, 1998).

To minimize the negative effects of ownership concentration on firm value, Latin American firms resort to a number of different corporate governance mechanisms that are complements rather than substitutes. I find that while a discount is imposed on the value of firms due to the separation of ownership and control, blockholders detached from dominant shareholders assume monitoring roles and help curtail asset expropriation. Although multiple-class shares are common in some countries, firms with single-class shares are highly valued by market participants. I also find that Latin American firms are underleveraged and that the benefits and costs imposed by the passing of the Sarbanes-Oxley act in 2002 have already been incorporated in other governance mechanisms. Beyond the large potential for private consumption, concentrated ownership may be prescribed in dynamic competitive environments. It may be a surviving strategy when shareholder protection is weak. I explore the motivations for outside investors to take large stakes to finance the firms' activities while facing expropriation, illiquidity and under diversification risks

## 3.1 LITERATURE REVIEW

In the literature review section the original terminology is maintained when discussing the relation between this work and published papers. Some authors use the same expressions to refer to different concepts; in other cases similar concepts are denoted by different names. In contrast, accounting expressions are unequivocally exact. In general, each author addresses different concepts related to ownership structures using ad-hoc expressions that reflect the limitations of data availability. Therefore, for the literature review section I maintain the original word choice from the authors, and in

subsequent sections and in the next chapter I consistently use my own terminology to represent detailed ownership structures, as in the preceding chapter and the introductory chapter.

Agrawal and Knoeber (1996) find interdependence among several control mechanisms for agency problems between managers and shareholders, in a sample from 1987 including 383 large US firms. Using a simultaneous equations system, they find that the number of outside directors is not optimal. Conversely other control mechanisms: insider ownership, institutional ownership, ownership of blockholders, debt, the market for managerial talent and the market for corporate control are found to be used at the optimal level.

Lins (2003) is concerned about the endogenous relation between ownership and firm value which voids making inferences about causality (firm value is lower as a result of expected costly agency problems/if a manager expects lower cash-flow he would tend to increase the discrepancies between his voting rights and cash-flow rights). He uses two-stage least squares regressions to account for endogeneity between ownership and firm value with the valuation equation in the structural model and the ownership equation in the first-stage model. He finds that after controlling for simultaneity, firm value is lower when managers' control exceeds ownership, and firm value is higher when the control rights of blockholders increase. However, the author also finds evidence of simultaneity with blockholders more likely to own control rights in highly valued firms, for his sample of 830 observations from 18 emerging economies in 1995.

Switzer (2007) studies the simultaneous interactions between alternative

governance mechanisms and the value of small publicly-traded firms in Canada from 1997 to 2004. He finds that firms cross-listed in the US, have higher market value after the Sarbanes-Oxley Act was passed into law. Most of the corporate governance mechanisms are found to be substitutes. However, a disciplinary role is reserved for the market for corporate control. In contrast, those firms seem to use an excess of costly debt obligations which negatively affects firm value.

Bhagat and Bolton (2007) analyze the relation between corporate governance, capital structure, ownership structures and firm performance for a sample of CRSP firms from 1999 to 2004. They use governance indexes, which by construction separate "good" and "bad" governance practices; a legitimate approach that nonetheless significantly differs from mine. I use a number of measures for corporate governance mechanisms in the raw form. The results of the analysis indicate whether they affect firm value in a positive or negative way, or not at all. At the optimal level the marginal benefits of using a governance mechanism just offsets the marginal costs. Consequently the results suggest whether a given mechanism is used in excess, not enough or just up to the optimal level by firms in the sample. Taking into account endogeneity problems, the formulation by Bhagat and Bolton (2007) shows significant correlation between corporate governance measures and contemporaneous and subsequent operating performance, but not correlation with stock market performance.

## 3.2 CHARACTERISTICS OF GOVERNANCE MECHANISMS

In this chapter I analyze the effects of the discrepancies between voting rights and cash-flow rights for dominant shareholders and other governance mechanisms on firm value. The level of some governance mechanisms, such as takeover activity is determined externally to the firm. Internally chosen mechanisms, such as the ownership of dominant shareholders are selected to offset environmental mechanisms (Switzer, 2007). Some mechanisms may not look individually optimal but they would be collectively optimal. The costs of changing the ownership of dominant shareholders may exceed the benefits and it may be optimal to maintain control of the firm. Therefore, other governance mechanisms adjust to maximize firm value. For example, cross-listing firms that opt for Level II or Level III ADR publicly listed programs are subject to high disclosure requirements. Similarly, debt financing increases outside monitoring. Both mechanisms may be used by dominant shareholders to pre-commit not to expropriate minority shareholders.

In the introductory Chapter 1, departing from previous literature, I propose a detailed analysis of the identity of each shareholder. Voting rights and cash-flow rights are therefore aggregated only at the core of identified business groups. Then, the effects of ownership concentration on firm value are documented in Chapter 2. In this chapter, I offer additional contributions to the advancement of the literature. In addition to the measures for ownership structures, I compute a number of governance mechanisms in great detail for the Latin American sample including firm leverage, measures for takeover activity, board size, cross-listing, single/multiple-class shares, board independence, and the dual role of the CEO as chairman of the board. Then I analyze their collective effects

on firm value and their mutual interactions; controlling for firm characteristics such as firm size, stock price returns volatility, country effects and industry effects. The sample in this chapter is necessarily smaller with respect to that used in Chapter 2 because when I compute TOBINLAG the lag values of Log(Tobin's Q), early observations including all data from year 2000 are lost. In addition, to calculate the governance mechanism measures some observations are sacrificed due to data unavailability. The database used for the analysis in this chapter consists of 935 observations; there is not data for Colombia from 2006 nor data for Venezuela from 2002 (see Table 3.1).

Dominant shareholders may have both the capability and the incentive to expropriate minority shareholders. The capability to expropriate hinges on the percentage of voting rights held by dominant shareholders. The discrepancies between voting rights and cash-flow rights create an incentive for dominant shareholders to expropriate minority shareholders. I compute two alternative ownership concentration measures to investigate the robustness of the results. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. The larger the difference, the greater the incentive to expropriate minority shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights. The larger the ratio, the lower the incentive for expropriation. In the regression analyses of firm performance the coefficient estimates are expected to have opposite signs for the GAP1 and the RAT1 specifications. CFCON1 is a dummy variable that takes the value of 1 if dominant shareholders are family groups or corporations and zero otherwise. Blockholders are also potentially subject to expropriation; alternatively and depending on their identities blockholders could collude with dominant shareholders to share a portion

of the private benefits. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. CIGOWN is the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders.

Firm leverage is computed as Total liabilities divided by Total assets (Leverage). I compute takeover activity (PACQ) as the fraction of acquisition deals announced, for targets in the same industry over the past five years, in five countries of the region (Brazil, Chile, Colombia, Peru, and Venezuela - see Table 3.1). Cross-listed firms have at least one related equity security traded in US stock exchanges subject to minimum liquidity constraints. Liquidity is measured as the average standard deviation of monthly stock price returns, for the previous 24 months for all the US equity securities related to the firm-year observation. In Table 3.2, the dummy variable CLISTING equals 1 for only 40% (381out of 935)[6] of the observations, and equals 0 for firms without liquid related equities, for missing data and for related securities with null standard deviation for the monthly returns, as well as for the six cases in which the average standard deviations exceed 600%. Of these 73% are subject to increased disclosure which creates a more comfortable environment for global investors seeking portfolios diversification in emerging markets (Level II or Level III ADR publicly listed programs). High disclosure requirements are not bonding for unlisted over-the-counter Level I ADR programs and private placements under Rule 144A. However, only Level III and Rule 144A (42% of cross-listing) offer access to US primary capital markets while Level I and Level II allow access only to US secondary markets. In Figure 3.1, cross-listing observations include

[6] Other papers (see out-of-sample tests in Ellul, Guntay, and Lel, 2007; Boubakri, Cosset and Samet, 2008) study exclusively those firms with ADRs.

Level III ADR programs (31%), Level II ADR programs (42%), as well as OTC Level I programs (16%) and private placements under Rule 144A (11%). In Doidge, *et al.* (2006) 50% of the Latin American observations correspond to cross-listed firms and 38% of these correspond to exchange listings. In the Latin American sample in Boubakri, Cosset and Samet (2008) 40% of the 76 ADR observations correspond to exchange listing programs. Thus, the Latin American database used in this work includes a larger proportion of exchange listing programs than previous published research. Nevertheless the CLISTING variable does not distinguish between public listing and unlisted programs. Since the inception of the Sarbanes-Oxley act in 2002 the regulatory framework of financial markets has been upgraded and subsequently US stock exchanges have tightening listing requirements. A dummy variable (SOA) equals 1 for years after 2002, and 0 otherwise. Both SOA and the interaction term CL_SOA = CLISTINGxSOA between SOA and CLISTING are included to account for the costs and benefits of additional disclosure requirements. Since voting shares float less than non-voting shares I also compute a dummy variable which equals 1 for firms with single-class shares (SHRRTS) and 0 for firms with multiple-class shares as a measure for market monitoring (see Table 3.3).

Analyzing data from five Latin American emerging economies I provide evidence of the relative stability over time of corporate governance mechanisms. In Table 3.4, I show the average coefficient of variation for a set of corporate governance mechanisms and firm characteristics in the sub-sample of publicly traded firms with multiple observations from 2001 to 2006. Panel A shows variables that remain constant for more than 50% of the firms; on average, the standard deviation is lower than the mean value of

the governance variable. For example non-floating shares are owned by named identified blockholders, as opposed to floating shares which are owned by unnamed anonymous atomistic minority shareholders. Since floating shares are scarce I compute dummy variables for firms with floating voting shares (Flotav) and for firms with floating non-voting shares (Flotanv). Out of 198 firms, only 4 firms, issue or retire non-voting shares during the period of analysis. Similarly, only 23 firms issue or retire voting shares. Both these changes represent rational capital restructuring strategies initiated by dominant shareholders. The firm repurchases all floating shares along with some non-floating shares from dominant shareholders. Alternatively, the firm issues new shares, at the same time dominant shareholders sell a portion of their holdings to the public. Under both strategies, trading by dominant shareholders can be concealed by the capital restructuring of the firm. In contrast, the variables shown in Panel B fluctuate over time in most or all the firms, but the variations are small; on average the standard deviation is lower than twice the mean value. The corporate governance mechanisms under analysis in Table 3.4 are further classified as firm specific characteristics (Firm) or industry characteristics (Ind.). All the industry characteristics are determined externally to the firm (Ext.). Some firm specific characteristics may be decided internally (Int.) by dominant shareholders, both during the initial design of the firm or during current operations. However, firm specific characteristics may also be externally determined (Ext.) by other stakeholders partially influenced by the decisions of dominant shareholders. In addition to the distinction between firm specific characteristics decided internally or externally, I classify corporate governance mechanisms as endogenous variables or predetermined variables. Predetermined variables are independent of current and future disturbances.

Lagged endogenous variables as well as current and lagged exogenous variables can be used as predetermined variables. The levels of endogenous governance mechanisms are chosen taking into account the interaction with given levels of other governance mechanisms and firm characteristics which are possible out of the control of the decision maker (internal or external to the firm). For example, dominant shareholders control the firm and decide whether the firm issue multiple-class shares, and how many shares of each class to retain. Indirectly dominant shareholders decide how many shares are left for other investors in the market. However, they can not directly decide the number of blockholders, their holdings, or their identities. Blockholders have more flexibility than dominant shareholders. Blockholders decide on the size of their stakes in the firm but are constrained by the holdings of other shareholders including dominant shareholders. In summary, the low variability of the corporate governance mechanisms that correspond to firm specific characteristics internally decided supports the assumed invariability of the number of board members (BSIZE), the number of insider board members (officers of the firms and family, family of founder), and the dual role of the CEO as chairman of the board (DUAL); variables for which data is available only for the 117 observations from 2006. In addition, missing values are replaced with year-industry averages. Board independence (BIND) is calculated as 1 - (the number of insider board members) divided by (the number of board members).

Firm size is calculated as the natural logarithm of Total assets (LSIZE) and the firm's internal volatility is measured by the standard deviation of monthly stock price returns over the previous 24 months (Volatility). In addition, to account for strict regulatory constraints I assign dummy variables to firms in the Utilities and Financial

industries. Similarly, I assign a dummy variable to firms in the Mining industry to account for the high volatility of commodity prices. Finally, country dummies capture differences in economic development, market size and overall corporate governance practices. The omitted country dummy corresponds to Brazil, the largest economy in the region.

## 3.3 EMPIRICAL DESIGN AND MODEL DEVELOPMENT

Several authors have underlined the endogeneity of ownership structures and firm performance (Himmelberg, Hubbard and Palia, 1999; Demsetz, and Villalonga, 2001; Lins, 2003; Bhagat and Bolton, 2007). In this chapter, I propose a simultaneous equations system to analyze the complex interrelations between corporate governance mechanisms extending the work of Agrawal and Knoeber (1996) and Switzer (2007) to an environment of a priori weak shareholder protection (La Porta, Lopez-de-Silanes, Shleifer and Vishny, 1998). The construction of the system follows the results of previous work, embraces parsimony precepts, and is constrained by the data available[7] and identification conditions. The six equations system consists of one equation for the discrepancies between voting rights and cash-flow rights for dominant shareholders (1), an ownership equation for the second largest shareholder (2), an ownership equation for institutional investors and government blockholders (3), a board independence equation (4), a leverage level equation (5) and a firm value equation (6). In the following notation the first sub index of estimated coefficients represents the local variable and the second

[7] For example data on managerial compensation is unavailable, which may be justifiable by the high political risk and criminality in some countries. Shareholders would accept less disclosure to protect executives from kidnapping. In addition, intangible assets, capital expenditures, advertising expenditures and research and development expenditures are usually not reported by non-US firms because of their negligible amounts (Himmelberg, Hubbard and Palia, 1999; Holderness, 2007)

sub index denotes the equation number.

Equation for the discrepancies between voting rights and cash-flow rights for dominant shareholders:

$$OWN = \alpha_1 + \beta_{1,1}*BIND + \beta_{2,1}*CFCON1 + \beta_{3,1}*LSIZE + \beta_{4,1}*PACQ + \beta_{5,1}*Volatility + \beta_{6,1}*CLISTING + \beta_{7,1}*LAMBDA + \beta_{8,1}*SOA + \beta_{9,1}*CL\_SOA + \beta_{10,1}*DUAL + \beta_{11,1}*SHRRTS + \beta_{12,1}*Mining + \beta_{13,1}*Financial + \beta_{14,1}*Utilities + \varepsilon_1 \quad (1)$$

Ownership equation for the second largest shareholder:

$$TOP2\_3 = \alpha_2 + \beta_{1,2}*OWN + \beta_{2,2}*CIGOWN + \beta_{3,2}*BIND + \beta_{4,2}*Leverage + \beta_{5,2}*LSIZE + \beta_{6,2}*PACQ + \beta_{7,2}*Volatility + \beta_{8,2}*SOA + \beta_{9,2}*CL\_SOA + \beta_{10,2}*Mining + \beta_{11,2}*Financial + \beta_{12,2}*Utilities + \varepsilon_2 \quad (2)$$

Ownership equation for institutional investors and government blockholders:

$$CIGOWN = \alpha_3 + \beta_{1,3}*OWN + \beta_{2,3}*TOP2\_3 + \beta_{3,3}*BIND + \beta_{4,3}*Leverage + \beta_{5,3}*LSIZE + \beta_{6,3}*PACQ + \beta_{7,3}*CLISTING + \beta_{8,3}*LAMBDA + \beta_{9,3}*SOA + \beta_{10,3}*CL\_SOA + \beta_{11,3}*NINSTI + \beta_{12,3}*Mining + \beta_{13,3}*Financial + \varepsilon_3 \quad (3)$$

Board independence equation:

$$BIND = \alpha_4 + \beta_{1,4}*OWN + \beta_{2,4}*TOP2\_3 + \beta_{3,4}*CIGOWN + \beta_{4,4}* CFCON1 + \beta_{5,4}*LSIZE + \beta_{6,4}*PACQ + \beta_{7,4}*CLISTING + \beta_{8,4}*LAMBDA + \beta_{9,4}*SOA + \beta_{10,4}*CL\_SOA + \beta_{11,4}*BSIZE + \beta_{12,4}*DUAL + \beta_{13,4}*SHRRTS + \varepsilon_4 \quad (4)$$

Leverage level equation:

$$Leverage = \alpha_5 + \beta_{1,5}*OWN + \beta_{2,5}*BIND + \beta_{3,5}*LSIZE + \beta_{4,5}*PACQ + \beta_{5,5}*Volatility + \beta_{6,5}*CLISTING + \beta_{7,5}*LAMBDA + \beta_{8,5}*SOA + \beta_{9,5}*CL\_SOA + \beta_{10,5}*TOBINLAG + \beta_{11,5}*SHRRTS + \beta_{12,5}*Mining + \beta_{13,5}*Financial + \beta_{14,5}*Utilities + \beta_{15,5}*Chile + \beta_{16,5}*Colombia + \beta_{17,5}*Peru + \beta_{18,5}*Venezuela + \varepsilon_5 \quad (5)$$

Firm value equation:

$$TOBINQ = \alpha_6 + \beta_{1,6}*OWN + \beta_{2,6}*TOP2\_3 + \beta_{3,6}*CIGOWN + \beta_{4,6}*BIND + \beta_{5,6}*Leverage + \beta_{6,6}*PACQ + \beta_{7,6}*Volatility + \beta_{8,6}*CLISTING + \beta_{9,6}*LAMBDA + \beta_{10,6}*SOA + \beta_{11,6}*CL\_SOA + \beta_{12,6}*BSIZE + \beta_{13,6}*DUAL + \beta_{14,6}*SHRRTS + \beta_{15,6}*Chile + \beta_{16,6}*Colombia + \beta_{17,6}*Peru + \beta_{18,6}*Venezuela + \varepsilon_6 \quad (6)$$

In equation (1), to investigate the robustness of the results, I use two alternative

measures of (OWN) the discrepancies between voting rights and cash-flow rights for dominant shareholders: GAP1 and RAT1. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights. When the voting rights exceed their cash-flow rights, the incentive for asset diversion is amplified. In the following paragraphs, the expected signs of estimated coefficients are analyzed for OWN=GAP1 as a measure of the separation of ownership and control (for OWN=RAT1 the estimated coefficients are expected to have the opposite sign). Independent boards of directors make asset diversion more difficult, making excess voting rights over cash-flow rights of less interest for dominant shareholders as a means to expropriate minority shareholders. A negative coefficient of BIND is expected. Family groups and corporations as dominant shareholders would tend to hold more voting rights than cash-flow rights to take advantage of opportunities to expropriate minority shareholders. A positive coefficient of CFCON1 is expected. Nenova (2003) suggests that large firms are subject to greater scrutiny, which would increase the costs of extracting private benefits. In this case, dominant shareholders have a weak incentive to hold more voting rights than cash-flow rights in large firms. However, large firms also have fewer growth opportunities (Claessens *et al.*, 2002) thus more assets under control increase the prospects for private consumption and dominant shareholders have a strong incentive to hold more voting rights than cash-flow rights. If the Nenova's (2003) argument prevails, a negative coefficient of LSIZE is expected. In industries with low takeover activity (as in most Latin American markets-see Table 3.1) dominant shareholders increase the excess voting rights over cash-flow rights since the risks of

losing control due to disciplinary takeovers are low, and engaging in asset diversion is relatively safe. A negative coefficient of PACQ is expected. When the stock market is unfavorable, expropriating minority shareholders increases the return on investment for dominant shareholders. Thus, dominant shareholders tend to increase the excess voting rights over cash-flow rights in firms with volatile stock prices or volatile output markets. Positive coefficients of both Volatility and Mining are expected. Doidge, *et al.* (2006) show that when private benefits are high, firms are less likely to cross-list in the US, because the high standards of transparency and disclosure and increased monitoring, but they do not find an effect for OTC, Rule 144A or London listings. Similarly, Lel and Miller (2008) find a significant relation between CEO turnover and firm performance for firms with Level II and Level III ADR programs, but not for Level I, Rule 144A and listings in London. A negative coefficient of CLISTING is expected. When the CEO is also the chairman of the board, dominant shareholders opportunistically expropriate minority shareholders using multiple-class shares to increase the excess voting rights over cash-flow rights. Thus, a positive coefficient of DUAL and a negative coefficient of SHRRTS are expected.[8] Dominant shareholders tend to decrease the excess voting rights over cash-flow rights in any firm subject to strict regulatory constraints. On the other hand, operating in regulated environments requires strong negotiation bases. The signs of the coefficients of Financial and Utilities are of an empirical question.

TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. In equation (2),

[8] Li, Ortiz-Molina and Zhao (2007) find that institutional ownership in dual-class firms is significantly lower that in single-class firms in the US. However, institutional investor could build up voting power to influence corporate decisions. In contrast, getting involved in corporate governance results too expensive for individual investors, thus they place little value on voting rights.

TOP2_3, OWN and CIGOWN are closely related because blockholders can only buy shares left by dominant shareholders and institutional investors and government blockholders. When dominant shareholders have voting rights in excess of cash-flow rights blockholders take small positions on the firms' stock to reduce their exposure to expropriation. Thus, negative coefficients of both OWN and CIGOWN are expected. Independent boards of directors boost investor confidence and induce blockholders to take large positions on the firms' stock. A positive coefficient of BIND is expected. Dominant shareholders prefer debt over equity to finance firm growth since blockholders make it difficult to control the firm. Thus, little additional equity are issued for blockholders to acquire. In addition, highly leveraged firms are less attractive to blockholders because changes of control are less likely and bankruptcy risks are higher. A negative coefficient of Leverage is expected. Large positions in large firms result in undiversified portfolios for blockholders. In addition, blockholders reduce the holdings in risky firms and firms with volatile output markets. Negative coefficients of LSIZE, Volatility and Mining are expected. However, in industries with active takeover markets blockholders hold more voting rights to capture the premium in eventual changes of control. A positive coefficient of PACQ is expected. Exiting positions in regulated industries is difficult and lengthy because of pre-qualification requirements of the incoming investors. Negative coefficients of both Financial and Utilities are expected.

CIGOWN is the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders. In equation (3), CIGOWN, OWN, and TOP2_3 are closely related because institutional investors can only buy shares left by dominant shareholders and other blockholders. In some cases governments hold

shares remaining from privatization processes. When dominant shareholders have voting rights in excess of cash-flow rights, which signals potential for asset diversion, prudent institutional investors take small positions on the firms' stock. Thus, negative coefficients of both TOP2_3 and OWN are expected. Institutional investors are attracted to firms with more independent boards. A positive coefficient of BIND is expected. Since large shareholdings by institutional investors increase monitoring, dominant shareholders privilege debt over equity leaving little need to issue additional equity. In addition, firms with high bankruptcy risks are less attractive to institutional investors. A negative coefficient of Leverage is expected. Institutional investors are attracted to large firms, for visibility, reputation concerns, cash-flow and dividends stability, as well as to cross-listed firms for their imposed increased disclosure and transparency. Positive coefficients of both LSIZE and CLISTING are expected. In industries with more takeover activity institutional investors hold more voting rights to participate and capture the premium in eventual changes of control. A positive coefficient of PACQ is expected. In addition, institutional investors are attracted to industries in which other institutional investors are also committed. A positive coefficient of NINSTI (the year-industry average number of combined institutional investors and government agencies with voting rights) is expected. Well diversified institutional investors have no reasons to shun any particular industry including regulated industries. They are as concentrated in any industry as the average of the market in the region (see Table 3.5). I have no a priori expectations about the signs of the coefficients of Mining and Financial.

Board independence (BIND) is calculated as 1 - (the number of insider board members) divided by (the number of board members). In equation (4), independent

boards may result from relatively weak dominant shareholders and strong blockholders. A negative coefficient of OWN, but positive coefficients of TOP2_3 and CIGOWN are expected. Moreover, family groups and corporations as dominant shareholders tend, more than others, to capture the board. A negative coefficient of CFCON1 is also expected. Boards remain more independent in larger, more visible firms as well as in cross-listed firms due to imposed increased disclosure and transparency. Positive coefficients of both LSIZE and CLISTING are expected. In industries with active takeover markets, blockholders including institutional investors anticipating potential changes of control tend to gain seats on the board to participate in the merger decisions. A positive coefficient of PACQ is expected. Since large boards have more seats for independent directors, a positive coefficient of BSIZE is expected. A CEO that is also chairman of the board erodes the independence of the board of directors. A negative coefficient of DUAL is expected. Single-class shares increase the ability of minority shareholders to appoint independent directors. A positive coefficient of SHRRTS is expected.

Leverage levels are computed as Total liabilities divided by Total assets (Leverage). In equation (5), dominant shareholders with voting rights exceeding cash-flow rights privilege debt financing over equity, to maintain control. Moreover, they could also attempt to expropriate creditors through risk shifting (Jensen and Meckling, 1976). A positive coefficient of OWN is expected. Independent directors support cost-effective financing; if the access to credit is expensive in these markets they favor equity financing. A negative coefficient of BIND is expected. Large firms as well as cross-listed firms have higher credit ratings and benefit from lower interest rates. Positive coefficients of both LSIZE and CLISTING are expected. In industries characterized by frequent

changes of control, dominant shareholders use debt financing to thwart leverage buy-outs and discourage potential hostile bids. However, pre-committing to debt service deprives dominant shareholders from assets to expropriate. Nevertheless, a positive coefficient of PACQ is expected. Riskier firms face higher interest rates, thus a negative coefficient of Volatility is expected. Since access to favorable interest rates is conditioned to past firm performance, a positive coefficient of TOBINLAG is expected. Multiple-class shares are used to finance future investments without loss of control, reducing the need for debt. Conversely, firms with single-class shares may need to resort to debt financing more frequently. Therefore, a positive coefficient of SHRRTS is expected. Proven reserves of minerals serve to guarantee loans in volatile product markets. A positive coefficient of Mining is expected. Notwithstanding stable cash-flows, firms in regulated industries are subject to constraints on leverage levels. I have no a priori expectations of the coefficient signs of Financial and Utilities. Since access to debt varies from country to country, I use country dummies to capture differences in sovereign risk, political risk, operation of financial markets, regulatory environments and corporate governance approaches.

TOBINQ is the natural logarithm of the Tobin's Q ratio. Tobin's Q ratios are computed as the sum of Total liabilities and Market value of equity divided by Total assets. In equation (6), excess voting rights over cash-flow rights for dominant shareholders signal potential for asset expropriation. Therefore, a valuation discount is imposed and a negative coefficient of OWN is expected. Blockholders, depending on their identity, may challenge dominant shareholders inclined to asset diversion. Positive coefficients of both TOP2_3 and CIGOWN are expected. Independent boards contribute to booster investor confidence and consequently help stock prices rising. A positive

coefficient of BIND is expected. With high levels of debt, firms pre-commit to use cash in hand to repay short term liabilities, reducing the risk of asset diversion (Jensen, 1986). Moreover, high debt may indicate future profitable growth opportunities (Myers and Majluf, 1984). A positive coefficient of Leverage is expected. Active markets for corporate control motivate dominant shareholders to maintain high firm value reducing the risk of hostile takeovers. A positive coefficient of PACQ is expected. Rational investors expect higher returns from riskier firms. Therefore, a positive coefficient of Volatility is expected. Cross-listing expands the investor base and at the same time imposes increased disclosure requirements on the firm, which booster investor confidence. A positive coefficient of CLISTING is expected. Large boards make room for directors with different expertise and perspectives and large business networks. A positive coefficient of BSIZE is expected. The dual role of the CEO as chairman of the board signals poor corporate governance practices and a valuation discount is imposed. However, concentrating power in a single executive provides flexibility for decision making. Therefore, a positive coefficient of DUAL is expected. Voting shares command control premiums over non-voting shares (Nenova, 2003), moreover voting shares are traded almost exclusively during changes of control. With multiple-class shares liquidity is driven by non-voting shares (Valadares and Leal, 2000), and market capitalization artificially shrinks when small numbers of voting shares trade at a discount. A positive coefficient of SHRRTS is expected.

Cross-listing is a not random endogenous decision taken within the firm. Thus, the measures of firm value for cross-listed firms may suffer from self-selection bias (Doidge, Karolyi and Stulz, 2004). Heckman (1979) proposes a two-step method to

correct for selection bias. The first step is a probit regression in which the binary variable suspected of suffering from selection bias is regressed on its determinants. Then, the output from the first step is used to correct for selection bias. The determinants of the decision to cross-list are: firm value measured as the natural logarithm of the Tobin's Q ratio (TOBINQ), the discrepancies between voting rights and cash-flow rights for dominant shareholders [OWN=(GAP1 or RAT1)], a measure of board independence (BIND) which is calculated as 1 - (the number of insider board members) divided by (the number of board members), the leverage level computed as Total liabilities divided by Total assets (Leverage), a measure of firm size calculated as the natural logarithm of Total assets (LSIZE), a measure of takeover activity (PACQ) computed as the fraction of acquisition deals announced, for targets in the same industry over the past five years, in five countries of the region (Brazil, Chile, Colombia, Peru, and Venezuela), idiosyncratic risk as measured by the standard deviation of monthly stock price returns over the previous 24 months (Volatility), the number of board members (BSIZE), an indicator for the dual role of the CEO as chairman of the board (DUAL), an indicator for single/multiple-class shares (SHRRTS), and country dummies. In the second step, the predicted value of the binary variable would be an instrument in the firm value equation, but I interrupt the process at this point. From the first step regression the inverse Mills ratio (LAMBDA) is retained. In every equation of the system in which the dummy variable CLISTING appears the variable LAMBDA is included as an additional regressor to correct for selection bias. This approach is also observed in Jog, Zhu and Dutta (2008) and Smirnova (2008). Two versions of the inverse Mills ratio are computed: LAMBDA1 and LAMBDA2 to be used with the two alternative specifications of OWN: RAT1 and

GAP1 respectively.

If the included endogenous variables are correlated with the disturbances then executing ordinary least squares (OLS) regressions results in biased and inconsistent estimates and instrument variables techniques are recommended. A Hausman (1978) specification test serves to determine whether endogeneity bias is present in the OLS estimates. Under the null hypothesis both the OLS and the two-stage least squares (2SLS) regression methods estimate consistent coefficients, and the OLS estimated coefficients are efficient. Under the alternative hypothesis only the 2SLS estimated coefficients are consistent. The test is performed simplifying each equation to include just one suspect endogenous regressor at the time. Corporate governance mechanisms and firm characteristics from other equations are used as instruments. The test statistic is $\chi^2$ distributed with one degree of freedom. The test results from Table 3.6 suggest that some of the suspected endogenous variables would indeed induce endogeneity bias in the OLS estimates. Therefore, instrumental variables techniques are recommended.

Then, I estimate the coefficients of the six equations using a 2SLS approach in which corporate governance mechanisms and firm characteristics from other equations are used as instruments (results not reported). However, in Table 3.7, the significant correlation coefficients between the residuals estimated from 2SLS regressions suggest that a system estimation approach such as the three-stage least squares (3SLS) should be used instead. The three-stage least squares estimator is a generalized method of moments (GMM) estimator that uses a particular weighting matrix. In a 3SLS approach all identified parameters of the model are jointly estimated using the residuals from 2SLS

estimation in the weighing matrix which allows for possible contemporaneous correlations between the disturbances of different equations. Nevertheless, there is a trade-off between robustness and efficiency when estimating simultaneous equations systems. If all the equations are correctly specified a system estimation procedure (3SLS) is more efficient than a single equation estimation procedure such as 2SLS. However, if one equation in the system is misspecified, the 3SLS coefficient estimates may be inconsistent. Moreover, a 3SLS approach requires the additional assumption that any predetermined variable is predetermined in all equations.

Table 3.8 shows that the necessary order condition for identification is satisfied for each equation. When normalization and exclusion are the only restrictions imposed to the equations, as in this system, the necessary rank condition reduces to the sufficient order condition (Wooldridge 2002, p. 220). Table 3.9 shows the descriptive statistics for the corporate governance mechanisms and firm characteristics used in the regressions. Table 3.10 shows the correlation coefficients between the regressors (both endogenous and predetermined variables) of the equations in the system. The results in Table 3.10 also helped to the model development. For example, since the correlation coefficient between Utilities and NINSTI is 0.5687, to avoid co-linearity problems I have dropped Utilities from the ownership equation for institutional investors and government blockholders - equation (3).

## 3.4 RESULTS

Table 3.11 shows the results from three-stage least square regressions for two specifications of the discrepancies between voting rights and cash-flow rights for dominant shareholders: GAP1 and RAT1. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights. Since the excess voting rights over cash-flow rights amplify the incentive for asset diversion. Latin American firms resort to a number of different corporate governance mechanisms that are complements rather than substitutes, as is revealed by the significance of the coefficients of the firm value equation. In modern theory of the firm, the elasticity of substitution measures the degree to which inputs can be combined in a production function. The flatter the isoquants the easier the substitution between inputs. Moreover, keeping other inputs constant, the solution to the cost minimization problem for a profit maximizing firm occurs when the marginal rate of technical substitution equals the ratio of the prices of the two inputs, for every level of output. For substitute corporate governance mechanisms, non significant estimated coefficients are expected on the firm value equation since they would offset each other. Substitute corporate governance mechanisms are used up to the optimal level and then other available and affordable governance mechanisms take over. With high ownership concentration and low protection for minority shareholders, some governance mechanisms become unavailable or prohibitively expensive. Thus, as in the short run situation, the firm may choose just some but not all inputs optimally. The substitution between inputs becomes more difficult, and the isoquants become more L-shaped. Corporate governance

mechanisms are used as long as they are available or affordable, but they do not necessarily reach an individual optimal. Other governance mechanisms are activated to complement the monitoring or disciplining effects.

There are similarities and differences between the results found in this work and those presented in previously published research. Market characteristics and firm attributes seem to determine the role of corporate governance mechanisms and their interactions with firm value. For example, Agrawal and Knoeber (1996) find interdependence among several control mechanisms for agency problems between managers and shareholders, and optimal use of control mechanisms except by board composition. In addition, Switzer (2007) finds that governance mechanisms appear to be substitutes for small-cap firms, and confirms some evidence of non-optimal deployment. Specifically, he shows that a disciplinary role is reserved to the markets for corporate control in small Canadian firms and that firm leverage is inversely related to performance. From a different perspective, Bhagat and Bolton (2007) show significant correlation between corporate governance measures and contemporaneous and subsequent operating performance, but not correlation with stock market performance. However, Coles, Lemmon and Meschke (2007) suggest that standard econometric remedies to the endogeneity problems may be ineffective. They argue that panel data regression tests lack power because they rely purely on time series variation within firms, and there is very little time series variation in the contracting environment. As for a simultaneous equations approach, they claim that the models are too sensitive to the choice of instruments. They support their claims with simulations based on a structural model of the firm that they calibrate with available data. Nevertheless, the panel data

techniques used in Chapter 2, and the simultaneous equations model used here in Chapter 3, are designed to address endogeneity problems attributed to different sources: unobserved heterogeneity and simultaneity respectively, in the analysis of the ownership-performance relations.

The estimated coefficients of the firm value equation confirm the results from Chapter 2, in which a different approach is used. Therefore, similar results enhance the integrity of the analysis since different econometric designs attack different forms of endogeneity problems. In fact, this is one of the first research works to successfully apply both methodologies to the same sample, given the technical limitations and the data availability constraints. Furthermore, in Chapter 2 firm value is proxied by Tobin's Q ratios defined as the sum of Total liabilities and Market value of equity divided by Total assets while here in Chapter 3 firm value is proxied by the natural logarithm of Tobin's Q. Market participants anticipate significant private consumption and the excess of voting rights over cash-flow rights for dominant shareholders have negative effects on firm value. However, the second largest shareholder has the ability to prevent asset diversion. Moreover, as in Chapter 2 the identity of the second largest shareholder matters: family groups and corporations have both the capability and the incentive to obstruct asset expropriation. However, aggregated institutional investors and governments can also exercise effective monitoring over dominant shareholders. These results are consistent with the findings in Lins (2003) who shows that firm value is lower when managers' control exceeds ownership, and firm value is higher when the control rights of blockholders increase.

Multiple-class shares provide vehicles to raise funds while maintaining control, therefore non-voting shares are most frequently traded while voting shares are rarely traded, traded at a discount, or traded in blocks during a negotiated change of control. However, the positive significant coefficient of SHRRTS in the firm value equation suggests that firms with single-class shares, with one-share-one-vote structures, are highly valued by market participants. Although common in some countries (Table 3.3), multiple-class shares represent a high risk for asset expropriation and are associated with low firm valuation. The negative coefficient of CLISTING suggests that the increased disclosure requirements by US stock exchanges impose costs on the firms that may not be offset by additional benefits. Doidge, *et al.* (2006) show that when private consumption is high, firms are less likely to engage in exchange listed programs because of the high standards of transparency and disclosure and increased monitoring, but their results do not hold for OTC, Rule 144A or London listings. Besides, the significant coefficient of LAMBDA (the inverse Mills ratio) indicates that it is effectively correcting for self-selection bias introduced by the CLISTING variable and emphasizes the notion that additional disclosure negatively affects firm value. Cardenas (2007) documents that a significant number of foreign issuers have delisted their ADRs from the NYSE and that the level of new additions has plunged since 2002. He suggests that the costs of compliance with section 404, related to the certification of internal controls, are determinant elements in the cost-benefits analysis to cross-list in US markets. Similarly, Boubakri, Cosset and Samet (2008) find that after the enactment of the Sarbanes-Oxley Act, firms from emerging markets and with low protection for minority shareholders are more likely to choose ADR programs which provide access to primary capital markets in

the US, either under Rule 144A with low disclosure requirements or Level III with higher disclosure requirements respectively. If the capital markets of US and of the UK are equally integrated in world markets, corporations should be indifferent between listing in the US and in London. When I augment the definition of the CLISTING variables to include related equities listed in any foreign stock exchange, the results (unreported) are maintained. The estimated coefficients of SOA and CL_SOA are both not significant, suggesting that the benefits and costs imposed by the passing of the Sarbanes-Oxley act in 2002 have already been incorporate in other corporate governance mechanisms. In contrast, Switzer (2007) finds that Canadian small-caps subject to Sarbanes-Oxley experience an increase in market valuation, concluding that the costs of enhanced disclosure and compliance are exceeded by their benefits.

According to the significant estimated coefficients of BSIZE (negative) and BIND (positive) the boards in Latin American firms are perceived as having too many directors, who nonetheless are unable to guarantee enough independence. Agrawal and Knoeber (1996) find that the number of outside directors is also not optimal for large US firms. However, Klein, Shapiro and Young (2005) find that board composition has no effect on the performance of Canadian firms, and negatively affects the performance of family controlled firms. The negative estimated coefficient of PACQ implies that the markets for corporate control in Latin America are too weak to have disciplinary effects on firm value. On average, only 12% of the firms in the same industry have been acquired during the past five years (see Table 3.9). Therefore, the experience and history of acquisitions is too modest to induce potential synergies. Similarly, Agrawal and Knoeber (1996) find that the effects of the corporate control activity are statistically insignificant. Nenova

(2003) also indicates that the markets for corporate control are relatively inactive in her sample that includes Brazil and Chile. However, recent large mergers (i.e. in the mining industry) may contribute in the future to change the negative perception of takeover activity. In contrast, Switzer (2007) finds that the markets for corporate control exert a positive influence on firm performance. In addition, Schilles (2006) shows that the conflict of interest between shareholders deprives investors from LBO gains, for a sample of French, German and US firms.

As in Chapter 2, the three-stage least square regression results here in Chapter 3 also suggest that Latin American firms are underleveraged. According to the pecking order theory of Myers and Majluf (1984), dominant shareholders deciding on capital structures and debt levels, prefer debt and little additional voting and non-voting equity are issued for blockholders to invest. Equity are issued only in bad states of the world and dominant shareholders concerned with maintaining control would even forego investment opportunities with positive net present values if debt financing (underdeveloped financial markets) is unavailable or becomes extremely expensive in terms of interest rates and excessive monitoring privileges to creditors. However, additional interest payments of increased debt impose discipline on dominant shareholders, consistent with the free cash-flow theory of agency problems (Jensen, 1986). Thus, using more debt would increase monitoring by creditors, building investor confidence and increasing firm value as long as debt financing is comparatively competitive. Switzer (2007) finds that small Canadian firms seem to use an excess of costly debt obligations which negatively affects firm value. In contrast Agrawal and Knoeber (1996) find that the effects of firm debt are statistically insignificant. Thus, when the interactions between several control

mechanisms are considered the effect of debt on firm value is not consistent across samples. Market characteristics and firm attributes seem to determine the role of firm leverage. Additional research is needed on this topic. Finally, the $R^2$ is not reported for the 3SLS estimate because unlike in the OLS case, the sum of squared 3SLS residuals cannot be divided between the explained variation and the unexplained variation (Hayashi, 2000)

## 3.5 CONCLUDING REMARKS

To minimize the negative effects of ownership concentration on firm value, Latin American firms resort to a number of different corporate governance mechanisms that are complements rather than substitutes. I find that while firm value suffers from a stock market discount due to the separation of ownership and control, blockholders independent of the dominant shareholders assume monitoring roles and help curtail asset expropriation. Although multiple-class shares are common in some countries, firms with single-class shares are highly valued by market participants. I also find that the benefits and costs imposed by the passing of the Sarbanes-Oxley act in year 2002 have already been incorporated in other governance mechanisms. Using a completely different approach, the findings from Chapter 2 are confirmed with respect to the stock market discount as well as with respect to the monitoring role of blockholders. An additional finding from Chapter 2 is confirmed: more debt financing will contribute to an increase in the value of these firms as it makes feasible growth feasibly by direct investment while preserving control. Unfortunately the access to debt financing remains constrained and too expensive in these markets.

## Chapter 4

# MARKET LIQUIDITY AND OWNERSHIP STRUCTURE WITH WEAK PROTECTION FOR MINORITY SHAREHOLDERS: EVIDENCE FROM BRAZIL AND CHILE

This chapter analyzes the effects of corporate governance mechanisms on stock market liquidity in environments of high ownership concentration and weak shareholder protection. The discrepancies between voting rights and cash-flow rights create an incentive for dominant shareholders to expropriate minority shareholders and blockholders (outside investors). Traditionally, the ultimate defense strategy for an expropriated investor is to exit the position, provided that there is sufficient market liquidity. In principle, this should not be a problem for a stock in the local index. Facing expropriation risk minority shareholders could close their positions through the stock market without suffering a large discount. However, with illiquid markets the last resort of exiting an unfavorable position vanishes. In addition, to the extent that blockholders such as local pension funds have few diversification opportunities and their funds increase overtime, they are themselves locked into their positions and they would rather increase monitoring than close their inventories. Moreover, a run by blockholders may hurt minority shareholders more than private consumption by dominant shareholders. Since large stakes by blockholders reduce the availability of floating shares, the monitoring role of institutional investors has a high cost in terms of market liquidity. However, ownership concentration and concurrent corporate governance mechanisms in Brazilian and Chilean firms have a stabilizing effect and contribute to reduce information asymmetry, allowing providers of liquidity to post narrow spreads.

## 4.1 LITERATURE REVIEW

The financial literature on the effects of corporate governance and ownership structures on market liquidity is scarce and recent. Moreover, when analyzing different markets the jargon may significantly differ from one study to the other. In particular, diverse expressions are used to refer to liquidity providers, market makers, dealers, traders and speculators. Furthermore, the control of the firms is assigned to different parties. Some papers discuss managerial ownership whereas other papers analyze aggregated ownership. The measures of ownership I propose in this and the previous chapters are the discrepancies between voting rights and cash-flow rights for dominant shareholders. Dominant shareholders may have both the capability and the incentive to expropriate minority shareholders. The capability to expropriate hinges on the percentage of voting rights held by dominant shareholders. To determine the incentive to expropriate I compute two alternative measures of the discrepancies between voting rights and cash-flow rights, to investigate the robustness of the results. Since dominant shareholders are the largest shareholders who may be members of business groups the voting rights and cash-flow rights have been aggregated accordingly. In the literature review I maintain the original word choice from different authors and in subsequent sections I consistently use the terminology that corresponds to the markets I analyze in Brazil and Chile.

Holmstrom and Tirole (1993) discuss a theoretical model for stock markets as monitors of managerial performance. The markets for corporate control as well as compensation schemes tied to firm performance are vehicles for managerial discipline, contingent on market liquidity. Concentrated ownership hinders the chances of

disciplinary hostile takeovers to succeed. In addition, concentrated ownership reduces market liquidity and therefore the benefits of market monitoring fade away. In liquid markets, speculators invest in researching information about potential firm value. As a consequence of liquidity trading the information is only partially revealed by stock prices and the speculators earn profits from trading with liquidity traders. Nevertheless, liquidity traders require earning zero expected returns; otherwise they would invest on fixed income securities. Thus, liquidity traders should be allowed to originally purchase shares at a discount and the founder entrepreneur bears the costs of public trading during the IPO. In anticipation, the entrepreneur retains a portion of shares in an attempt to cut his costs, decreasing the profits for the speculators, and at the same time reducing market liquidity and diminishing the ability of the market to monitor the managers. Fewer analysts find it profitable to follow the firm and stock prices become less informative.

Copeland and Galai (1983) model the dealers' bid-ask spread as a tradeoff between expected loss to informed traders and expected gains from liquidity traders. A wide (narrow) bid-ask spread reduces (increases) potential loss to informed traders but also expected revenues from liquidity traders. The authors analyze the dealers' dilemma as if the traders receive two free options: a call option with strike price equal to the ask price and a put option with strike price equal to the bid price. The dealer believes that the "true" stock price is around the midpoint of the bid-ask spread, therefore both the call and the put options are out of the money from his perspective. Liquidity traders accept the loss of exercising the out of the money option while informed traders have the choice not to trade with the dealer and the dealer never gains from trading with informed traders. Only those informed traders that believe the post-trade price will fall outside the bid-ask

spread would exercise their options and trade.

Rubin (2007) examines the ownership-liquidity relations for a sample of large US firms from 1999 to 2003. In his framework, ownership levels (all the investors in a class) proxy for trading activity while ownership concentration (block holdings) proxies for adverse selection-information asymmetry. Ownership concentration quantifies the incentive of few shareholders to obtain, analyze, and trade on information. The author finds that liquidity is mainly determined by the ownership of institutional investors. Liquidity increases with ownership levels and decreases with ownership concentration. Therefore, improved monitoring comes at the cost of reduced liquidity.

Chung, Elder and Kim (2008) examine the effects of corporate governance on stock market liquidity using an index of 24 governance attributes related to financial and operational transparency and to shareholder protection. They hypothesize that poor governance gives rise to greater information asymmetry between insiders and outside investors and that this asymmetry adversely affects liquidity. Consequently, liquidity providers are likely to post wider spreads for stocks of firms with poor corporate governance. They find that better governance leads to higher stock market liquidity as measured by narrower spreads, higher market quality, smaller price impact of trades, and lower probability of information-based trading for a sample of NASDAQ, NYSE, and AMEX firms from 2001 to 2004.

Departing from the financial paradigm of frictionless efficient markets, Stoll (2000) formalizes the concept of friction as the price concession paid for immediacy. The bid-ask spread as a measure of total friction reflects transaction costs, inventory costs,

market power, and asymmetric information. Transaction costs are real economic costs (labor and capital) incurred to route, execute, clear, and settle orders. In addition, suppliers of immediacy (market makers) demand a premium for assuming inventory risks and holding undiversified portfolios. Dealers with market power increase the spread relative to their costs to extract monopoly rents. Since quotes are adjusted with a delay, the spread also compensates market makers for loss when trading with more timely or better informed traders.

## 4.2 MARKET CHARACTERISTICS

Ellul *et al.* (2007) find that differences on the nature (technology-auction process vs. automatic execution) of the stock exchanges matter in terms of the sensitivity of small orders to the quoted spread. When given the choice, some investors are willing to forego price improvement to gain execution speed. Trading costs seem to be a secondary consideration for impatient investors with small orders. Stoll (2000) finds significant larger frictions in the NASDAQ dealer market compared to the NYSE/AMSE auction market. He speculates on the role of electronic markets to reduce real and informational friction. Therefore, to begin the analysis of ownership structures and liquidity in Brazil and Chile), a qualitative discussion of the stock exchange characteristics is in order, with respect to trading platforms and market participants.

BOVESPA is currently the only stock trading center in Brazil and the largest one in Latin America comprising about 70% of the volume of trades carried out in the region. Since its 2007 corporate restructuring, it is no longer a not-for-profit institution. Today, trading is exclusively carried out through an electronic system. A minimum quantity of

securities and a maximum spread are set for market makers' offers according to average trading volumes and asset volatility respectively. Multiple market makers may be accredited for each asset or market in a competitive market making model. Market makers may be accredited to trade in several assets or to simultaneously trade the same asset in various markets. Market makers may conduct their business independently or may be engaged by the issuer or any holder of securities willing to make a market for such securities. The issuing corporation is thus allowed to take part in this process to improve the liquidity of its own securities in the market.

The Santiago Stock Exchange is an Open Stock Company. Stock market transactions are performed through both the electronic system and the trading floor. In addition, the Electronic Stock Exchange, which exclusively uses electronic trading systems, operates in direct competition with the Santiago Stock Exchange. Since 2001, the Santiago Stock Exchange incorporates the function of market makers. The liquidity induced by the market makers' actions allows shareholders to be exempted from capital gain taxes. Market makers operate either for an issuer account or on their own account. There may be multiple market makers for each security and they may trade in multiple securities. They have to continuously post bid and ask quotes within an established minimum volume and maximum spread. Market makers may short-sell securities and are exempt from trading fees when providing liquidity.

In summary, trading is concentrated in few venues in both markets, and the principal exchanges have a corporate structure and a strong regulatory framework. While trading is mainly conducted through electronic systems, the trading floor exists. Market

makers subject to competitive models are fundamental to create market liquidity. Some fiscal and competitive advantages are available for traders, issuers and institutional investors who support market liquidity. Given the similarities and the different characteristics of the stock markets across the countries under study, controlling for firm origin is carried out in the following analysis.

## 4.3 LIQUIDITY MEASURES

To analyze the effects of corporate governance mechanisms on stock market liquidity I calculate measures of market liquidity which are related to information asymmetry. In principle, liquidity providers will impose a wider bid-ask spread on the securities of firms with poor corporate governance in environments of weak shareholder protection. I compute six measures of stock market liquidity: equally-weighted spread, time-weighted spread, effective spread, realized spread, intraday price impact, and daily price impact. These order-driven measures are correlated to adverse selection costs that derive from concentrated ownership structures, and are indirectly related to stock market liquidity. In contrast, measures directly related to trading activity such as depth, share volume, dollar volume, and number of trades or turnover could not be obtained from the data available. Adverse selection costs reveal the probability that market makers (liquidity providers) trade with informed investors (Rubin, 2007). Market makers mitigate losses from trading with informed traders by quoting wide spreads and reducing the number of shares they offer in response to an increase in the probability of informed trading. Wide spreads in turn, discourage liquidity traders who observe an increase in trading costs and an augmentation of illiquidity risks. Therefore, they abstain from

trading in such unfavorable conditions and migrate to other financial products such as fixed income securities and commodities. In the Latin American sample, approximately 26% of the trades occur outside the bid ask spread compared to 4.83% in Ellis, Michaely and O'Hara (2000).

In Chung, Elder and Kim (2008) the equal-weighted spread is the implicit cost for market orders when a trade occurs at the quoted price without price improvement. This spread can also be interpreted as the premium risk adverse liquidity providers demand in order to bear inventory risk. The equal-weighted spread (SPRE) is calculated as the difference between the ask and bid quotes, divided by the quoted midpoint. The time-weighted spread (WSPRE) is computed as the equal-weighted spread multiplied by the number of five minutes intervals that the last trade price was standing. Time weighting takes into account the order activity clustering and the no-activity clustering documented by Ellul *et al.* (2007).

If the quoted midpoint represents the prevailing price perceived by liquidity providers and transactions occur at prices within the quotes, then the equal-weighted spread represents only the upper limit of execution costs. Chordia, Roll and Subrahmanyam (2008) state that the effective spread is closer to the actual transaction costs incurred by traders. The effective spread (EFFEC) is calculated as the absolute difference between the trade price and the quoted midpoint, dividend by the quoted midpoint. Correspondingly, Chung, Elder and Kim (2008) define the realized spread as the cost of trading at prices inside the posted bid and ask quotes. The realized spread (REAL) is computed as the signed difference between the trade price and the quoted

midpoint five minutes after the quote, divided by the contemporaneous quoted midpoint. To label the trades as buyer or seller initiated I use the Lee and Ready (1991) algorithm which classifies a trade as buyer-initiated if it is at or above the quoted midpoint (closer to the ask price) and seller-initiated otherwise. At the midpoint the trade is reclassified as seller-initiated if the previous price change was negative ("tick test"). Chordia, Roll and Subrahmanyam (2008) also use Lee and Ready (1991) algorithm; Rubin (2007) uses both, the Lee and Ready (1991) algorithm for NYSE/AMEX firms and the Ellis, Michaely and O'Hara (2000) algorithm for NASDAQ firms. Chung, Elder and Kim (2008) use the Ellis, Michaely and O'Hara (2000) algorithm to sign the realized spread.

Chung, Elder and Kim (2008) define the price impact of trades as the extent to which an asset can be bought or sold without affecting its price. If a trade conveys no new information, its price impact should be zero. However, an information motivated trade initiated by a buyer would raise the price while a seller initiated trade would lower the stock price. The intraday price impact (IMPA) is calculated as the signed difference between the quoted midpoint five minutes after the quote and the actual quoted midpoint, divided by the actual quoted midpoint. The signing convention for the realized spread is also used for the intraday price impact measure. Rubin (2007) affirms that liquid markets can accommodate trades with little impact on prices. The daily price impact (AVEDI) is computed as the ratio of the daily absolute return to dollar valued volume. Liquid stocks would require a large dollar volume before observing a price change.

## 4.4 EMPIRICAL DESIGN

I study Brazilian and Chilean publicly traded firms, most of whom are members of the respective local exchange index. Using data from Bloomberg, I compute the intraday liquidity measures at five minutes intervals, and then I average them over the three month period from September to November 2006. The TAQ database allows Rubin (2007) to calculate the effective spread, the realized spread and the intraday price impact each minute. However, Ellul *et al.* (2007) recognize that humans require time to mentally process market conditions and submit orders. They aggregate each type of order flow over a variety of time intervals from five seconds to five minutes. Chordia, Roll and Subrahmanyam (2008) also indicate that investors need time to absorb and act on new information. They focus on five-minute intervals as a compromise between the errors on assigning trades as either buyer-or seller-initiated and the predictability of future returns and order imbalances. Rubin (2007) constructs quarterly ownership and liquidity variables from 12:00 to 13:00 while Chung, Elder and Kim (2008) average liquidity measures annually. Ellul *et al.* (2007) compute values for each five-minute interval, from 9:30 to 16:00 during the week of April 30 to May 4, 2001. In the present study, up to twelve time intervals of five minutes per hour are included for trading hours from 7:30 h to 17:55 h during trading days. To calculate the intraday measures of liquidity every bid and ask quotes are assumed to last at most two hours within the same trading day, but those intraday measures are kept only for actual trades. A total of 5006 five minutes intervals are retained as the liquidity measures are calculated only for firms which have at least 1000 trades during the three month period. The intraday measures are averaged for each firm. After matching the ownership database with the liquidity measures, only 72

firms (14 Chilean and 58 Brazilian) are retained from the original database of 329 firms spanning five countries. The sample size, though smaller than in previous chapters is coherent with the samples in related studies. Ellul *et al.* (2007) analyze the 48 most actively traded NYSE stocks and 100 additional randomly selected NYSE stocks whereas Nenova (2003) acknowledges that including the bid-ask spread as a proxy for liquidity differences would have severely limited her sample size.

To gauge the interaction between corporate governance and market liquidity I regress the six liquidity measures on ownership concentration characteristics, corporate governance mechanisms and several control variables. Holmstrom and Tirole (1993) suggest that to profit from both efficient market monitoring and the benefits of control, the firm should issue two classes of shares. The subordinate class would be widely distributed to encourage monitoring of performance and the regular shares would be closely held for control. This is precisely the case in the Brazilian market (Valadares and Leal, 2000). To investigate the robustness of the results, the analysis is conducted over alternative measures for the ownership characteristics of dominant shareholders: TOP1VR, GAP1, and RAT1. The first variable (TOP1VR) is the percentage of voting rights held by dominant shareholders, which represents the capability of dominant shareholders to extract firm value. The next two alternative variables measure the separation of ownership and control and the incentive to expropriate minority shareholders. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights. The larger the GAP1 (RAT1), the greater (lower) the incentive to expropriate minority shareholders. In the

liquidity regression analysis the signs of the estimated coefficients of GAP1 and RAT1 are expected to have opposite signs. Blockholders with undiversified portfolios and limited opportunities to close the position would enhance monitoring. In alternative (but unreported) model specifications I include measures of blockholders' ownership, for example TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. In addition, INSOWN is the percentage of aggregated voting rights held by all institutional investors excluding dominant shareholders.

The corporate governance mechanisms included in the analysis are: the number of board members (BSIZE), a measure of board independence (BIND), an indicator variable for cross-listing in the US (CLISTING), an indicator variable for single/multiple-class shares (SHRRTS), and a measure of takeover activity (PACQ). Board independence (BIND) is calculated as 1 - (the number of insider board members) divided by (the number of board members). Cross-listing firms that opt for Level II or Level III ADR publicly listed programs are subject to high disclosure requirements which are not required for unlisted over-the-counter Level I ADR programs and private placements under Rule 144A. However, only Level III and Rule 144A offer an access to US primary capital markets while Level I and Level II allow access just to US secondary markets. Cross-listed firms have at least one related equity security traded in US stock exchanges, with a minimum of liquidity. Liquidity is measured as the average standard deviation of monthly stock price returns, for the previous 24 months for all the US equity securities related to the Latin American firm-year observation. The dummy variable CLISTING equals 1 for about 60% (43 out of 72) of the observations, and equals 0 for firms without

liquid related equities. Cross-listing observations include Level III ARD programs (28%), Level II ADR programs (48%), as well as OTC Level I programs (5%) and private placements under Rule 144A (19%). Since shareholders' rights are more at risk, with voting shares floating less than non-voting shares I compute a dummy variable which equals 1 for firms with single-class shares (SHRRTS) and 0 for firms with multiple-class shares as a measure of market monitoring. I compute takeover activity (PACQ) as the fraction of acquisition deals announced, for targets in the same industry over the past five years, in five countries of the region (Brazil, Chile, Colombia, Peru, and Venezuela). In alternative (but unreported) model specifications I include an indicator variable for the dual role of the CEO as chairman of the board (DUAL).

The control variables included are firm age (DAYS) computed as the time elapsed since the company went public; firm size calculated as the natural logarithm of Total assets (LSIZE), and three customary control variables: average daily dollar volume (dollarvolume), the inverse of the stock price (dstockp), and the standard deviation of daily stock returns (dvolatility) used in Chung, Elder and Kim (2008) and Rubin (2007). In addition, I assign industry dummies to account for strict regulatory constraints in the Utilities and Financial industries. Similarly, I assign a dummy variable to firms in the Mining industry to account for the high volatility of commodity prices. Finally, a country dummy which equals 1 for Brazilian firms and 0 for Chilean firms capture differences in economic development, market size and overall corporate governance practices. With the exception of dollarvolume, dstockp, and dvolatility, which are exclusive to this chapter, the definition of all other variables is consistent with previous chapters.

## 4.5 RESULTS

In Table 4.1, dominant shareholders hold between 5.47% and 99.99% of voting rights on the firms (TOP1VR). First, the possibility of independent managers is excluded when the largest shareholders have such a concentration of voting rights. Second, the median excess voting rights over cash-flow rights is 20.92% (GAP1). Thus, ownership is heavily concentrated on the hands of dominant shareholders. Moreover, they not only have the capability but also the incentive to expropriate minority shareholders because when assets are removed from the firm the cost to dominant shareholders is proportionally lower than the cost to other shareholders. The second largest shareholder has on average 8.64% of voting rights (TOP2_3) and aggregated institutional investors only 5.24% (INSOWN). Both variables have large variances and sometimes they are nonexistent, therefore the role of blockholders as monitors for dominant shareholders may be diminished. The board of directors for firms in the sample have a median of 8 directors (BSIZE) of which on average 67% are independent (BIND). Only 36% of the firms have single-class shares (SHRRTS), which is adverse for limiting asset expropriation, but 60% of the firms have securities listed in an US stock exchange which guarantees better disclosure (CLISTING). The CLISTING variable does not distinguish between public listing and unlisted programs but public listings dominate 3 to 1. Moreover, only 19% of the firms have a CEO that is also chairman of the board (DUAL). However, the markets for corporate control seem too disperse across industries to have a disciplinary effect (PACQ). In the sample only 17% of the firms are utilities, 6% are financial institutions and 4% are mining companies; these industries are identified because of their strict regulatory constraints and high product market volatility

respectively.

Table 4.2 shows high correlation among the alternative measures of market liquidity (ρ range between 0.2963 and 0.9935) and negative correlation between those and the corporate governance mechanisms: BSIZE (ρ range between -0.3342 and 0.3479), BIND (ρ range between -0.2271 and -0.2715), and CLISTING (ρ range between -0.4351 and -0.4732). Thus, individual corporate governance mechanisms have a potential for reducing adverse selection problems. This potential is revealed by lower bid-ask spreads indicating more liquid markets. The joint effects of several corporate governance mechanisms are exposed by the regression results in Table 4.3 where ordinary least squares (OLS) robust standard errors are reported. The estimated coefficient of most corporate governance mechanisms (i.e. BIND, BSIZE, PACQ, SHHRTS) are negative which indicates the role of corporate governance to enhance market liquidity. The increased transparency reduces information asymmetry and induces providers of liquidity to post narrow spreads since they anticipate lower risks of trading with informed parties. In addition, the liquidity measures are positively related to the daily volatility and negatively to trading volume as in Chung, Elder and Kim (2008). Cross-listing (CLISTING) is found not to significantly affect market liquidity. Consistently, Cardenas (2008) examines delisting Mexican firms and finds that increased liquidity was not achieved by cross-listing. In view of the increased costs of compliance associated with section 404 of the Sarbanes-Oxley Act, which is related to the certification of internal controls, some firms decide to concentrate trading in local markets.

Available floating shares are scarce; therefore the measures of ownership concentration require a careful interpretation. Large stakes by blockholders reduce the number of floating shares. Only 22.32% of voting rights (Floatv) and 40.66% of cash-flow rights (Floatcf) are associated with floating shares (Table 4.2). Therefore, as observed by Rubin (2007), the monitoring role of blockholders in general, and institutional investors (INSOWN) in particular, seems to have a high cost in terms of market liquidity However, ownership concentration by dominant shareholders contributes to reduce information asymmetry, allowing providers of liquidity to post narrow spreads. With a lower probability of trading with informed investors, transaction costs are lower, and in that sense markets are more liquid. The incentive for dominant shareholders to expropriate minority shareholders materializes by extracting rents from the firm through private consumption, which requires a solid and stable position of control. Dominant shareholders do not obtain the majority of their rents from informed trading, which would be easily spotted, probably illegal, and risky in terms of loss of control. Dominant shareholders would participate only in operations of change of control or would not trade at all. Therefore, a large incentive for dominant shareholders to expropriate minority shareholders through private consumption sends a reassuring signal to liquidity providers: that the most feared of informed investors would not trade and it is relatively safe to post narrow spreads.

In unreported regressions, I have included the variables TOP2_3 and DUAL; however, the estimates coefficients of both variables are always insignificantly different from zero whether they are included together or individually, while the other results are maintained. Therefore, I have omitted them from the model specifications in Table 4.3.

Finally, we also observe high $R^2$s in the regressions, on the range from 0.5 to 0.79 which corresponds also to the values presented in related work by Chung, Elder and Kim (2008) and Rubin (2007).

## 4.6 CONCLUDING REMARKS

The discrepancies between voting rights and cash-flow rights create an incentive for dominant shareholders to expropriate minority shareholders and blockholders. Facing expropriation risk minority shareholders could close their positions through the stock market without suffering a large discount. In principle, this should not be a problem in liquid markets nor for stocks in the local index. In addition, blockholders could assume monitoring roles or collude with dominant shareholders to expropriate minority shareholders. However, large stakes by blockholders reduce the availability of floating shares. Therefore, the monitoring role of institutional investors seems to have high costs in terms of market liquidity. Moreover, only block trades that change control will create value for investors, but most voting shares are already on the hands of dominant shareholders. Nevertheless, ownership concentrations by dominant shareholders and concurrent governance mechanisms have stabilizing effects and contribute to reduce information asymmetry, allowing providers of liquidity to post narrow spreads.

# Chapter 5

## Conclusions

In this thesis I analyze the role of ownership structure as one of the leading corporate governance mechanisms. Ownership concentration is pervasive around the world, and prevalent in Latin American markets. These markets are also characterized by weak formal protection for minority shareholders. Moreover, the interests of the largest shareholders are so important that they assume quasi managerial functions. Thus the role of the managers as independent decision makers with the potential for creating agency problems is secondary. The high ownership concentration and more precisely the discrepancies between voting rights and cash-flow rights translate into a conflict of interest between dominant shareholders and minority shareholders. The excess voting rights over cash-flow rights for dominant shareholders creates an incentive to expropriate minority shareholders. Blockholders (outside investors) are also potentially subject to expropriation; alternatively blockholders could collude with dominant shareholders to share a portion of the private benefits.

In Chapter 1, I offer a detailed characterization of the ownership structures in these markets. Shareholders are identified and categorized as Family members, Corporations, Institutional Investors and Government. Then, their affiliations to business groups are recognized, and the voting rights and cash-flow rights are aggregated accordingly. One of the challenges for corporate governance studies in emerging markets is the absence of compelling databases. This effort contributes to the analysis in subsequent chapters, and is the foundation for future research.

In Chapter 2, I use panel data techniques to unveil the effects of the separation of ownership and control on firm value. This is one of the first analyses that apply panel data techniques in corporate governance studies, and certainly the first to use them in the Latin American region as an investment destination. I present evidence that the market anticipates the potential for asset diversion and consequently a discount is imposed on the value of public firms. However, blockholders do not collude with dominant shareholders. Moreover, some blockholders have the potential for monitoring dominant shareholders, and the market seems to value this role. Given the large potential for private consumption, the existence and frequency of blockholders demands further investigation. Since their portfolios are undiversified and they face expropriation risks, other governance mechanisms should be in place to secure risk-adjusted return on investment.

In Chapter 3, I analyze the relations between several corporate governance mechanisms and in particular the interactions with ownership structures and firm value. Using a system of simultaneous equations I find that many corporate governance mechanisms are active at the same time. Thus they are complements rather than substitutes in the response to an environment of weak protection for minority shareholders. Of particular interest is the role of governance mechanisms directly linked to stock markets: cross-listing and single/multiple-class shares; and mechanisms directly linked to the organization of the board of directors: board size and board independence. The costs imposed by cross-listing exceed the expected benefits. Firms with multiple-class shares are common in the region but not highly appreciated by investors. Small boards and more independent directors are rewarded with high firm value. However, the dual role of the CEO as chairman of the board is not of much concern. In addition, the

markets for corporate control are not active enough to have a disciplinary role. Using a completely different approach, the findings from Chapter 2 are confirmed with respect to the stock market discount as well as with respect to the monitoring role of blockholders. An additional finding from Chapter 2 is confirmed: more debt financing will contribute to the value of these firms as it makes feasible growth by direct investment while preserving control. Unfortunately the access to debt financing remains constrained and too expensive in these markets.

In Chapter 4, I turn to the investigation of the effects of ownership concentration and the separation of ownership and control on market liquidity. With high potential for private consumption, a liquid market, with the possibility of quickly closing a position is one condition for blockholders and minority shareholders to invest. I show that a number of corporate governance mechanisms including ownership by dominant shareholders converge to reduce asymmetric information and increase market transparency. Providers of liquidity are thus encouraged to post smaller spreads.

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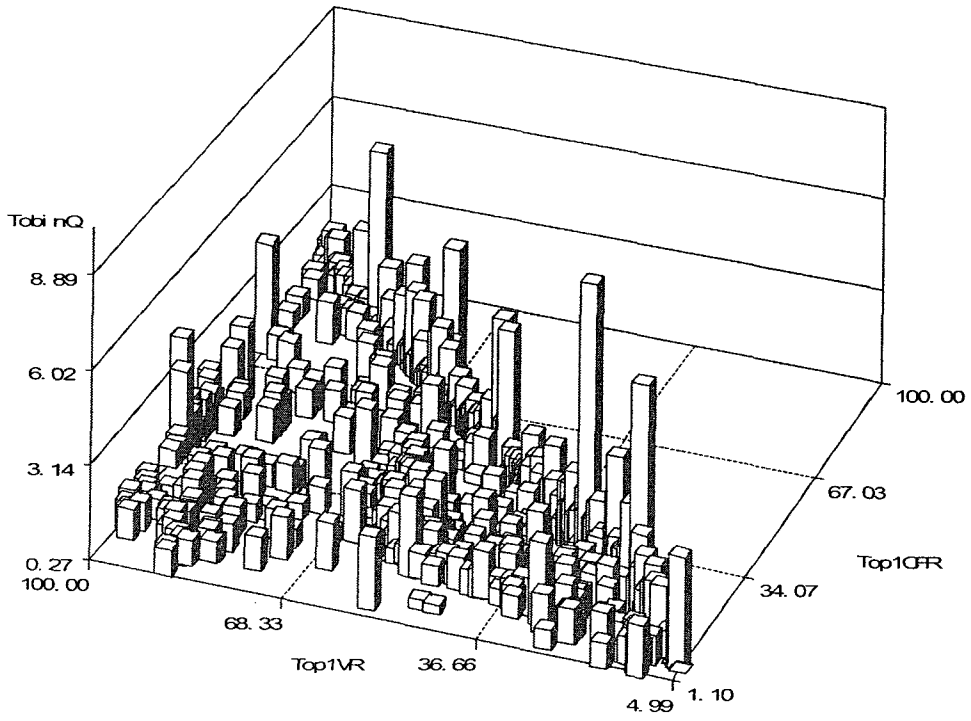
# FIGURES

**Figure 1.1. Ownership of dominant shareholders and firm value**



## Figure 1.2. Ownership concentration and interconnectedness of firms in the sample

Sub-network of firms and shareholders linked directly (or indirectly) to "Caixa Prev Func BB - Previ" through a minimum of 5% ownership of voting shares.

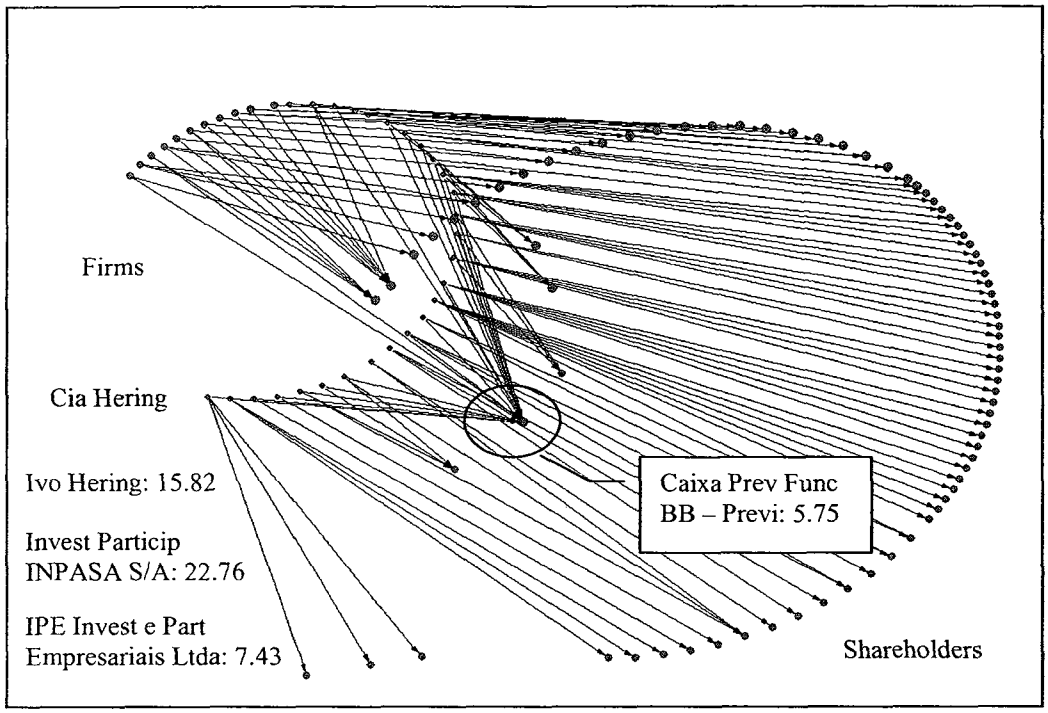
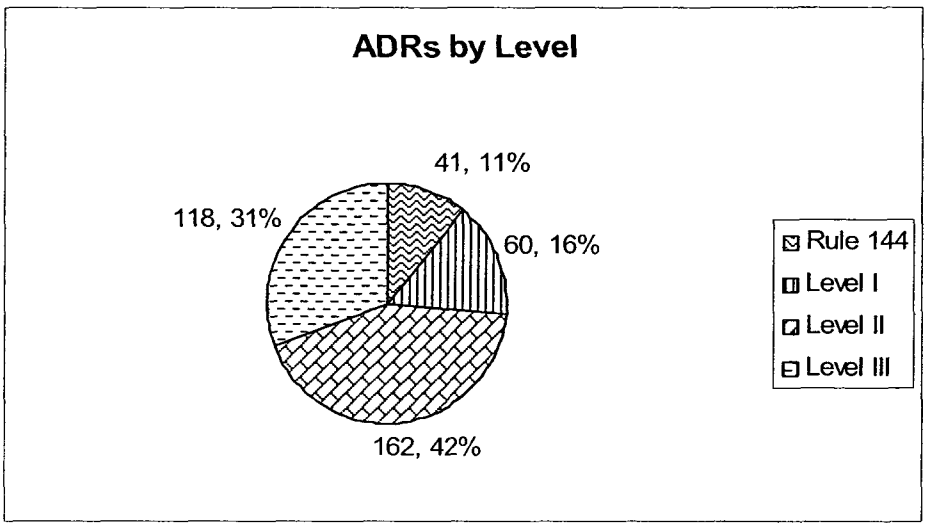


**Figure 3.1. Cross-listed shares in the US, distribution of ADRs by Level.**

381 observations, 87 firms.



## TABLES

### Table 1.1. Distribution of firms by primary control levels

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.
ControlXX indicates the number of firms in which the dominant shareholder controls more than XX% of voting rights

| Country | Variable | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|
| **Brazil (455)** | **# obs.** | **74** | **76** | **72** | **73** | **81** | **79** |
| | Control50 | 55 | 59 | 55 | 58 | 63 | 58 |
| | Control60 | 40 | 41 | 38 | 39 | 41 | 39 |
| | Control70 | 32 | 34 | 31 | 31 | 34 | 31 |
| | Control80 | 26 | 26 | 23 | 23 | 24 | 24 |
| **Chile (221)** | **# obs.** | 38 | 38 | 36 | 41 | 38 | 30 |
| | Control50 | 13 | 15 | 14 | 19 | 17 | 12 |
| | Control60 | 7 | 7 | 8 | 10 | 8 | 7 |
| | Control70 | 4 | 5 | 5 | 5 | 3 | 1 |
| | Control80 | 4 | 4 | 4 | 4 | 3 | 1 |
| **Colombia (88)** | **# obs.** | 17 | 17 | 16 | 20 | 18 | |
| | Control50 | 5 | 8 | 7 | 9 | 5 | |
| | Control60 | 5 | 6 | 6 | 8 | 4 | |
| | Control70 | 4 | 5 | 4 | 6 | 3 | |
| | Control80 | 1 | 2 | 0 | 2 | 1 | |
| **Peru (138)** | **# obs.** | 23 | 28 | 24 | 30 | 27 | 6 |
| | Control50 | 11 | 14 | 14 | 17 | 15 | 2 |
| | Control60 | 8 | 12 | 14 | 15 | 12 | 2 |
| | Control70 | 5 | 8 | 10 | 9 | 7 | 2 |
| | Control80 | 3 | 4 | 4 | 6 | 5 | 1 |
| **Venezuela (33)** | **# obs.** | 8 | | 9 | 9 | 5 | 2 |
| | Control50 | 3 | | 4 | 5 | 2 | 1 |
| | Control60 | 2 | | 2 | 3 | 1 | 1 |
| | Control70 | 1 | | 1 | 1 | 0 | 0 |
| | Control80 | 0 | | 0 | 0 | 0 | 0 |

**Table 1.2. Average annual % growth of Gross Domestic Product**

| Country | 2000-2004 | 2004 | 2005 |
|---|---|---|---|
| Brazil | 2.0 | 4.9 | 2.5 |
| Chile | 3.7 | 6.1 | 5.2 |
| Colombia | 2.9 | 4.1 | 4.0 |
| Peru | 3.7 | 4.8 | 6.7 |
| Venezuela, RB | –1.2 | 17.9 | 9.0 |
| | | | |
| Canada | 2.6 | N.A. | N.A. |
| United Kingdom | 2.3 | N.A. | N.A. |
| United States | 2.5 | N.A. | N.A. |

Source: 2006 World Development Indicators
http://devdata.worldbank.org/wdi2006/contents/Table4_a.htm

**Table 1.3. Relative sizes of security markets**

Average and standard deviation of Value of total listed shares to GDP and Value of total shares traded on the stock market exchange to GDP, 2001- 2006

| Country | Stock market capitalization / GDP | | Stock market total value traded / GDP | |
|---|---|---|---|---|
| | Mean | Std. Dev. | Mean | Std. Dev. |
| Brazil | 0.41 | 0.09 | 0.15 | 0.05 |
| Chile | 0.96 | 0.13 | 0.11 | 0.06 |
| Colombia | 0.22 | 0.10 | 0.03 | 0.03 |
| Peru | 0.30 | 0.12 | 0.02 | 0.01 |
| Venezuela | 0.05 | 0.01 | 0.003 | 0.001 |
| | | | | |
| Canada | 1.04 | 0.13 | 0.66 | 0.13 |
| United Kingdom | 1.50 | 0.30 | 1.37 | 0.33 |
| United States | 1.40 | 0.19 | 2.20 | 0.68 |

Source: Thorsten Beck, Asli Demirgüç-Kunt and Ross Levine, (2000), "A New Database on Financial Development and Structure," World Bank Economic Review 14, 597-605

## Table 2.1. Descriptive statistics

1179 observations, 242 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2000-2006.
Tobin's Q ratios are defined as the sum of Total liabilities and Market value of equity divided by Total assets. TOP1VR is the percentage of voting rights held by the dominant shareholder. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights held by dominant shareholders. CFCON1 is a dummy variable that takes the value of 1 if dominant shareholders are corporations or family groups, and zero otherwise. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. BHS is the sum of the percentage of voting rights held by all blockholders (Family+Corporation+Other) excluding dominant shareholders. BHD is a dummy variable equal to 1 if an aggregated blockholder exists, as defined in BHS, and zero otherwise. INSOWN is the percentage of voting rights held by institutional investors excluding dominant shareholders. GOVOWN is the percentage of voting rights held by governments excluding dominant shareholders. CIGOWN is the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders. Size is Total assets in USD$ MM. LSIZE is the natural logarithm of Total assets. Leverage is computed as Total liabilities divided by Total assets. Volatility is measured by the standard deviation of monthly stock price returns over the previous 24 months. The column Count indicates how many observations are not zero for those variables (not 1 for RAT1). 670 obs. are >0 for GAP1

| Variable | Mean | Std. Dev. | Min | Max | Count |
|---|---|---|---|---|---|
| **Largest shareholder** | | | | | |
| Tobin's Q | 1.19 | 0.66 | 0.27 | 8.89 | 1179 |
| TOP1VR | 55.78 | 25.5 | 4.99 | 100 | 1179 |
| GAP1 | 16.29 | 21.59 | -7.78 | 87.04 | 694 |
| RAT1 | 0.73 | 0.3 | 0.03 | 1.11 | 694 |
| CFCON1 | 0.77 | 0.42 | 0 | 1 | 905 |
| **Blockholders** | | | | | |
| TOP2_3 | 8.98 | 9.94 | 0 | 50 | 781 |
| BHS | 17.02 | 17.59 | 0 | 76.03 | 834 |
| BHD | 0.72 | 0.45 | 0 | 1 | 854 |
| INSOWN | 5.46 | 9.57 | 0 | 58.05 | 462 |
| GOVOWN | 1.65 | 5.45 | 0 | 42.27 | 167 |
| CIGOWN | 7.1 | 10.68 | 0 | 58.05 | 563 |
| **Firm Characteristics** | | | | | |
| Size | 3955 | 11468 | 4.4 | 138763 | 1179 |
| LSIZE | 6.88 | 1.62 | 1.48 | 11.84 | 1179 |
| Leverage | 0.54 | 0.23 | 0.02 | 3.11 | 1179 |
| Volatility | 0.47 | 0.25 | 0 | 2.56 | 1177 |

**Table 2.2. Dataset characteristics: geographic distribution by investor category and time**

**Panel A:** Number of observations by country and shareholder category for the dominant shareholder

| Country | Family | Corporation | Institutional | Government | Total |
|---|---|---|---|---|---|
| Brazil | 72 | 401 | 50 | 59 | 582 |
| Chile | 16 | 165 | 75 | 13 | 269 |
| Colombia | 5 | 93 | 10 | 3 | 111 |
| Peru | 36 | 87 | 40 | 8 | 171 |
| Venezuela | 4 | 26 | 16 | 0 | 46 |
| Total | 133 | 772 | 191 | 83 | 1179 |

**Panel B:** Number of observations by country and year

| Country | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | Total |
|---|---|---|---|---|---|---|---|---|
| Brazil | 80 | 82 | 81 | 75 | 81 | 97 | 86 | 582 |
| Chile | 40 | 38 | 38 | 41 | 41 | 39 | 32 | 269 |
| Colombia | 18 | 17 | 18 | 20 | 20 | 18 | 0 | 111 |
| Peru | 24 | 28 | 31 | 24 | 31 | 27 | 6 | 171 |
| Venezuela | 11 | 9 | 0 | 10 | 9 | 5 | 2 | 46 |
| Total | 173 | 174 | 168 | 170 | 182 | 186 | 126 | 1179 |

**Table 2.3. Distribution of voting rights and cash-flow rights by shareholder category**

Number of observations, minimum, maximum and average percentage voting rights and cash-flow rights, by shareholder category for non-floating shares and floating shares. The column Sample refers to all identifiable shareholders (non-floating shares) regardless of their identities

| | Family | Corporation | Institutional | Government | Sample | Float |
|---|---|---|---|---|---|---|
| **Voting rights** | | | | | | |
| Frequency | 368 | 1023 | 540 | 225 | ----- | 1116 |
| Minimum | 0.01 | 0.3 | 0.04 | 0.06 | 5.68 | 0.01 |
| Maximum | 99.99 | 96.28 | 100 | 99.86 | 100 | 94.32 |
| Average | 25.82 | 58.44 | 33.39 | 30.64 | 63.91 | 21.23 |
| **Cash-flow rights** | | | | | | |
| Frequency | 370 | 1026 | 552 | 236 | ----- | 1142 |
| Minimum | 0.01 | 0.3 | 0.04 | 0.06 | 2.25 | 0.15 |
| Maximum | 99.85 | 91 | 99.51 | 94.42 | 100 | 94.32 |
| Average | 17.06 | 43.15 | 27.98 | 23.74 | 48.6 | 32.55 |

**Table 2.4. Distribution of voting rights and cash-flow rights for three largest shareholders**

Only non-null holdings are reported in this table

**Panel A:** Number of observations for the three largest (aggregated) shareholders, by category

| | Family | Institutional | Corporation | Government | Total |
|---|---|---|---|---|---|
| **Largest shareholders** | 133 | 191 | 772 | 83 | 1179 |
| Group members | 114 | 174 | 342 | 54 | 684 |
| Independents | 19 | 17 | 430 | 29 | 495 |
| **2nd largest shareholders** | 55 | 184 | 629 | 76 | 944 |
| Group members | 40 | 131 | 170 | 33 | 374 |
| Independents | 15 | 53 | 459 | 43 | 570 |
| **3rd largest shareholders** | 62 | 201 | 457 | 44 | 764 |
| Group members | 18 | 143 | 69 | 22 | 252 |
| Independents | 44 | 58 | 388 | 22 | 512 |

**Panel B:** Percentage voting rights and cash-flow rights for the three largest (aggregated) shareholders, by category

| | Family | Institutional | Corporation | Government | Sample |
|---|---|---|---|---|---|
| **Largest shareholders** | | | | | |
| Minimum VR | 12.28 | 8.16 | 4.99 | 8.93 | 4.99 |
| Maximum VR | 99.99 | 99.51 | 100 | 99.86 | 100 |
| Mean Voting Rights | 58.42 | 60.72 | 53.68 | 59.67 | 55.78 |
| Mean Cash-flow Rights | 37.33 | 52.29 | 36.36 | 42.52 | 39.48 |
| Maximum CFR | 99.85 | 99.49 | 99.71 | 94.42 | 99.85 |
| Minimum CFR | 6.21 | 1.54 | 1.1 | 8.93 | 1.1 |
| **2nd largest shareholders** | | | | | |
| Minimum VR | 0.08 | 0.07 | 0.04 | 0.06 | 0.04 |
| Maximum VR | 37.34 | 40 | 50 | 42.27 | 50 |
| Mean Voting Rights | 10.69 | 12.77 | 14.84 | 15.63 | 14.26 |
| Mean Cash-flow Rights | 8.08 | 10.9 | 11.74 | 16.44 | 11.74 |
| Maximum CFR | 37.34 | 56.02 | 54.81 | 42.27 | 56.02 |
| Minimum CFR | 1.05 | 0.07 | 0.04 | 0.06 | 0.04 |
| **3rd largest shareholders** | | | | | |
| Minimum VR | 0.01 | 0.05 | 0.01 | 0.65 | 0.01 |
| Maximum VR | 18.49 | 20.52 | 28 | 16.22 | 28 |
| Mean Voting Rights | 8.97 | 7.51 | 8.48 | 7.82 | 8.22 |
| Mean Cash-flow Rights | 6.73 | 6.08 | 7.27 | 6.735 | 6.88 |
| Maximum CFR | 16.17 | 18.17 | 27.47 | 16.22 | 27.47 |
| Minimum CFR | 0.01 | 0.003 | 0.04 | 0.65 | 0.003 |

## Table 2.5. Correlation matrix, 1177 observations, 242 firms, 5 countries, 2000-2006

Brazil, Chile, Colombia, Peru and Venezuela. Tobin's Q ratios are defined as the sum of Total liabilities and Market value of equity divided by Total assets. TOP1VR, the percentage of voting rights held by the dominant shareholder. GAP1, the difference of the percentage of voting rights and the percentage of cash-flow rights held by the dominant shareholder. RAT1, the ratio of the percentage of cash-flow rights to the percentage of voting rights held by the dominant shareholder. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. BHS, the sum of the percentage of voting rights held by all blockholders (Family+Corp+Other) excluding dominant shareholders. BHD, an indicator variable equal to 1 if an aggregated blockholder exists, as defined in BHS, and zero otherwise. INSOWN, the percentage of voting rights held by institutional investors excluding dominant shareholders. GOVOWN, the percentage of voting rights held by governments excluding dominant shareholders. CIGOWN = INSOWN + GOVOWN, the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders. CFCON1 is a dummy variable that takes the value of 1 if dominant shareholders are corporations or family groups, and zero otherwise. LSIZE is the natural logarithm of Total assets. Leverage is computed as Total liabilities divided by Total assets. Volatility is measured by the standard deviation of monthly stock price returns over the previous 24 months. The stars denote a significance level of 5%. Values omitted are not significant at the 10% level. Alternate specifications are strikethrough

| | Tobin's Q | TOP1VR | GAP1 | RAT1 | TOP2_3 | BHS | BHD | CIGOWN | INSOWN | GOVOWN | CFCON1 | LSIZE | Leverage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Tobin's Q** | 1 | | | | | | | | | | | | |
| **TOP1VR** | | 1 | | | | | | | | | | | |
| **GAP1** | | ~~0.4638*~~ | 1 | | | | | | | | | | |
| **RAT1** | | -0.1872* | ~~-0.8782*~~ | 1 | | | | | | | | | |
| **TOP2_3** | | -0.3943* | -0.2174* | 0.1011* | 1 | | | | | | | | |
| **BHS** | 0.0608* | -0.6090* | -0.3158* | 0.1519* | ~~0.8026*~~ | 1 | | | | | | | |
| **BHD** | | -0.4742* | -0.2492* | 0.0807* | ~~0.5575*~~ | ~~0.5974*~~ | 1 | | | | | | |
| **CIGOWN** | | -0.3454* | -0.2313* | 0.1324* | ~~-0.0962*~~ | | ~~0.0856*~~ | 1 | | | | | |
| **INSOWN** | | -0.3140* | -0.2174* | 0.1273* | ~~-0.0971*~~ | | ~~0.1141*~~ | ~~0.8605*~~ | 1 | | | | |
| **GOVOWN** | | -0.1250* | -0.0711* | | | | | ~~0.4471*~~ | ~~-0.0709*~~ | 1 | | | |
| **CFCON1** | 0.1228* | -0.0999* | 0.1332* | -0.1504* | 0.0999* | 0.1846* | 0.1504* | -0.0989* | -0.0972* | | 1 | | |
| **LSIZE** | | 0.0809* | 0.1200* | -0.1425* | -0.0566 | -0.0896* | -0.1115* | | -0.0651* | 0.0980* | -0.2662* | 1 | |
| **Leverage** | 0.0678* | 0.1799* | 0.1552* | -0.1411* | | | | -0.1083* | -0.1365* | | -0.0812* | 0.2243* | 1 |
| **Volatility** | -0.0511 | 0.1128* | 0.1527* | -0.1363* | | -0.0593* | -0.1359* | -0.1343* | -0.1899* | 0.0704* | 0.0789* | -0.1949* | 0.1634* |

## Table 2.6. Effects of block holdings on firm value, ownership variable: TOP1VR and RAT1

This table reports regression results of pooled OLS and fixed-effects (FE) regression using Driscoll and Kraay (1998) estimation. The dependent variable is the Tobin's Q ratio defined as the sum of Total liabilities and Market value of equity divided by Total assets. The explanatory variables are: TOP1VR, the percentage of voting rights held by the dominant shareholder. RAT1, the ratio of the percentage of cash-flow rights to the percentage of voting rights held by the dominant shareholder. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. BHS, the sum of the percentage of voting rights held by all blockholders (Family+Corp+Other) excluding dominant shareholders. BHD, an indicator variable equal to 1 if an aggregated blockholder exists, as defined in BHS, and zero otherwise. INSOWN – the percentage of voting rights held by institutional investors excluding dominant shareholders. GOVOWN, the percentage of voting rights held by governments excluding dominant shareholders. CIGOWN = INSOWN + GOVOWN, the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders. CFCON1 is a dummy variable that takes the value of 1 if dominant shareholders are corporations or family groups, and zero otherwise. LSIZE is the natural logarithm of Total assets. Leverage is computed as Total liabilities divided by Total assets. Volatility is measured by the standard deviation of monthly stock price returns over the previous 24 months. Country dummy variables, year dummy variables coefficients and the constant are not reported. P-values are reported in parenthesis, ***,**,* indicate that the coefficient is statistically different form 0 at the 1%, 5% and 10% levels respectively. 1177 observations, 242 firms, 5 countries, 2000-2006

| | **OLS** | **OLS** | **OLS** | **OLS** | **OLS** | **OLS** | **OLS** | **FE** | **FE** | **FE** | **FE** | **FE** | **FE** | **FE** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOP1VR | -0.002 | -0.002 | -0.001 | -0.002 | -0.002 | -0.002 | -0.002 | -0.001 | -0.001 | 0 | -0.001 | -0.002 | -0.002 | -0.001 |
| | 0.002*** | 0.005*** | 0.043** | 0.008*** | 0.003*** | 0.004*** | 0.001*** | 0.011** | 0.066* | 0.248 | 0.063* | 0.007*** | 0.006*** | 0.010** |
| RAT1 | 0.229 | 0.23 | 0.223 | 0.228 | 0.228 | 0.23 | 0.232 | 0.551 | 0.55 | 0.548 | 0.552 | 0.539 | 0.544 | 0.55 |
| | 0.045** | 0.045** | 0.062* | 0.039** | 0.046** | 0.046** | 0.043** | 0.002*** | 0.001*** | 0.001*** | 0.002*** | 0.002*** | 0.001*** | 0.002*** |
| TOP2_3 | | 0 | | | | | | | 0.003 | | | | | |
| | | 0.657 | | | | | | | 0.013** | | | | | |
| BHS | | | 0.001 | | | | | | | 0.003 | | | | |
| | | | 0.208 | | | | | | | 0.019** | | | | |
| BHD | | | | -0.007 | | | | | | | 0.041 | | | |
| | | | | 0.863 | | | | | | | 0.149 | | | |
| CIGOWN | | | | | -0.001 | | | | | | | -0.005 | | |
| | | | | | 0.405 | | | | | | | 0.064* | | |
| INSOWN | | | | | | 0 | | | | | | | -0.003 | |
| | | | | | | 0.68 | | | | | | | 0.063* | |
| GOVOWN | | | | | | | -0.003 | | | | | | | -0.001 |
| | | | | | | | 0.001*** | | | | | | | 0.495 |
| CFCON1 | 0.193 | 0.193 | 0.187 | 0.194 | 0.191 | 0.194 | 0.193 | 0.119 | 0.133 | 0.136 | 0.117 | 0.149 | 0.133 | 0.122 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.002*** | 0.000*** | 0.000*** | 0.002*** | 0.000*** | 0.000*** | 0.001*** |
| LSIZE | -0.026 | -0.026 | -0.026 | -0.026 | -0.026 | -0.026 | -0.025 | -0.073 | -0.075 | -0.076 | -0.077 | -0.07 | -0.071 | -0.073 |
| | 0.008*** | 0.008*** | 0.013** | 0.016** | 0.007*** | 0.007*** | 0.013** | 0.019** | 0.016** | 0.016** | 0.019** | 0.031** | 0.027** | 0.019** |
| Volatility | -0.093 | -0.094 | -0.088 | -0.095 | -0.092 | -0.093 | -0.084 | 0.258 | 0.262 | 0.259 | 0.261 | 0.253 | 0.256 | 0.258 |
| | 0.111 | 0.106 | 0.107 | 0.073* | 0.109 | 0.117 | 0.138 | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| Leverage | 0.227 | 0.228 | 0.217 | 0.228 | 0.226 | 0.227 | 0.227 | 0.589 | 0.586 | 0.586 | 0.585 | 0.6 | 0.593 | 0.59 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| R-sq | 0.173 | 0.173 | 0.173 | 0.173 | 0.173 | 0.173 | 0.173 | | | | | | | |

## Table 2.7. Effects of block holdings on firm value, ownership variable: GAP1

This table reports regression results of pooled OLS and fixed-effects (FE) regression using Driscoll and Kraay (1998) estimation. The dependent variable is the Tobin's Q ratio defined as the sum of Total liabilities and Market value of equity divided by Total assets. The explanatory variables are: GAP1, the difference of the percentage of voting rights and the percentage of cash-flow rights held by the dominant shareholder. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. BHS, the sum of the percentage of voting rights held by all blockholders (Family+Corp+Other) excluding dominant shareholders. BHD, an indicator variable equal to 1 if an aggregated blockholder exists, as defined in BHS, and zero otherwise. INSOWN, the percentage of voting rights held by institutional investors excluding dominant shareholders. GOVOWN, the percentage of voting rights held by governments excluding dominant shareholders. CIGOWN = INSOWN + GOVOWN, the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders. CFCON1 is a dummy variable that takes the value of 1 if dominant shareholders are corporations or family groups, and zero otherwise. LSIZE is the natural logarithm of Total assets. Leverage is computed as Total liabilities divided by Total assets. Volatility is measured by the standard deviation of monthly stock price returns over the previous 24 months. Country dummy variables, year dummy variables coefficients and the constant are not reported. P-values are reported in parenthesis, ***,**,* indicate that the coefficient is statistically different form zero at the 1%, 5% and 10% levels respectively. 1177 observations, 242 firms, 5 countries, 2000-2006

| | OLS | OLS | OLS | OLS | OLS | OLS | OLS | FE | FE | FE | FE | FE | FE | FE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GAP1 | -0.003 | -0.003 | -0.002 | -0.003 | -0.003 | -0.003 | -0.003 | -0.004 | -0.004 | -0.004 | -0.004 | -0.004 | -0.004 | -0.004 |
| | 0.015** | 0.025** | 0.074* | 0.035** | 0.014** | 0.016** | 0.013** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| TOP2_3 | | 0.001 | | | | | | | 0.003 | | | | | |
| | | 0.072* | | | | | | | 0.014** | | | | | |
| BHS | | | 0.002 | | | | | | | 0.002 | | | | |
| | | | 0.102 | | | | | | | 0.034** | | | | |
| BHD | | | | 0.006 | | | | | | | 0.034 | | | |
| | | | | 0.904 | | | | | | | 0.164 | | | |
| CIGOWN | | | | | 0 | | | | | | | -0.005 | | |
| | | | | | 0.737 | | | | | | | 0.013** | | |
| INSOWN | | | | | | 0.001 | | | | | | | -0.003 | |
| | | | | | | 0.278 | | | | | | | 0.010*** | |
| GOVOWN | | | | | | | -0.002 | | | | | | | -0.001 |
| | | | | | | | 0.004*** | | | | | | | 0.475 |
| CFCON1 | 0.201 | 0.198 | 0.185 | 0.2 | 0.2 | 0.201 | 0.201 | 0.097 | 0.109 | 0.11 | 0.095 | 0.128 | 0.112 | 0.1 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| LSIZE | -0.027 | -0.027 | -0.027 | -0.027 | -0.027 | -0.027 | -0.027 | -0.066 | -0.067 | -0.068 | -0.069 | -0.063 | -0.064 | -0.066 |
| | 0.013** | 0.014** | 0.016** | 0.023** | 0.013** | 0.013** | 0.018** | 0.044** | 0.040** | 0.038** | 0.043** | 0.063* | 0.056* | 0.044** |
| Volatility | -0.089 | -0.087 | -0.083 | -0.088 | -0.088 | -0.088 | -0.082 | 0.25 | 0.253 | 0.25 | 0.253 | 0.245 | 0.248 | 0.25 |
| | 0.133 | 0.132 | 0.139 | 0.104 | 0.13 | 0.139 | 0.153 | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| Leverage | 0.215 | 0.213 | 0.205 | 0.214 | 0.214 | 0.216 | 0.214 | 0.597 | 0.596 | 0.596 | 0.594 | 0.606 | 0.6 | 0.598 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| R-sq | 0.168 | 0.168 | 0.169 | 0.168 | 0.168 | 0.168 | 0.168 | | | | | | | |

## Table 2.8. Effects of block holdings on firm value, ownership variable: RAT1

This table reports regression results of pooled OLS and fixed-effects (FE) regression using Driscoll and Kraay (1998) estimation. The dependent variable is the Tobin's Q ratio defined as the sum of Total liabilities and Market value of equity divided by Total assets. The explanatory variables are: RAT1, the ratio of the percentage of cash-flow rights to the percentage of voting rights held by the dominant shareholder. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. BHS, the sum of the percentage of voting rights held by all blockholders (Family+Corp+Other) excluding dominant shareholders. BHD, an indicator variable equal to 1 if an aggregated blockholder exists, as defined in BHS, and zero otherwise. INSOWN, the percentage of voting rights held by institutional investors excluding dominant shareholders. GOVOWN, the percentage of voting rights held by governments excluding dominant shareholders. CIGOWN = INSOWN + GOVOWN, the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders. CFCON1 is a dummy variable that takes the value of 1 if dominant shareholders are corporations or family groups, and zero otherwise. LSIZE is the natural logarithm of Total assets. Leverage is computed as Total liabilities divided by Total assets. Volatility is measured by the standard deviation of monthly stock price returns over the previous 24 months. Country dummy variables, year dummy variables coefficients and the constant are not reported. P-values are reported in parenthesis, ***,**,* indicate that the coefficient is statistically different form zero at the 1%, 5% and 10% levels respectively. 1177 observations, 242 firms, 5 countries, 2000-2006

| | OLS | OLS | OLS | OLS | OLS | OLS | OLS | FE | FE | FE | FE | FE | FE | FE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAT1 | 0.237 | 0.23 | 0.221 | 0.239 | 0.238 | 0.24 | 0.239 | 0.536 | 0.542 | 0.543 | 0.54 | 0.52 | 0.525 | 0.535 |
| | 0.040** | 0.050** | 0.067* | 0.037** | 0.040** | 0.040** | 0.038** | 0.003*** | 0.001*** | 0.001*** | 0.002*** | 0.003*** | 0.003*** | 0.003*** |
| TOP2_3 | | 0.002 | | | | | | | 0.004 | | | | | |
| | | 0.000*** | | | | | | | 0.007*** | | | | | |
| BHS | | | 0.002 | | | | | | | 0.003 | | | | |
| | | | 0.006*** | | | | | | | 0.010** | | | | |
| BHD | | | | 0.033 | | | | | | | 0.048 | | | |
| | | | | 0.381 | | | | | | | 0.053* | | | |
| CIGOWN | | | | | 0 | | | | | | | -0.004 | | |
| | | | | | 0.538 | | | | | | | 0.113 | | |
| INSOWN | | | | | | 0.001 | | | | | | | -0.003 | |
| | | | | | | 0.063* | | | | | | | 0.12 | |
| GOVOWN | | | | | | | -0.002 | | | | | | | -0.001 |
| | | | | | | | 0.018** | | | | | | | 0.446 |
| CFCON1 | 0.207 | 0.203 | 0.188 | 0.201 | 0.208 | 0.209 | 0.207 | 0.121 | 0.135 | 0.138 | 0.118 | 0.146 | 0.132 | 0.124 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.001*** | 0.000*** | 0.000*** | 0.001*** | 0.000*** | 0.000*** | 0.000*** |
| LSIZE | -0.026 | -0.026 | -0.025 | -0.025 | -0.026 | -0.025 | -0.025 | -0.074 | -0.075 | -0.076 | -0.077 | -0.071 | -0.072 | -0.074 |
| | 0.012** | 0.013** | 0.017** | 0.026** | 0.011** | 0.011** | 0.017** | 0.019** | 0.016** | 0.015** | 0.017** | 0.029** | 0.025** | 0.019** |
| Volatility | -0.087 | -0.085 | -0.081 | -0.082 | -0.088 | -0.086 | -0.081 | 0.258 | 0.262 | 0.259 | 0.262 | 0.254 | 0.256 | 0.258 |
| | 0.148 | 0.151 | 0.163 | 0.146 | 0.136 | 0.163 | 0.163 | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| Leverage | 0.211 | 0.208 | 0.2 | 0.207 | 0.212 | 0.214 | 0.21 | 0.585 | 0.585 | 0.584 | 0.582 | 0.594 | 0.588 | 0.587 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| R-sq | 0.169 | 0.17 | 0.172 | 0.17 | 0.169 | 0.17 | 0.17 | | | | | | | |

## Table 3.1. Average PACQ and number of observation per country and year

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006. Takeover activity PACQ is the fraction of acquisition deals announced, for targets in the same industry over the past five years, in five countries of the region (Brazil, Chile, Colombia, Peru, and Venezuela)

| Country | Variable | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|
| **Brazil** | | | | | | | |
| | average | 0.13 | 0.13 | 0.12 | 0.11 | 0.11 | 0.11 |
| 455 | N. obs. | 74 | 76 | 72 | 73 | 81 | 79 |
| **Chile** | | | | | | | |
| | average | 0.12 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| 221 | N. obs. | 38 | 38 | 36 | 41 | 38 | 30 |
| **Colombia** | | | | | | | |
| | average | 0.15 | 0.14 | 0.15 | 0.14 | 0.14 | |
| 88 | N. obs. | 17 | 17 | 16 | 20 | 18 | |
| **Peru** | | | | | | | |
| | average | 0.11 | 0.11 | 0.12 | 0.12 | 0.13 | 0.13 |
| 138 | N. obs. | 23 | 28 | 24 | 30 | 27 | 6 |
| **Venezuela** | | | | | | | |
| | average | 0.2 | | 0.16 | 0.15 | 0.19 | 0.19 |
| 33 | N. obs. | 8 | | 9 | 9 | 5 | 2 |

## Table 3.2. Selected statistics per country and cross-listed shares in the US

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.
Average RAT1, GAP1, TOBINQ, LSIZE, Volatility, Leverage and number of observations.
Cross-listing CLISTING is a dummy variable equal to 1 for firms with liquid equity securities listed on a US stock exchange, and zero otherwise. Liquidity is measured as the standard deviation of monthly stock price returns, over the previous 24 months.

**Panel A:** CLISTING = 0, not listed in the US (554 obs.)

| Variable | Brazil | Chile | Colombia | Peru | Venezuela |
|---|---|---|---|---|---|
| RAT1 | 0.62 | 0.8 | 0.83 | 0.89 | 0.93 |
| GAP1 | 28.67 | 8.69 | 8.31 | 2.63 | 5.52 |
| TOBINQ | 1.33 | 1.17 | 0.93 | 1.21 | 0.81 |
| LSIZE | 6.47 | 7.05 | 6.66 | 5.59 | 5.28 |
| Volatility | 0.54 | 0.31 | 0.41 | 0.42 | 0.54 |
| Leverage | 0.64 | 0.47 | 0.44 | 0.48 | 0.44 |
| N. Obs. | 221 | 129 | 78 | 112 | 14 |

**Panel B:** CLISTING = 1, listed in the US (381 obs., 87firms)

| Variable | Brazil | Chile | Colombia | Peru | Venezuela |
|---|---|---|---|---|---|
| RAT1 | 0.56 | 0.91 | 0.98 | 0.8 | 1 |
| GAP1 | 25.83 | 4.09 | 0.5 | 16.25 | 0 |
| TOBINQ | 1.23 | 1.29 | 0.84 | 1.61 | 0.65 |
| LSIZE | 7.84 | 7.57 | 6.44 | 7.54 | 6.29 |
| Volatility | 0.53 | 0.32 | 0.29 | 0.37 | 0.6 |
| Leverage | 0.58 | 0.53 | 0.48 | 0.54 | 0.38 |
| N. Obs. | 234 | 92 | 10 | 26 | 19 |

## Table 3.3. Selected statistics per country and shareholders rights

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.
Average RAT1, GAP1, TOBINQ, LSIZE, Volatility, Leverage and number of observations.
Shareholders rights SHRRTS is a dummy variable equal to 1 for firms with single-class shares (voting shares), 0 for multiple-class shares.

**Panel A:** SHRRTS = 0, multiple-class shares

| Variable | Brazil | Chile | Colombia | Peru | Venezuela |
|---|---|---|---|---|---|
| RAT1 | 0.56 | | 0.78 | | 0.67 |
| GAP1 | 28.87 | | 7.23 | | 25.76 |
| TOBINQ | 1.22 | | 1.07 | | 0.67 |
| LSIZE | 7.2 | | 7.14 | | 5.42 |
| Volatility | 0.54 | | 0.34 | | 0.45 |
| Leverage | 0.61 | | 0.59 | | 0.38 |
| N. Obs. | 415 | | 5 | | 3 |

**Panel B**: SHRRTS = 1, single-class shares

| Variable | Brazil | Chile | Colombia | Peru | Venezuela |
|---|---|---|---|---|---|
| RAT1 | 0.88 | 0.85 | 0.85 | 0.88 | 1 |
| GAP1 | 9.94 | 6.77 | 7.44 | 5.2 | 0 |
| TOBINQ | 1.86 | 1.22 | 0.91 | 1.29 | 0.72 |
| LSIZE | 6.94 | 7.26 | 6.6 | 5.96 | 5.9 |
| Volatility | 0.53 | 0.31 | 0.4 | 0.41 | 0.59 |
| Leverage | 0.53 | 0.49 | 0.43 | 0.49 | 0.4 |
| N. Obs. | 40 | 221 | 83 | 138 | 30 |

## Table 3.4. (In)Variability of corporate governance mechanisms

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.
Average coefficient of variation (mean/standard deviation) for firms with two or more annual observations for which there is some variability-the standard deviation is not null.

- Firm/Ind: Firm specific characteristic / industry characteristic
- Ext./Int.: Decided externally to the firm / decided within the firm
- Endo./Pred.: Endogenous variable / predetermined variable

**Panel A:** Governance mechanisms with little variability

| Variable | Firms | Mean | Firm/Ind | Ext/Int | Endo/Pred. |
|---|---|---|---|---|---|
| SHRRTS | 4 | 1.093 | Firm | Int. | Endo. |
| Flotanv | 4 | 1.093 | Firm | Int. | Endo. |
| CFCON1 | 17 | 1.044 | Firm | Int. | Pred. |
| CLISTING | 20 | 1.049 | Firm | Int. | Endo. |
| Flotav | 23 | 0.694 | Firm | Int. | Endo. |
| BG1 (*) | 26 | 1.137 | Firm | Int. | Endo. |
| NGOVOWN (*) | 36 | 1.921 | Firm | Ext. | Endo. |
| BHD | 37 | 1.379 | Firm | Ext. | Endo. |
| NINSOWN (*) | 39 | 1.148 | Firm | Ext. | Endo. |
| GOVOWN | 46 | 1.587 | Firm | Ext. | Endo. |
| INSOWN | 86 | 0.788 | Firm | Ext. | Endo. |
| RAT1 | 92 | 0.158 | Firm | Int. | Endo. |

**Panel B:** Governance mechanisms with high variability

| Variable | Firms | Mean | Firm/Ind. | Ext./Int. | Endo./Pred. |
|---|---|---|---|---|---|
| GAP1 | 109 | 0.309 | Firm | Int. | Endo. |
| Shholdrs (*) | 112 | 0.306 | Firm | Ext. | Pred. |
| TOP2_3 | 114 | 0.698 | Firm | Ext. | Endo. |
| BHS | 136 | 0.619 | Firm | Ext. | Endo. |
| NGIV (*) | 190 | 0.392 | Ind. | Ext. | Pred. |
| NGICF (*) | 190 | 0.388 | Ind. | Ext. | Pred. |
| NFAMCF (*) | 192 | 0.200 | Ind. | Ext. | Pred. |
| NFAMV (*) | 194 | 0.197 | Ind. | Ext. | Pred. |
| NINSTIV (*) | 194 | 0.186 | Ind. | Ext. | Pred. |
| NINSTICF (*) | 194 | 0.184 | Ind. | Ext. | Pred. |
| NCORPV (*) | 195 | 0.093 | Ind. | Ext. | Pred. |
| NCORPCF (*) | 195 | 0.084 | Ind. | Ext. | Pred. |
| Volatility | 198 | 0.232 | Firm | Ext. | Pred. |
| Leverage | 198 | 0.151 | Firm | Int. | Endo. |
| PACQ | 198 | 0.095 | Ind. | Ext. | Pred. |
| LSIZE | 198 | 0.044 | Firm | Int. | Pred. |

(*) This variable is defined in Table 3.9

## Table 3.5. Distribution of firm value (Tobin's Q) by industry and country

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.
Frequency of observations and distribution of mean Tobin's Q ratios by industry and country

**Brazil**

| Industry | Obs. | Mean Tobin's Q |
|---|---|---|
| Construction | 6 | 1.09 |
| Finance_Insurance | 27 | 1.09 |
| Information | 102 | 1.25 |
| Management_Co | 8 | 2.19 |
| Manufacturing | 217 | 1.28 |
| Mining | 10 | 1.36 |
| Other_Svcs | 6 | 0.82 |
| Retail_Trade | 19 | 1.62 |
| Transportation | 4 | 2.88 |
| Utilities | 52 | 1.08 |
| Wholesale_Trade | 4 | 1.08 |
| Agriculture | 2 | 0.59 |
| **Total** | **455** | **1.28** |

**Chile**

| Industry | Obs. | Mean Tobin's Q |
|---|---|---|
| Finance_Insurance | 44 | 1.04 |
| Information | 16 | 1.30 |
| Management_Co | 15 | 1.34 |
| Manufacturing | 62 | 1.27 |
| Mining | 6 | 1.40 |
| Professional_Svcs | 5 | 0.98 |
| Retail_Trade | 21 | 1.61 |
| Transportation | 12 | 1.36 |
| Utilities | 38 | 1.04 |
| **Total** | **221** | **1.22** |

**Peru**

| Industry | Obs. | Mean Tobin's Q |
|---|---|---|
| Agriculture | 15 | 0.43 |
| Construction | 6 | 1.04 |
| Finance_Insurance | 12 | 1.03 |
| Information | 5 | 0.96 |
| Management_Co | 3 | 0.74 |
| Manufacturing | 38 | 1.18 |
| Mining | 44 | 1.90 |
| Utilities | 10 | 1.24 |
| Wholesale_Trade | 5 | 0.94 |
| **Total** | **138** | **1.29** |

**Colombia**

| Industry | Obs. | Mean Tobin's Q |
|---|---|---|
| Finance_Insurance | 31 | 0.88 |
| Manufacturing | 33 | 0.80 |
| Mining | 7 | 1.31 |
| Retail_Trade | 10 | 0.84 |
| Utilities | 7 | 1.37 |
| **Total** | **88** | **0.92** |

**Venezuela**

| Industry | Obs. | Mean Tobin's Q |
|---|---|---|
| Finance_Insurance | 6 | 0.81 |
| Manufacturing | 24 | 0.68 |
| Real_Estate | 2 | 0.80 |
| Utilities | 1 | 0.73 |
| **Total** | **33** | **0.72** |

## Table 3.6. Hausman (1978) specification test for endogeneity

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.
Test statistics are $\chi^2$ distributed with 1 degree of freedom.
Ho: OLS and 2SLS estimators are both consistent, OLS estimators are efficient.
Ha: OLS estimators are inconsistent, 2SLS estimators are consistent.

**Panel A:** OWN= RAT1

| Equation | Suspected endogenous variable | Test statistic | p-value | Test suggests |
|---|---|---|---|---|
| RAT1 | BIND | 58.689 | 0 | reject Ho at 5% |
| TOP2_3 | RAT1 | 10.412 | 0.001 | reject Ho at 5% |
| TOP2_3 | CIGOWN | 5.017 | 0.025 | reject Ho at 5% |
| TOP2_3 | BIND | 5.269 | 0.022 | reject Ho at 5% |
| TOP2_3 | Leverage | 13.587 | 0 | reject Ho at 5% |
| CIGOWN | RAT1 | 22.145 | 0 | reject Ho at 5% |
| CIGOWN | TOP2_3 | 1.457 | 0.227 | |
| CIGOWN | BIND | 6.89 | 0.009 | reject Ho at 5% |
| CIGOWN | Leverage | 0.377 | 0.539 | |
| BIND | RAT1 | 16.991 | 0 | reject Ho at 5% |
| BIND | TOP2_3 | 9.337 | 0.002 | reject Ho at 5% |
| BIND | CIGOWN | 4.573 | 0.032 | reject Ho at 5% |
| Leverage | RAT1 | 121.277 | 0 | reject Ho at 5% |
| Leverage | BIND | 83.936 | 0 | reject Ho at 5% |
| TOBINQ | RAT1 | 7.714 | 0.005 | reject Ho at 5% |
| TOBINQ | TOP2_3 | 23.489 | 0 | reject Ho at 5% |
| TOBINQ | CIGOWN | 6.457 | 0.011 | reject Ho at 5% |
| TOBINQ | BIND | 29.224 | 0 | reject Ho at 5% |
| TOBINQ | Leverage | 15.344 | 0 | reject Ho at 5% |

**Panel B:** OWN= GAP1

| Equation | S. endogenous v. | Test statistic | p-value | Test suggests |
|---|---|---|---|---|
| GAP1 | BIND | 65.64 | 0 | reject Ho at 5% |
| TOP2_3 | GAP1 | 9.692 | 0.002 | reject Ho at 5% |
| TOP2_3 | CIGOWN | 7.163 | 0.007 | reject Ho at 5% |
| TOP2_3 | BIND | 2.108 | 0.146 | |
| TOP2_3 | Leverage | 39.504 | 0 | reject Ho at 5% |
| CIGOWN | GAP1 | 13.839 | 0 | reject Ho at 5% |
| CIGOWN | TOP2_3 | 0.036 | 0.85 | |
| CIGOWN | BIND | 3.588 | 0.058 | reject Ho at 10% |
| CIGOWN | Leverage | 8.74 | 0.003 | reject Ho at 5% |
| BIND | GAP1 | 31.287 | 0 | reject Ho at 5% |
| BIND | TOP2_3 | 14.337 | 0 | reject Ho at 5% |
| BIND | CIGOWN | 2.688 | 0.101 | |
| Leverage | GAP1 | 136.231 | 0 | reject Ho at 5% |
| Leverage | BIND | 72.38 | 0 | reject Ho at 5% |
| TOBINQ | GAP1 | 10.425 | 0.001 | reject Ho at 5% |
| TOBINQ | TOP2_3 | 30.959 | 0 | reject Ho at 5% |
| TOBINQ | CIGOWN | 8.569 | 0.003 | reject Ho at 5% |
| TOBINQ | BIND | 31.498 | 0 | reject Ho at 5% |
| TOBINQ | Leverage | 3.952 | 0.047 | reject Ho at 5% |

## Table 3.7. Correlation coefficients between the residuals of the 2SLS regressions

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.
Printed values are significant at 10%, stars indicate significance at 5% level.

**Panel A:** OWN=RAT1

| | RAT1 | TOP2_3 | CIGOWN | BIND | Leverage | TOBINQ |
|---|---|---|---|---|---|---|
| **RAT1** | 1 | | | | | |
| **TOP2_3** | 0.1830* | 1 | | | | |
| **CIGOWN** | -0.4288* | -0.1027* | 1 | | | |
| **BIND** | 0.5898* | 0.5048* | -0.3064* | 1 | | |
| **Leverage** | 0.2727* | 0.4066* | -0.2004* | -0.1621* | 1 | |
| **TOBINQ** | -0.4282* | -0.9227* | 0.1167* | -0.7225* | -0.3148* | 1 |

**Panel B:** OWN=GAP1

| | RAT1 | TOP2_3 | CIGOWN | BIND | Leverage | TOBINQ |
|---|---|---|---|---|---|---|
| **GAP1** | 1 | | | | | |
| **TOP2_3** | -0.1694* | 1 | | | | |
| **CIGOWN** | 0.2876* | 0.2159* | 1 | | | |
| **BIND** | -0.5497* | 0.4445* | -0.0987* | 1 | | |
| **Leverage** | -0.2440* | 0.4548* | -0.1158* | -0.1629* | 1 | |
| **TOBINQ** | 0.4645* | -0.8790* | -0.1453* | -0.7182* | -0.3642* | 1 |

## Table 3.8. Order condition for identification

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.
Total number of endogenous variables in the system = 6
Total number of predetermined variables in the system = 20
(a) Number of endogenous variables **included less 1** in the equation (right-hand-side endogenous variables)
(b) Number of predetermined variables **excluded** from the equation
A given equation is identified if (b) > (a)
OWN =GAP1 or RAT1

| Equation | (a) Included less 1 | (b) Excluded | (b) >(a) |
|---|---|---|---|
| GAP1 or RAT1 | 1 | 7 | Identified |
| TOP2_3 | 4 | 12 | Identified |
| CIGOWN | 4 | 11 | Identified |
| BIND | 3 | 10 | Identified |
| Leverage | 2 | 4 | Identified |
| TOBINQ | 5 | 7 | Identified |

## Table 3.9. Descriptive Statistics

935 observations, 198 firms from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006.

### **Panel A:** Governance mechanisms

GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights held by dominant shareholders. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. CIGOWN is the percentage of voting rights held by combined institutional investors and governments excluding dominant shareholders. Board independence (BIND) is calculated as 1 - (the number of insider board members) divided by (the number of board members). Leverage is computed as Total liabilities divided by Total assets. Tobin's Q ratios are defined as the sum of Total liabilities and Market value of equity divided by Total assets. TOBINQ is the natural logarithm of the Tobin's Q ratio. CFCON1 is a dummy variable that takes the value of 1 if dominant shareholders are corporations or family groups, and zero otherwise. Firm size is calculated as the natural logarithm of Total assets (LSIZE). Takeover activity PACQ is the fraction of acquisition deals announced, for targets in the same industry over the past five years, in five countries of the region (Brazil, Chile, Colombia, Peru, and Venezuela). Volatility is measured by the standard deviation of monthly stock price returns over the previous 24 months. Cross-listing CLISTING is a dummy variable equal to 1 for firms with liquid equity securities listed on a US stock exchange, and zero otherwise. LAMBDA1 is the inverse Mills ratio from a Heckman type regression, is used with RAT1.LAMBDA2 is the inverse Mills ratio from a Heckman type regression, is used with GAP1. SOA is a dummy variable equal to 1 for observations after year 2002, and zero otherwise. CL_SOA is the interaction term between CLISTING and SOA. BSIZE is the number of board members. DUAL is a dummy variable equal to 1 if the CEO is also the chairman of the board, and zero otherwise. TOBINLAG is the lag value of TOBINQ. Shareholders rights SHRRTS is a dummy variable equal to 1 for firms with single-class shares (voting shares), 0 for multiple-class shares. NISTI is the year-industry average number of combined institutional investors and government agencies with voting rights. Mining is a dummy variable equal to 1 for mining firms, and zero otherwise. Financial is a dummy variable equal to 1 for financial firms, and zero otherwise. Utilities is a dummy variable equal to 1 for utility firms, and zero otherwise. Brazil, Chile, Colombia, Peru and Venezuela are country dummies. The column Count indicates how many observations are not zero for those variables

| Variable | Mean | Median | Std. Dev. | Min | Max | Count |
|---|---|---|---|---|---|---|
| GAP1 | 16.39 | 5.72 | 21.6 | -7.78 | 87.04 | |
| RAT1 | 0.73 | 0.87 | 0.3 | 0.03 | 1.11 | |
| TOP2_3 | 8.75 | 6.64 | 9.76 | 0 | 50 | |
| CIGOWN | 7.19 | 0 | 10.54 | 0 | 45.87 | |
| BIND | 0.67 | 0.63 | 0.19 | 0 | 1 | |
| Leverage | 0.54 | 0.53 | 0.23 | 0.02 | 3.11 | |
| TOBINQ | 0.09 | 0.07 | 0.43 | -1.26 | 1.8 | |
| Tobin's Q | 1.21 | 1.07 | 0.62 | 0.28 | 6.05 | |
| CFCON1 | 0.76 | 1 | 0.42 | 0 | 1 | 715 |
| LSIZE | 6.92 | 6.81 | 1.63 | 1.48 | 11.84 | |
| PACQ | 0.12 | 0.13 | 0.07 | 0 | 0.22 | |
| Volatility | 0.45 | 0.41 | 0.23 | 0.09 | 2.56 | |

**Table 3.9. Continued**

| Variable | Mean | Median | Std. Dev. | Min | Max | Count |
|---|---|---|---|---|---|---|
| CLISTING | 0.41 | 0 | 0.49 | 0 | 1 | 381 |
| LAMBDA1 | 1.06 | 1 | 0.54 | 0.09 | 2.85 | |
| LAMBDA2 | 1.06 | 1 | 0.55 | 0.1 | 2.87 | |
| SOA | 0.66 | 1 | 0.47 | 0 | 1 | 616 |
| CL_SOA | 0.28 | 0 | 0.45 | 0 | 1 | 263 |
| BSIZE | 8 | 7.89 | 2.77 | 1 | 18 | |
| DUAL | 0.14 | 0 | 0.34 | 0 | 1 | 128 |
| TOBINLAG | 0.03 | 0.01 | 0.42 | -1.31 | 2.02 | |
| SHRRTS | 0.55 | 1 | 0.5 | 0 | 1 | 512 |
| NINSTI | 1.45 | 1.21 | 0.64 | 0 | 7 | |
| Mining | 0.07 | 0 | 0.26 | 0 | 1 | 67 |
| Financial | 0.13 | 0 | 0.33 | 0 | 1 | 120 |
| Utilities | 0.12 | 0 | 0.32 | 0 | 1 | 108 |
| Brazil | 0.49 | 0 | 0.5 | 0 | 1 | 455 |
| Chile | 0.24 | 0 | 0.43 | 0 | 1 | 221 |
| Colombia | 0.09 | 0 | 0.29 | 0 | 1 | 88 |
| Peru | 0.15 | 0 | 0.35 | 0 | 1 | 138 |
| Venezuela | 0.04 | 0 | 0.18 | 0 | 1 | 33 |

**Panel B:** Additional governance measures

BG1 is a dummy variable equal to 1 if the dominant shareholder belongs to one of the 225 identified business groups. Shholdrs is the number of identifiable named shareholders holding non-floating shares. BHS is the sum of the percentage of voting rights held by all blockholders (Family+Corporation+Other) excluding dominant shareholders. BHD is a dummy variable equal to 1 if an aggregated blockholder exists, as defined in BHS, and zero otherwise. INSOWN is the percentage of voting rights held by institutional investors excluding dominant shareholders. NINSOWN is the number of institutional investors, excluding dominant shareholders which hold voting rights. GOVOWN is the percentage of voting rights held by governments excluding dominant shareholders. NGOVOWN is the number of government agencies excluding dominant shareholders which hold voting rights. NINSTIV is the annual industry average number of institutional investors with voting rights. NINSTICF is the annual industry average number of institutional investors with cash-flow rights. NFAMV is the annual industry average number of families with voting rights. NFAMCF is the annual industry average number of families with cash-flow rights. NCORPV is the annual industry average number of corporations with voting rights. NCORPCF is the annual industry average number of corporations with cash-flow rights. NGIV is the annual industry average number of government agencies with voting rights. NGICF is the annual industry average number of government agencies with cash-flow rights. Flotav is a dummy variable equal to 1 if the firm has outstanding floating voting shares, and zero otherwise. Flotanv is a dummy variable equal to 1 if the firm has outstanding floating non-voting shares, and zero otherwise. ControlXX indicates the number of firms in which the dominant shareholder controls more than XX% of voting rights. The column Count indicates how many observations are not zero for those variables.

**Table 3.9. Continued**

| Variable | Mean | Median | Max | Min | Std. Dev. | Count |
|---|---|---|---|---|---|---|
| BG1 | 0.59 | 1 | 1 | 0 | 0.49 | 554 |
| Shholdrs | 6.6 | 5 | 18 | 1 | 4.79 | |
| BHS | 17.09 | 11.31 | 76.03 | 0 | 17.71 | |
| BHD | 0.72 | 1 | 1 | 0 | 0.45 | 677 |
| INSOWN | 5.57 | 0 | 45.87 | 0 | 9.42 | |
| NINSOWN | 0.41 | 0 | 1 | 0 | 0.49 | 385 |
| GOVOWN | 1.62 | 0 | 42.27 | 0 | 5.47 | |
| NGOVOWN | 0.14 | 0 | 1 | 0 | 0.35 | 129 |
| NINSTIV | 1.22 | 1.04 | 7 | 0 | 0.51 | |
| NINSTICF | 1.25 | 1.09 | 7 | 0 | 0.54 | |
| NFAMV | 0.62 | 0.62 | 3 | 0 | 0.25 | |
| NFAMCF | 0.5 | 0.56 | 3 | 0 | 0.26 | |
| NCORPV | 2.66 | 2.7 | 8 | 0 | 0.73 | |
| NCORPCF | 2.7 | 2.78 | 8 | 0 | 0.73 | |
| NGIV | 0.23 | 0.13 | 2.5 | 0 | 0.3 | |
| NGICF | 0.25 | 0.14 | 2.5 | 0 | 0.31 | |
| Flotav | 0.94 | 1 | 1 | 0 | 0.23 | 882 |
| Flotanv | 0.45 | 0 | 1 | 0 | 0.5 | 421 |
| Control50 | 0.6 | 1 | 1 | 0 | 0.49 | 560 |
| Control60 | 0.41 | 0 | 1 | 0 | 0.49 | 386 |
| Control70 | 0.3 | 0 | 1 | 0 | 0.46 | 282 |
| Control80 | 0.21 | 0 | 1 | 0 | 0.41 | 195 |

## Table 3.10. Correlation matrix, 935 observations 5 countries, 2001-2006

Brazil, Chile, Colombia, Peru and Venezuela .Printed values are significant at 10%, stars indicate significance at 5% level. Alternate specifications are strikethrough.

| | RAT1 | GAP1 | TOP2_3 | CIGOWN | BIND | Leverage | TOBINQ | CFCON1 | LSIZE | PACQ | Volatility | CLISTING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAT1 | 1 | | | | | | | | | | | |
| GAP1 | ~~-0.8720*~~ | 1 | | | | | | | | | | |
| TOP2_3 | 0.0811* | -0.2060* | 1 | | | | | | | | | |
| CIGOWN | 0.1285* | -0.2346* | -0.1043* | 1 | | | | | | | | |
| BIND | | | | 0.0892* | 1 | | | | | | | |
| Leverage | -0.1593* | 0.1820* | | | -0.1243* | 1 | | | | | | |
| TOBINQ | -0.0737* | 0.0621 | | | 0.2041* | 0.1457* | 1 | | | | | |
| CFCON1 | -0.1594* | 0.1395* | 0.1058* | -0.0886* | -0.1630* | -0.0689* | 0.1210* | 1 | | | | |
| LSIZE | -0.1404* | | | 0.1245* | 0.1659* | 0.2044* | 0.0656* | -0.2592* | 1 | | | |
| PACQ | 0.0561 | -0.0767* | 0.1068* | 0.0618 | -0.2024* | | -0.0827* | 0.2292* | -0.1253* | 1 | | |
| Volatility | -0.1176* | 0.1404* | | -0.1543* | | 0.1882* | -0.1071* | 0.0593 | -0.2156* | | 1 | |
| CLISTING | -0.1014* | 0.0608 | 0.1083* | 0.1152* | 0.1567* | | 0.0767* | -0.1917* | 0.3674* | -0.1987* | | 1 |
| LAMBDA1 | 0.1844* | ~~-0.1739*~~ | | | -0.3063* | -0.0745* | -0.2032* | 0.2229* | -0.7011* | 0.3610* | -0.0865* | -0.5020* |
| LAMBDA2 | ~~0.1555*~~ | -0.1119* | | | -0.2981* | -0.0667* | -0.1963* | 0.2280* | -0.6961* | 0.3650* | -0.0853* | -0.5042* |
| SOA | | | | | | | 0.3029* | | 0.1119* | | -0.1119* | 0.055 |
| CL_SOA | -0.0683* | | 0.0615 | 0.0627 | 0.1261* | | 0.1515* | -0.1521* | 0.3546* | -0.1313* | | 0.7544* |
| BSIZE | -0.0962* | | 0.1003* | 0.1038* | 0.4853* | | 0.1857* | -0.1126* | 0.3088* | -0.1571* | -0.1198* | 0.2852* |
| DUAL | -0.1334* | 0.1577* | | -0.1622* | -0.0618 | 0.1408* | | | | | 0.1873* | |
| TOBINLAG | -0.1069* | 0.0788* | 0.0731* | | 0.1926* | 0.1510* | ~~0.8267*~~ | 0.0996* | 0.1202* | -0.0826* | -0.1391* | 0.1242* |
| SHRRTS | 0.5064* | -0.5138* | | 0.2839* | -0.0625 | -0.2798* | -0.0850* | -0.0736* | -0.1482* | | -0.3231* | -0.2127* |
| NINSTI | 0.1011* | -0.0828* | -0.0983* | 0.0903* | | | -0.1641* | -0.3005* | 0.1372* | -0.2206* | -0.1109* | |
| Mining | 0.0967* | -0.1330* | | | 0.0713* | -0.1777* | 0.1852* | 0.0857* | -0.1301* | | | |
| Financial | 0.1433* | -0.0987* | -0.0995* | | -0.1235* | 0.1548* | -0.1183* | -0.1565* | 0.2334* | | -0.1200* | -0.0774* |
| Utilities | | -0.0659* | -0.0865* | 0.1250* | | 0.3217* | -0.0626 | -0.2886* | 0.1958* | -0.1361* | -0.0776* | 0.0612 |
| Brazil | -0.4626* | 0.4879* | | -0.3197* | | 0.2756* | 0.1654* | 0.0961* | 0.1532* | | 0.3560* | 0.2116* |
| Chile | 0.2168* | -0.2478* | -0.0562 | 0.4177* | 0.063 | -0.1084* | | -0.1128* | 0.1176* | -0.0835* | -0.3443* | |
| Colombia | 0.1296* | -0.1339* | | -0.0771* | | -0.1336* | -0.1818* | 0.0924* | -0.0565 | 0.0940* | -0.0836* | -0.1928* |
| Peru | 0.2054* | -0.2157* | | | -0.1368* | -0.0899* | | | -0.2454* | | -0.0727* | -0.1855* |
| Venezuela | 0.1541* | -0.1244* | | | | -0.1127* | -0.2226* | -0.0715* | -0.1245* | 0.1297* | 0.1003* | 0.0655* |

## Table 3.10. Continued

| | LAMBDA1 | LAMBDA2 | SOA | CL_SOA | BSIZE | DUAL | TOBINLAG | SHRRTS | NINSTI | Mining | Financial | Utilities |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LAMBDA1** | 1 | | | | | | | | | | | |
| **LAMBDA2** | ~~0.9959*~~ | 1 | | | | | | | | | | |
| **SOA** | -0.1195* | -0.1212* | 1 | | | | | | | | | |
| **CL_SOA** | -0.4304* | -0.4332* | 0.4502* | 1 | | | | | | | | |
| **BSIZE** | -0.5169* | -0.5097* | | 0.2407* | 1 | | | | | | | |
| **DUAL** | -0.0583 | -0.0582 | | | -0.1983* | 1 | | | | | | |
| **TOBINLAG** | -0.2367* | -0.2313* | 0.2068* | 0.1304* | 0.2065* | | 1 | | | | | |
| **SHRRTS** | 0.4068* | 0.4016* | | -0.1626* | | -0.3069* | -0.0949* | 1 | | | | |
| **NINSTI** | -0.0955* | -0.1007* | 0.0694* | | 0.0680* | | -0.1590* | 0.0920* | 1 | | | |
| **Mining** | 0.0837* | 0.0772* | | | 0.1734* | -0.1106* | 0.1305* | 0.1692* | -0.1665* | 1 | | |
| **Financial** | | | | | | -0.0784* | -0.0868* | 0.1753* | 0.2121* | ~~-0.1066*~~ | 1 | |
| **Utilities** | -0.2313* | -0.2324* | | 0.0567 | 0.2789* | | -0.0743* | | 0.5687* | ~~-0.1004*~~ | ~~-0.1387*~~ | 1 |
| **Brazil** | -0.4101* | -0.4023* | | 0.1762* | | 0.2970* | 0.1701* | -0.8992* | -0.1430* | -0.1875* | -0.2009* | |
| **Chile** | -0.0857* | -0.0841* | | | 0.1390* | -0.2216* | 0.0727* | 0.5057* | 0.1474* | -0.0960* | 0.1177* | 0.0982* |
| **Colombia** | 0.4335* | 0.4339* | | -0.1528* | | -0.1284* | -0.2301* | 0.2562* | | | 0.2158* | |
| **Peru** | 0.3889* | 0.3753* | | -0.1530* | -0.0703* | -0.1219* | | 0.3782* | | 0.3988* | | -0.056 |
| **Venezuela** | -0.1254* | -0.1247* | | 0.0737* | | 0.1430* | -0.2081* | 0.1389* | | | | |

## Table 3.11. Three-stage least square results

935 observations from Brazil, Chile, Colombia, Peru and Venezuela for 2001-2006. Country dummies and constant term omitted. P-values below coefficients. P-values followed by * are significant at 10%; ** are significant at 5%; *** are significant at 1%

| | RAT1 | TOP2_3 | CIGOWN | BIND | Leverage | TOBINQ | GAP1 | TOP2_3 | CIGOWN | BIND | Leverage | TOBINQ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BIND | -1.04 | -1.88 | 23.12 | | 0.75 | 7.11 | 69.38 | 3.20 | 16.86 | | 0.71 | 5.91 |
| | 0.000*** | 0.63 | 0.000*** | | 0.000*** | 0.000*** | 0.000*** | 0.41 | 0.000*** | | 0.000*** | 0.000*** |
| CFCON1 | -0.08 | | | -0.01 | | | 5.04 | | | 0.00 | | |
| | 0.000*** | | | 0.43 | | | 0.001*** | | | 0.99 | | |
| LSIZE | -0.07 | -0.40 | 0.10 | -0.03 | 0.13 | | 5.79 | -0.21 | -0.16 | -0.04 | 0.12 | |
| | 0.000*** | 0.11 | 0.78 | 0.000*** | 0.000*** | | 0.000*** | 0.42 | 0.65 | 0.000*** | 0.000*** | |
| PACQ | 0.32 | 14.23 | 21.60 | 0.21 | -0.67 | -5.90 | -43.57 | 18.96 | 21.75 | 0.31 | -0.54 | -5.86 |
| | 0.026** | 0.004*** | 0.002*** | 0.095* | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.001*** | 0.009*** | 0.001*** | 0.000*** |
| Volatility | -0.05 | 2.15 | | | 0.36 | -1.17 | 5.80 | 3.00 | | | 0.35 | -1.22 |
| | 0.14 | 0.18 | | | 0.000*** | 0.000*** | 0.035** | 0.066* | | | 0.000*** | 0.000*** |
| CLISTING | -0.04 | | 7.15 | 0.04 | -0.05 | -1.72 | 1.68 | | 6.62 | 0.05 | -0.05 | -1.37 |
| | 0.23 | | 0.000*** | 0.16 | 0.099* | 0.000*** | 0.49 | | 0.000*** | 0.054* | 0.031** | 0.000*** |
| SOA | -0.05 | -0.97 | 1.87 | 0.00 | -0.05 | 0.01 | 2.62 | -0.97 | 1.35 | 0.01 | -0.05 | 0.04 |
| | 0.045** | 0.23 | 0.056* | 0.86 | 0.018** | 0.97 | 0.14 | 0.23 | 0.16 | 0.53 | 0.021** | 0.79 |
| CL_SOA | 0.07 | 2.16 | -3.82 | 0.00 | 0.08 | 0.27 | -4.21 | 2.74 | -2.81 | -0.01 | 0.08 | 0.18 |
| | 0.063* | 0.021** | 0.015** | 0.97 | 0.021** | 0.26 | 0.14 | 0.003*** | 0.066* | 0.77 | 0.008*** | 0.37 |
| LAMBDA | -0.25 | | 2.78 | -0.07 | 0.65 | -1.66 | 23.33 | | 1.89 | -0.09 | 0.56 | -0.99 |
| | 0.000*** | | 0.020** | 0.008*** | 0.000*** | 0.000*** | 0.000*** | | 0.11 | 0.000*** | 0.000*** | 0.000*** |
| DUAL | -0.05 | | | -0.01 | | 0.23 | 4.38 | | | -0.01 | | 0.15 |
| | 0.044** | | | 0.35 | | 0.083* | 0.022** | | | 0.44 | | 0.21 |
| SHRRTS | 0.33 | | | 0.05 | -0.09 | 0.79 | -25.12 | | | 0.04 | -0.13 | 0.86 |
| | 0.000*** | | | 0.052* | 0.024** | 0.001*** | 0.000*** | | | 0.091* | 0.001*** | 0.000*** |
| Mining | 0.07 | 1.54 | -0.59 | | 0.01 | | -7.88 | 2.80 | -0.08 | | 0.04 | |
| | 0.029** | 0.015** | 0.67 | | 0.73 | | 0.001*** | 0.000*** | 0.95 | | 0.17 | |
| Financial | 0.10 | 4.22 | -3.03 | | 0.22 | | -6.88 | 3.21 | -2.39 | | 0.18 | |
| | 0.000*** | 0.000*** | 0.018** | | 0.000*** | | 0.000*** | 0.001*** | 0.065* | | 0.000*** | |
| Utilities | 0.15 | -2.58 | | | 0.01 | | -10.66 | -2.97 | | | -0.02 | |
| | 0.000*** | 0.019** | | | 0.89 | | 0.000*** | 0.009*** | | | 0.57 | |
| RAT1/GAP1 | | -16.12 | 17.37 | -0.34 | -0.51 | 3.77 | | 0.10 | -0.26 | 0.00 | 0.00 | -0.02 |
| | | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | | 0.020** | 0.000*** | 0.000*** | 0.000*** | 0.038** |
| CIGOWN | | 0.24 | | 0.00 | | 0.10 | | -0.04 | | 0.00 | | 0.13 |
| | | 0.003*** | | 0.011** | | 0.026** | | 0.62 | | 0.59 | | 0.001*** |
| Leverage | | -14.82 | 1.29 | | | 3.46 | | -15.24 | 1.37 | | | 3.87 |
| | | 0.000*** | 0.73 | | | 0.000*** | | 0.000*** | 0.76 | | | 0.000*** |
| TOP2_3 | | | -0.21 | -0.02 | | 0.46 | | | -0.52 | -0.03 | | 0.36 |
| | | | 0.31 | 0.000*** | | 0.000*** | | | 0.004*** | 0.000*** | | 0.000*** |

## Table 3.11. Continued

| | RAT1 | TOP2_3 | CIGOWN | BIND | Leverage | TOBINQ | GAP1 | TOP2_3 | CIGOWN | BIND | Leverage | TOBINQ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BSIZE | | | | 0.03 | | -0.41 | | | | 0.03 | | -0.33 |
| | | | | 0.000*** | | 0.000*** | | | | 0.000*** | | 0.000*** |
| TOBINLAG | | | | | 0.12 | | | | | | 0.11 | |
| | | | | | 0.000*** | | | | | | 0.000*** | |
| NINSTI | | | 0.90 | | | | | | 0.67 | | | |
| | | | 0.11 | | | | | | 0.24 | | | |
| Walt-stat | 485.09 | 117.52 | 148.45 | 340.72 | 592.95 | 1075.52 | 511.93 | 105.96 | 161.58 | 362.85 | 640.77 | 996.26 |
| p-value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Note:** the $R^2$ is not reported for the 3SLS estimated because unlike in the OLS case, the sum of squared 3SLS residuals cannot be divided between the explained variation and the unexplained variation (Hayashi. 2000, p. 242)

## Table 4.1. Descriptive Statistics

72 Brazilian and Chilean firms, averages over a minimum of 1000 and a maximum of 5006 five minute intervals, September-November 2006. The equal-weighted spread (SPRE) is the difference between the ask and the bid, divided by the quoted midpoint. The time-weighted spread (WSPRE) is computed as the equal-weighted spread multiplied by the number of five minutes intervals that the last trade was standing. The effective spread (EFFEC) is the absolute difference between the trade price and the quoted midpoint, dividend by the quoted midpoint. The realized spread (REAL) is the signed difference between the trade price and the quoted midpoint 5 minutes after the quote. The intraday price impact (IMPA) is the signed difference between the quoted midpoint five minutes after the quote and the actual quoted midpoint, divided by the actual quoted midpoint. The daily price impact (AVEDI) is the ratio of the daily absolute return to dollar valued volume. INSOWN is the percentage of voting rights held by institutional investors excluding dominant shareholders. TOP1VR is the percentage of voting rights held by the dominant shareholder. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights held by dominant shareholders. TOP2_3 is the percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government. BSIZE is the number of board members. Board independence (BIND) is calculated as 1 - (the number of insider board members) divided by (the number of board members). Shareholders rights SHRRTS is a dummy variable equal to 1 for firms with single-class shares (voting shares), 0 for multiple-class shares. Cross-listing CLISTING is a dummy variable equal 1 for firms with liquid equity securities listed on a US stock exchange, and zero otherwise. DUAL is a dummy variable equal to 1 if the CEO is also the chairman of the board, and zero otherwise. Takeover activity PACQ is the fraction of acquisition deals announced, for targets in the same industry over the past five years, in five countries of the region (Brazil, Chile, Colombia, Peru, and Venezuela). DAYS is the time elapsed since the company went public. Firm size is calculated as the natural logarithm of Total assets (LSIZE). Mining is a dummy variable equal to 1 for mining firms, and zero otherwise. Financial is a dummy variable equal to 1 for financial firms, and zero otherwise. Utilities is a dummy variable equal to 1 for utility firms, and zero otherwise. Dollarvolume is the average daily dollar volume. Dvolatility is the standard deviation of daily stock returns Dstockp is the inverse of the stock price. Shholdrs is the number of identifiable named shareholders holding non-floating shares. Brazil is a dummy variable equal to 1 for Brazilian firms, and zero otherwise. Chile is a dummy variable equal to 1 for Chilean firms, and zero otherwise. Flotav is a dummy variable equal to 1 if the firm has outstanding floating voting shares, and zero otherwise. Flotanv is a dummy variable equal to 1 if the firm has outstanding floating non-voting shares, and zero otherwise. Floatv is the percentage of voting rights of floating shares. Floatcf is the percentage of cash-flow rights of floating shares. The column Count indicates how many observations equal 1 for the dummy variables only.

| Variable | Mean | Median | St. Dev. | Min. | Max. | Count |
|---|---|---|---|---|---|---|
| SPRE | 0.0040 | 0.0036 | 0.0019 | 0.0007 | 0.0097 | |
| WSPRE | 0.0108 | 0.0085 | 0.0081 | 0.0009 | 0.0352 | |
| EFFEC | 0.0018 | 0.0017 | 0.0008 | 0.0004 | 0.0045 | |
| REAL | 0.0015 | 0.0014 | 0.0007 | 0.0003 | 0.0041 | |
| IMPA | 0.0003 | 0.0002 | 0.0001 | 0 | 0.0007 | |
| AVEDI | 0.6533 | 0.3596 | 0.7380 | 0.0109 | 3.0356 | |
| INSOWN | 5.27 | 0 | 9.42 | 0 | 37.46 | |
| RAT1 | 0.64 | 0.57 | 0.30 | 0.03 | 1.11 | |
| GAP1 | 22.94 | 20.92 | 22.93 | -7.78 | 85.44 | |
| TOP1VR | 56.06 | 54.67 | 23.33 | 5.47 | 99.99 | |
| TOP2_3 | 8.67 | 5.74 | 9.68 | 0 | 37.77 | |
| BSIZE | 8.5 | 8 | 3.16 | 3 | 18 | |

**Table 4.1. Continued**

**Table 4.1. Continued**

| Variable | Mean | Median | St. Dev. | Min | Max | Count |
|---|---|---|---|---|---|---|
| BIND | 0.67 | 0.73 | 0.204 | 0 | 1 | |
| SHRRTS | 0.36 | 0 | 0.484 | 0 | 1 | 26 |
| CLISTING | 0.60 | 1 | 0.494 | 0 | 1 | 43 |
| DUAL | 0.19 | 0 | 0.399 | 0 | 1 | 14 |
| PACQ | 0.11 | 0.08 | 0.077 | 0 | 0.19 | |
| DAYS | 5900 | 6800 | 2100 | 1400 | 7900 | |
| Size | 13000 | 3000 | 29000 | 149 | 140000 | |
| LSIZE | 8.22 | 8.00 | 1.517 | 5.01 | 11.84 | |
| Leverage | 0.54 | 0.55 | 0.168 | 0.20 | 1.02 | |
| Financial | 0.06 | 0 | 0.231 | 0 | 1 | 4 |
| Mining | 0.04 | 0 | 0.201 | 0 | 1 | 3 |
| Utilities | 0.17 | 0 | 0.375 | 0 | 1 | 12 |
| Dollarvolume | 15.49 | 15.47 | 1.070 | 13.39 | 18.83 | |
| Dvolatility | 1.32 | 1.30 | 0.324 | 0.54 | 2.01 | |
| Dstockp | 0.82 | 0.12 | 2.462 | 0.02 | 16.81 | |
| Shholdrs | 6.04 | 5 | 3.858 | 1 | 15 | |
| Brazil | 0.81 | 1 | 0.399 | 0 | 1 | 58 |
| Chile | 0.19 | 0 | 0.399 | 0 | 1 | 14 |
| Flotav | 0.99 | 1 | 0.118 | 0 | 1 | 71 |
| Flotanv | 0.64 | 1 | 0.484 | 0 | 1 | 46 |
| Floatv | 22.32 | 20.26 | 17.104 | 0 | 89.29 | |
| Floatcf | 40.66 | 38.91 | 18.255 | 12.23 | 89.29 | |

## Table 4.2. Correlation matrix, 72 Brazilian and Chilean firms, 2006

Printed values are significant at 10%, stars indicate significance at 5% level. Alternate specifications are strikethrough.

| | SPRE | WSPRE | EFFEC | REAL | IMPA | AVEDI | RAT1 | GAP1 | TOP1VR | INSOWN | BSIZE | BIND |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SPRE** | 1 | | | | | | | | | | | |
| **WSPRE** | ~~0.8723*~~ | 1 | | | | | | | | | | |
| **EFFEC** | ~~0.9935*~~ | ~~0.8577*~~ | 1 | | | | | | | | | |
| **REAL** | ~~0.9855*~~ | ~~0.8532*~~ | ~~0.9872*~~ | 1 | | | | | | | | |
| **IMPA** | ~~0.5769*~~ | ~~0.4703*~~ | ~~0.6018*~~ | ~~0.4749*~~ | 1 | | | | | | | |
| **AVEDI** | ~~0.6249*~~ | ~~0.6991*~~ | ~~0.5953*~~ | ~~0.5967*~~ | ~~0.2963*~~ | 1 | | | | | | |
| **RAT1** | | | | | | | 1 | | | | | |
| **GAP1** | | | | | | | ~~-0.8853*~~ | 1 | | | | |
| **TOP1VR** | | | | | | | ~~-0.3848*~~ | ~~0.6500*~~ | 1 | | | |
| **INSOWN** | 0.2427* | 0.3507* | 0.2828* | 0.2486* | 0.3049* | | 0.2517* | -0.3286* | -0.3755* | 1 | | |
| **BSIZE** | -0.3479* | -0.3395* | -0.3342* | -0.3479* | | -0.3260* | | | | | 1 | |
| **BIND** | -0.2698* | -0.2271 | -0.2371* | -0.2715* | | | | -0.2556* | | | 0.4557* | 1 |
| **SHRRTS** | | | | | | | 0.5954* | -0.5689* | -0.5111* | 0.5492* | | |
| **CLISTING** | -0.4651* | -0.4351* | -0.4615* | -0.4732* | | -0.3485* | | | | | 0.4373* | 0.2446* |
| **PACQ** | | | | | | | | | | | | -0.2703* |
| **DAYS** | | | | | -0.2865* | | | | | | | |
| **LSIZE** | -0.6919* | -0.6373* | -0.6899* | -0.7024* | -0.3141* | -0.5797* | | | | -0.2148 | 0.2770* | 0.2065 |
| **Financial** | | | | | | | | | | | | |
| **Mining** | -0.2567* | | -0.2567* | -0.2447* | -0.2093 | | | | | | | |
| **Utilities** | | | | | | | | | | | 0.2581* | 0.2837* |
| **Dollarvolume** | -0.8023* | -0.7504* | -0.7935* | -0.7737* | -0.5392* | -0.7437* | | | | | 0.2465* | 0.2037 |
| **Dvolatility** | | | | | | | | | | -0.4951* | | |
| **Dstockp** | 0.2142 | 0.3773* | 0.2345* | 0.1963 | 0.3207* | | | | -0.2793* | 0.4356* | | |
| **Brazil** | | -0.2815* | | | -0.2609* | | -0.2032 | 0.2662* | 0.3303* | -0.8213* | | |

**Table 4.2. Continued**

| | SHRRTS | CLISTING | PACQ | DAYS | LSIZE | Financial | Mining | Utilitities | Dollarvolume | Dvolatility | Dstockp |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SHRRTS** | 1 | | | | | | | | | | |
| **CLISTING** | | 1 | | | | | | | | | |
| **PACQ** | | | 1 | | | | | | | | |
| **DAYS** | | | 0.5197* | 1 | | | | | | | |
| **LSIZE** | | 0.3538* | | 0.217 | 1 | | | | | | |
| **Financial** | | | | 0.207 | 0.4067* | 1 | | | | | |
| **Mining** | | | 0.2048 | | 0.2166 | | 1 | | | | |
| **Utilities** | | 0.2153 | | -0.1962 | | | | 1 | | | |
| **Dollarvolume** | | 0.4361* | | | 0.7462* | | 0.4162* | | 1 | | |
| **Dvolatility** | -0.3108* | | | -0.2780* | | | | | | 1 | |
| **Dstockp** | 0.3361* | | | | | 0.3431* | | | -0.2528* | -0.2861* | 1 |
| **Brazil** | -0.6535* | | | | | | | | | 0.5996* | -0.5262* |

## Table 4.3. Regression results

OLS regression with robust standard errors. 72 Brazilian and Chilean firms, 2006. The equal-weighted spread (SPRE) is the difference between the ask and the bid, divided by the quoted midpoint. The time-weighted spread (WSPRE) is computed as the equal-weighted spread multiplied by the number of five minutes intervals that the last trade was standing. The effective spread (EFFEC) is the absolute difference between the trade price and the quoted midpoint, dividend by the quoted midpoint. The realized spread (REAL) is the signed difference between the trade price and the quoted midpoint 5 minutes after the quote. The intraday price impact (IMPA) is the signed difference between the quoted midpoint five minutes after the quoted and the actual quoted midpoint, divided by the actual quoted midpoint. The daily price impact (AVEDI) is the ratio of the daily absolute return to dollar valued volume. TOP1VR is the percentage of voting rights held by the dominant shareholder. GAP1 is the difference between the percentage of voting rights and the percentage of cash-flow rights held by dominant shareholders. RAT1 is the ratio of the percentage of cash-flow rights to the percentage of voting rights held by dominant shareholders. INSOWN is the percentage of voting rights held by institutional investors excluding dominant shareholders. BSIZE is the number of board members. Board independence (BIND) is calculated as 1 - (the number of insider board members) divided by (the number of board members). Shareholders' rights SHRRTS is a dummy variable equal to 1 for firms with single-class shares (voting shares), 0 for multiple-class shares. Corss-listing CLISTING is a dummy variable equal to 1 for firms with liquid equity securities listed on a US stock exchange, and zero otherwise. Takeover activity PACQ is the fraction of acquisition deals announced, for targets in the same industry over the past five years, in five countries of the region (Brazil, Chile, Colombia, Peru, and Venezuela). DAYS: the time elapsed since the company went public Firm size is calculated as the natural logarithm of Total assets (LSIZE). Industry dummies for firms in the Mining, Financial, and Utilities industries. Country dummy for Brazilian firms. Average daily dollar volume (dollarvolume). The standard deviation of daily stock returns (dvolatility). The inverse of the stock price (dstockp).

**Panel A:** OWN=RAT1

| | SPRE | WSPRE | EFFEC | REAL | IMPA | AVEDI |
|---|---|---|---|---|---|---|
| RAT1 | 0.00089 | 0.00577 | 0.00029 | 0.00035 | -0.00007 | 0.09541 |
| | 0.037** | 0.012** | 0.105 | 0.029** | 0.167 | 0.661 |
| INSOWN | 0.00005 | 0.00009 | 0.00003 | 0.00002 | 0 | 0.00786 |
| | 0.134 | 0.498 | 0.117 | 0.152 | 0.023** | 0.367 |
| BIND | -0.00119 | -0.00339 | -0.00042 | -0.00052 | 0.00002 | 0.23562 |
| | 0.056* | 0.167 | 0.114 | 0.052* | 0.856 | 0.316 |
| CLISTING | -0.00049 | -0.00051 | -0.00022 | -0.00021 | 0 | -0.00391 |
| | 0.127 | 0.71 | 0.132 | 0.14 | 0.884 | 0.978 |
| BSIZE | -0.00005 | -0.00046 | -0.00002 | -0.00002 | 0 | -0.02914 |
| | 0.193 | 0.031** | 0.19 | 0.226 | 0.922 | 0.064* |
| DAYS | 0 | 0 | 0 | 0 | 0 | -0.00006 |
| | 0.207 | 0.503 | 0.295 | 0.076* | 0.088* | 0.167 |
| PACQ | -0.00284 | -0.01004 | -0.00136 | -0.00153 | 0.00011 | 0.7969 |
| | 0.111 | 0.24 | 0.093* | 0.043** | 0.683 | 0.411 |
| SHRRTS | -0.00051 | -0.00319 | -0.00017 | -0.00017 | 0.00001 | -0.24901 |
| | 0.253 | 0.082* | 0.394 | 0.358 | 0.824 | 0.122 |
| LSIZE | -0.00027 | -0.00154 | -0.00012 | -0.00015 | 0.00003 | -0.01226 |
| | 0.057* | 0.015** | 0.067* | 0.016** | 0.067* | 0.871 |
| Financial | 0.00043 | 0.00751 | 0.00017 | 0.00017 | -0.00002 | 0.42665 |
| | 0.417 | 0.018** | 0.48 | 0.454 | 0.75 | 0.078* |
| Mining | 0.00116 | 0.00711 | 0.00047 | 0.00044 | 0.00003 | 0.68535 |
| | 0.011** | 0.029** | 0.017** | 0.011** | 0.402 | 0.132 |

**Table 4.3. Continued**

| | SPRE | WSPRE | EFFEC | REAL | IMPA | AVEDI |
|---|---|---|---|---|---|---|
| Utilities | 0.00109 | 0.00283 | 0.00048 | 0.00044 | 0.00003 | -0.12072 |
| | 0.008*** | 0.144 | 0.011** | 0.012** | 0.407 | 0.465 |
| Brazil | 0.00034 | -0.00218 | 0.0002 | 0.00027 | -0.00004 | 0.40405 |
| | 0.749 | 0.625 | 0.701 | 0.566 | 0.651 | 0.285 |
| Dollarvolume | -0.00101 | -0.00403 | -0.00042 | -0.00033 | -0.00009 | -0.57337 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| Dvolatility | 0.00102 | -0.00078 | 0.00044 | 0.00031 | 0.00013 | -0.24856 |
| | 0.068* | 0.738 | 0.058* | 0.159 | 0.015** | 0.413 |
| Dstockp | 0.00001 | 0.00025 | 0.00001 | 0.00001 | 0.00001 | -0.02224 |
| | 0.79 | 0.448 | 0.628 | 0.788 | 0.339 | 0.379 |
| Observations | 72 | 72 | 72 | 72 | 72 | 72 |
| R-squared | 0.795 | 0.757 | 0.788 | 0.773 | 0.537 | 0.691 |

Robust p values in parentheses

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

**Table 4.3. Continued**

**Panel B:** OWN=GAP1

| | SPRE | WSPRE | EFFEC | REAL | IMPA | AVEDI |
|---|---|---|---|---|---|---|
| GAP1 | -0.00001 | -0.00008 | 0 | 0 | 0 | -0.00482 |
| | 0.15 | 0.005*** | 0.305 | 0.152 | 0.363 | 0.087* |
| INSOWN | 0.00005 | 0.00008 | 0.00003 | 0.00002 | 0 | 0.00451 |
| | 0.151 | 0.575 | 0.129 | 0.165 | 0.032** | 0.617 |
| BIND | -0.00126 | -0.00408 | -0.00044 | -0.00055 | 0.00002 | 0.18465 |
| | 0.052* | 0.113 | 0.113 | 0.052* | 0.818 | 0.443 |
| CLISTING | -0.00051 | -0.00073 | -0.00022 | -0.00021 | 0 | -0.02445 |
| | 0.126 | 0.605 | 0.133 | 0.138 | 0.91 | 0.857 |
| BSIZE | -0.00005 | -0.00046 | -0.00002 | -0.00002 | 0 | -0.02954 |
| | 0.209 | 0.034** | 0.204 | 0.246 | 0.936 | 0.063* |
| DAYS | 0 | 0 | 0 | 0 | 0 | -0.00006 |
| | 0.23 | 0.573 | 0.312 | 0.085* | 0.103 | 0.142 |
| PACQ | -0.00304 | -0.01114 | -0.00143 | -0.00162 | 0.00012 | 0.82248 |
| | 0.101 | 0.194 | 0.087* | 0.042** | 0.629 | 0.388 |
| SHRRTS | -0.00035 | -0.00283 | -0.00012 | -0.0001 | -0.00001 | -0.36644 |
| | 0.431 | 0.091* | 0.572 | 0.587 | 0.89 | 0.026** |
| LSIZE | -0.00025 | -0.00143 | -0.00011 | -0.00014 | 0.00003 | -0.01346 |
| | 0.080* | 0.022** | 0.083* | 0.023** | 0.083* | 0.848 |
| Financial | 0.00049 | 0.00814 | 0.00018 | 0.00019 | -0.00002 | 0.48522 |
| | 0.388 | 0.020** | 0.459 | 0.423 | 0.703 | 0.057* |
| Mining | 0.00118 | 0.00718 | 0.00048 | 0.00045 | 0.00003 | 0.67024 |
| | 0.015** | 0.035** | 0.020** | 0.014** | 0.413 | 0.134 |
| Utilities | 0.00111 | 0.00295 | 0.00049 | 0.00045 | 0.00003 | -0.11544 |
| | 0.010** | 0.143 | 0.012** | 0.015** | 0.432 | 0.481 |
| Brazil | 0.00044 | -0.00226 | 0.00024 | 0.00031 | -0.00005 | 0.27588 |
| | 0.698 | 0.626 | 0.663 | 0.527 | 0.552 | 0.474 |
| Dollarvolume | -0.00104 | -0.00419 | -0.00043 | -0.00034 | -0.00009 | -0.57321 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.001*** | 0.000*** |
| Dvolatility | 0.00107 | -0.00036 | 0.00046 | 0.00033 | 0.00012 | -0.21651 |
| | 0.065* | 0.875 | 0.058* | 0.149 | 0.016** | 0.463 |
| Dstockp | 0 | 0.00018 | 0.00001 | 0 | 0.00001 | -0.02588 |
| | 0.935 | 0.6 | 0.731 | 0.926 | 0.241 | 0.303 |
| Observations | 72 | 72 | 72 | 72 | 72 | 72 |
| R-squared | 0.791 | 0.759 | 0.785 | 0.768 | 0.528 | 0.703 |

Robust p values in parentheses

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

**Table 4.3. Continued**

**Panel C:** OWN=TOP1VR

| | SPRE | WSPRE | EFFEC | REAL | IMPA | AVEDI |
|---|---|---|---|---|---|---|
| TOP1VR | 0 | -0.00004 | 0 | 0 | 0 | -0.00758 |
| | 0.563 | 0.16 | 0.463 | 0.473 | 0.753 | 0.005*** |
| INSOWN | 0.00006 | 0.00012 | 0.00003 | 0.00003 | 0 | 0.00347 |
| | 0.095* | 0.43 | 0.089* | 0.109 | 0.060* | 0.641 |
| BIND | -0.00114 | -0.00351 | -0.0004 | -0.0005 | 0.00001 | 0.18572 |
| | 0.069* | 0.174 | 0.128 | 0.061* | 0.888 | 0.434 |
| CLISTING | -0.00044 | -0.00059 | -0.0002 | -0.00019 | -0.00001 | -0.04362 |
| | 0.171 | 0.696 | 0.163 | 0.175 | 0.793 | 0.733 |
| BSIZE | -0.00005 | -0.00045 | -0.00002 | -0.00002 | 0 | -0.02882 |
| | 0.224 | 0.046** | 0.206 | 0.244 | 0.946 | 0.064* |
| DAYS | 0 | 0 | 0 | 0 | 0 | -0.00006 |
| | 0.198 | 0.585 | 0.277 | 0.067* | 0.102 | 0.144 |
| PACQ | -0.00325 | -0.01111 | -0.00152 | -0.00171 | 0.00014 | 0.94978 |
| | 0.078* | 0.22 | 0.062* | 0.027** | 0.593 | 0.299 |
| SHRRTS | 0.00005 | -0.0012 | 0.00003 | 0.00007 | -0.00003 | -0.39364 |
| | 0.878 | 0.426 | 0.849 | 0.643 | 0.451 | 0.002*** |
| LSIZE | -0.00026 | -0.00117 | -0.00012 | -0.00015 | 0.00003 | 0.02901 |
| | 0.071* | 0.079* | 0.062* | 0.020** | 0.096* | 0.694 |
| Financial | 0.00033 | 0.00751 | 0.00013 | 0.00012 | -0.00001 | 0.4964 |
| | 0.5 | 0.020** | 0.567 | 0.547 | 0.866 | 0.038** |
| Mining | 0.00124 | 0.00738 | 0.0005 | 0.00048 | 0.00003 | 0.66333 |
| | 0.011** | 0.047** | 0.014** | 0.009*** | 0.461 | 0.173 |
| Utilities | 0.00106 | 0.00327 | 0.00046 | 0.00043 | 0.00004 | -0.0425 |
| | 0.011** | 0.142 | 0.012** | 0.014** | 0.413 | 0.766 |
| Brazil | 0.00086 | -0.00065 | 0.00039 | 0.00049 | -0.00008 | 0.23567 |
| | 0.446 | 0.891 | 0.467 | 0.328 | 0.333 | 0.46 |
| Dollarvolume | -0.00102 | -0.00451 | -0.00042 | -0.00033 | -0.00009 | -0.62749 |
| | 0.000*** | 0.000*** | 0.000*** | 0.000*** | 0.001*** | 0.000*** |
| Dvolatility | 0.00097 | -0.00055 | 0.00042 | 0.00029 | 0.00013 | -0.18332 |
| | 0.115 | 0.822 | 0.094* | 0.236 | 0.013** | 0.504 |
| Dstockp | 0.00002 | 0.00012 | 0.00002 | 0.00001 | 0.00001 | -0.04314 |
| | 0.701 | 0.737 | 0.533 | 0.651 | 0.305 | 0.106 |
| Observations | 72 | 72 | 72 | 72 | 72 | 72 |
| R-squared | 0.786 | 0.74 | 0.784 | 0.765 | 0.523 | 0.723 |

Robust p values in parentheses

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

## APPENDIX

### Definition and source of variables

| Variable | Definition | Source |
|---|---|---|
| BIND | 1 - (the number of insider board members) divided by (the number of board members) | Bloomberg |
| CFCON1 | Dummy variable that takes the value of 1 if dominant shareholders are corporations or family groups, and zero otherwise | Economatica/Other |
| Size | Total assets in USD$ MM | Bloomberg |
| LSIZE | Natural logarithm of Total assets | Bloomberg |
| PACQ | PACQ is the fraction of acquisition deals announced, for targets in the same industry over the past five years, in five countries of the region (Brazil, Chile, Colombia, Peru, and Venezuela) | SDC |
| Volatility | Standard deviation of monthly stock price returns over the previous 24 months | Bloomberg |
| CLISTING | Dummy variable equals 1 for firms with liquid equity securities listed on a US stock exchange, and zero otherwise | Bloomberg |
| SOA | Dummy variable equals 1 for observations after year 2002, and zero otherwise | Author/Other |
| CL_SOA | Interaction term between CLISTING and SOA | Author/Other |
| LAMBDA | Inverse Mills ratio from a Heckman type regression (use LAMBDA1 with RAT1, and LAMBDA2 with GAP1) | Author/Other |
| DUAL | Dummy variable equals 1 if the CEO is also the chairman of the board, and zero otherwise | Bloomberg |
| SHRRTS | Dummy variable equals 1 for firms with single-class shares (voting shares), 0 for multiple-class shares | Economatica |
| Mining | Dummy variable equals 1 for Mining firms, and zero otherwise | Bloomberg |
| Financial | Dummy variable equals 1 for Financial firms, and zero otherwise | Bloomberg |
| Utilities | Dummy variable equals 1 for Utility firms, and zero otherwise | Bloomberg |
| RAT1 | The ratio of the % of cash-flow rights to the % of voting rights held by the dominant shareholder | Economatica |
| GAP1 | The difference between the % of voting rights and the % of cash-flow rights held by the dominant shareholder | Economatica |
| CIGOWN | The % of voting rights held by combined institutional investors and governments excluding dominant shareholders | Economatica |
| Leverage | Total liabilities divided by Total assets | Bloomberg |
| TOP2_3 | The percentage of voting rights held by the second (or third) largest shareholder provided that it is not an institutional investor or government | Economatica |
| BSIZE | Number of board members | Bloomberg |
| Tobin's Q | Sum of Total liabilities and Market value of equity divided by Total assets | Bloomberg |
| TOBINQ | Natural logarithm of the Tobin's Q ratio | Bloomberg |
| LTQ | One-year lagged Tobin's Q ratio | Bloomberg |
| TOBINLAG | Natural logarithm of LTQ | Bloomberg |
| Marketeq | Market value of equity in USD$ MM | Bloomberg |
| NINSTI | Year-industry average number of combined institutional investors and government agencies with voting rights | Economatica |

**Additional governance measures**

| Variable | Definition. | Source |
|---|---|---|
| Brazil | Dummy variable equals 1 for Brazilian public firms, and zero otherwise (the reference) | Economatica |
| Chile | Dummy variable equals 1 for Chilean public firms, and zero otherwise | Economatica |
| Colombia | Dummy variable equals 1 for Colombian public firms, and zero otherwise | Economatica |
| Peru | Dummy variable equals 1 for Peruvian public firms, and zero otherwise | Economatica |
| Venezuela | Dummy variable equals 1 for Venezuelan public firms, and zero otherwise | Economatica |
| Shholdrs | Number of identifiable named shareholders holding non-floating shares. | Economatica |
| BHS | The sum of the % of voting rights held by all blockholders (Family+Corp+Other) excluding dominant shareholders | Economatica/Other |
| BHD | Dummy variable equals 1 if an aggregated blockholder exists, as defined in BHS, and zero otherwise | Economatica/Other |
| BG1 | Dummy variable equals 1 if the dominant shareholder belongs to one of the 225 identified business groups. | Economatica/Other |
| INSOWN | The percentage of voting rights held by institutional investors excluding dominant shareholders | Economatica |
| NINSOWN | The number of institutional investors, excluding dominant shareholders which hold voting rights | Economatica |
| GOVOWN | The percentage of voting rights held by governments excluding dominant shareholders | Economatica |
| NGOVOWN | The number of government agencies excluding dominant shareholders which hold voting rights | Economatica |
| NINSTIV | Annual industry average number of institutional investors with voting rights | Economatica |
| NINSTICF | Annual industry average number of institutional investors with cash-flow rights | Economatica |
| NFAMV | Annual industry average number of families with voting rights | Economatica |
| NFAMCF | Annual industry average number of families with cash-flow rights | Economatica |
| NCORPV | Annual industry average number of corporations with voting rights | Economatica |
| NCORPCF | Annual industry average number of corporations with cash-flow rights | Economatica |
| NGIV | Annual industry average number of government agencies with voting rights | Economatica |
| NGICF | Annual industry average number of government agencies with cash-flow rights | Economatica |
| Flotav | Dummy variable equals 1 if the firm has floating voting shares, and zero otherwise | Economatica |
| Flotanv | Dummy variable equals1 if the firm has floating non-voting shares, and zero otherwise | Economatica |
| Control50 | Dummy variable equals1 if dominant shareholders control more than 50% of voting rights, and zero otherwise | Economatica/Other |
| Control60 | Dummy variable equals1 if dominant shareholders control more than 60% of voting rights, and zero otherwise | Economatica/Other |
| Control70 | Dummy variable equals1 if dominant shareholders control more than 70% of voting rights, and zero otherwise | Economatica/Other |
| Control80 | Dummy variable equals1 if dominant shareholders control more than 80% of voting rights, and zero otherwise | Economatica/Other |