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One Share, One Vote: The Empirical Evidence

Finance Working Paper N° 177/2007
May 2007

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This paper can be downloaded without charge from:
https://doi.org/10.67929/ecgi-fin-177-2007

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ECGI Working Paper Series in Finance

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One Share-One Vote: The Empirical Evidence[1]

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This version: December 10, 2007.

Abstract

We survey the empirical literature on disproportional ownership, i.e. the use of mechanisms that separate voting rights from cash flow rights in corporations. Our focus is mostly on explicit mechanisms that allow some shareholders to acquire control with less than proportional economic interest in the firm (dual-class equity structures, stock pyramids, cross-ownership, etc.), but we also briefly discuss other mechanisms, such as takeover defenses and fiduciary voting. We provide a broad overview of different areas in this literature and highlight problems of interpretation that may arise because of empirical difficulties. We outline potentially promising areas for future research.

[1] We thank Marco Becht, Morten Bennedsen, Mike Burkart, Léo Goldschmidt, Samuel Lee and especially Marco Pagano (the editor) and two anonymous referees for comments. This survey is based on work the authors conducted in conjunction with International Shareholder Services (ISS), Sherman and Sterling LLP and the European Corporate Governance Institute (ECGI) on behalf of the European Commission. The views expressed in this article are solely ours and do not represent the official views of the aforementioned organizations.

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Abstract

We survey the empirical literature on disproportional ownership, i.e. the use of mechanisms that separate voting rights from cash flow rights in corporations. Our focus is mostly on explicit mechanisms that allow some shareholders to acquire control with less than proportional economic interest in the firm (dual-class equity structures, stock pyramids, cross-ownership, etc.), but we also briefly discuss other mechanisms, such as takeover defenses and fiduciary voting. We provide a broad overview of different areas in this literature and highlight problems of interpretation that may arise because of empirical difficulties. We outline potentially promising areas for future research.

1. Introduction

We survey the empirical literature on the causes and consequences of disproportional ownership. By disproportional ownership we mean mechanisms that allow some shareholders to control a proportion of votes that is larger than their proportion of rights to the firm's cash flows, i.e. deviations from the "one share-one vote" principle. One complication in trying to assess the effects of disproportional ownership is that a divergence between voting control and cash flow rights can arise in many ways. It is easiest to identify when explicit mechanisms, such as shares with differential voting rights, pyramidal structures and cross-holdings, have been put in place to retain control. Such mechanisms are prevalent in many countries around the world. But a wedge between votes and cash flow rights can also arise in more indirect ways, for example due to takeover defenses or fiduciary voting.

The empirical literature has asked many important questions in this area: What are the causes of disproportional ownership structures? What is the impact of disproportional ownership on the value of shares held by non-controlling shareholders? Do controlling shareholders use disproportional ownership to entrench themselves? Do deviations from one share-one vote affect economic and financial development? We will review some of the results concerning each of these issues.

The idea that the "one share-one vote" principle is desirable is what might be considered the dominant view in the literature. This literature argues that concentrated control in the hands of a few leads to agency and entrenchment problems. These can take the form of distortions in investment decisions (Bebchuk et al., 2000), tunneling (Johnson et al., 2000), inefficiencies in the market for corporate control (Grossman and Hart, 1988; Harris and Raviv, 1988), formation of monopolies (as discussed in Khanna and Yafeh, 2006), inefficient perk consumption (Yermack, 2006), and the like. The predicted consequences may be dire. As Morck et al. (2005) discuss, they range from distorted investment decisions at the micro level to underdeveloped capital markets and retardation of growth at the macro level.

But theory also ascribes many benefits to concentrated control. For example, centrally controlled business groups may substitute for under-developed economic institutions (see e.g. Khanna and Yafeh, 2006). Thus, the costs of control may depend on country-level institutional factors, such as shareholder protection and rule of law. The costs of control may also depend on the amount of control involved. Thus, too much control in the hands of managers may be detrimental because it leads to entrenchment (Stulz, 1988), but some control may be beneficial because it can shield management from the appropriation of the returns to organizational-specific investment by other management teams (Fama, 1980). The costs may also depend on in whose hands control resides: Some argue that managerial control is necessarily detrimental, while large shareholders' control can be beneficial because they have incentives to monitor (Shleifer and Vishny, 1986). The costs of control can depend on the source of control: Large shareholder or family control may be detrimental in a pyramidal group, but beneficial in a freestanding firm. Finally, what may be a cost for society may be a benefit for the individual shareholder, as in the case of monopoly power. Conversely, what is a cost for the individual shareholder, e.g. management entrenchment, may benefit other stakeholders, such as workers (e.g. Bertrand and Mullainathan, 2003; Pagano and Volpin, 2005).[2]

The main question in most of the studies we survey is: Does disproportional ownership destroy shareholder value?[3] We will argue that, while the literature has uncovered some robust evidence, this question has proven difficult to address empirically.

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[2] This list is not exhaustive. Alchian and Demsetz (1972) argue that if information about managerial performance is difficult to communicate to outsiders, then managers' control may deter relatively uninformed outside stockholders from mistakenly replacing the incumbent management team with a less productive group. The literature also points out that concentrated control may aid in the formation of efficient internal capital markets (see e.g. Khanna and Yafeh, 2006). For a more comprehensive discussion of the theoretical literature, see Burkart and Lee (2007).

[3] Ideally one would like to assess the effects of disproportional ownership on social welfare. Under the

A related issue is whether the widespread use of mechanisms to unbundle cash flow rights from voting rights distorts the economy-wide allocation of capital (see esp. Morck at al., 2005). If promised returns to equity investors are too small because disproportional ownership creates too many opportunities for extracting private benefits, little outside equity will be supplied and serious underinvestment problems (or suboptimal allocations of capital) may occur. This may affect the development of well-functioning equity markets and may be a barrier to economic growth. On the other hand, with too little incentives to entrepreneurs in the form of private benefits, investment and innovation may also suffer (Allaire, 2006). And if the absence of control-enhancing mechanisms implies that some family-controlled firms are reluctant to raise funds from public equity markets, the perceived cost of capital may actually be higher if deviations from one share-one vote are not possible. Thus, in theory, the effect of disproportional ownership on capital allocation is ambiguous. We review this small literature only to the extent that it is related to the effect of disproportional ownership on shareholder value. For further details, we refer the reader to the extensive discussions in Morck et al. (2005) and Khanna and Yafeh (2006).

The paper is organized as follows. In Section 2, we present some evidence of how common deviations from one share-one vote are. In Section 3, we briefly discuss some of the difficulties in properly measuring the degree of separation between votes and cash flow rights. In Section 4, we discuss some reasons for choosing a disproportional ownership structure. The fact that different firms choose different degrees of ownership proportionality is apparent, but its consequences are easily overlooked. Because ownership structures are *endogenous* (i.e. they are not randomly assigned to different firms in a given country or industry), many difficulties arise in estimating the impact of disproportional ownership on firm and market outcomes.

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standard assumptions of (almost) complete contracting and no externalities, there are no conflicts between shareholder value and social welfare. In reality, these assumptions are unlikely to hold, thus shareholder value may not be the only relevant policy goal.

In Section 5, we review the evidence on the impact of disproportional ownership on the value of outside equity. We focus on papers that are concerned with the pure effects of the wedge between control and cash flow rights. Because the use of shares with multiple voting rights (for simplicity called *dual-class shares* here) generates the most explicit separation between cash flow and control rights, we devote most of our attention to papers analyzing dual-class shares, but we also touch upon the literature on pyramids and cross-holdings, fiduciary voting, and takeover defenses.

We discuss the evidence on the value of control to controlling shareholders in Section 6. In Section 7, we discuss the implications of deviations from one share-one vote for issues other than the value of outside equity, such as their impact on financial development and the allocation of capital, the firm's cost of capital, and the welfare of other stakeholders. We conclude in Section 8 by summarizing what we know about the causes and consequences of disproportional ownership. We also discuss future research directions.

Other papers also discuss the empirical literature on corporate control. They are more focused and provide more comprehensive coverage of the literature in certain areas: Rydqvist (1992) and Allaire (2006) discuss dual-class shares; Bebchuk et al. (2000) discuss pyramids; Morck et al. (2005) discuss pyramids with a particular emphasis on family control; Khanna and Yafeh (2006) discuss business groups in emerging markets; Shleifer and Vishny (1997) and Becht et al. (2003) discuss corporate governance in general; Demsetz and Villalonga (2001) discuss the managerial ownership literature; Hermalin and Weisbach (2003) discuss corporate boards; Burkart and Panunzi (2006) discuss takeovers; Bhagat and Jefferis (2002) discuss antitakeover measures, and Hu and Black (2006) discuss the role of institutions and derivative markets in separating cash flow from voting rights.

While our work sometimes overlaps with these papers, it differs from them in several aspects. First, our goal is to interpret the evidence to inform policy and research, at the cost of being comprehensive. Rather than enumerating all papers that argue that the evidence they provide is in favor of a given hypothesis, we focus on those that help us illustrate which results can be considered to be robust and which not. Second, we highlight that the interpretation of the evidence is often confounded by empirical problems. Because

we can take advantage of advances in econometric techniques and we have access to a large pool of empirical findings, in some cases we reinterpret the evidence and reach a different conclusion from the authors. Third, we focus more heavily on recent contributions to the field, not because we judge them to be better (or worse), but because the increasing availability of data for many firms in many countries has made large sample studies more common in recent years. These studies have a better chance of meeting some of the empirical challenges that we identify.

2. How common are deviations from one share-one vote?

Under "one share-one vote" there is no wedge between cash flow and effective voting rights. A disproportional ownership structure is one that deviates from the "one share-one vote" principle. Ownership disproportionality has many causes, such as share classes with differential voting rights, voting rules and caps, voting agreements, pyramidal control structures, cross-ownership of shares, fiduciary voting, ownership dispersion, etc. Some of these mechanisms, such as ownership dispersion and fiduciary voting, are not always considered to be ways of separating cash flows from effective voting rights, but often that is exactly what they deliver.

A recent survey of 464 firms in 16 European countries conducted by Institutional Investor Services (2007) as part of a larger study commissioned by the European Commission reveals some interesting descriptive evidence on the use of 13 "one share-one vote" deviation mechanisms, also called "control-enhancing mechanisms" (CEMs). According to this survey, 44% of the sample companies have at least one CEM. The most frequent mechanisms are pyramids (27% of companies) and dual-class shares (24%). But, there is heterogeneity across countries. While pyramids are quite common in Belgium (34%) and Sweden (48%), there are few of them in the UK (3%) and Denmark (0%). Multiple-voting shares are common in Sweden (59%), France (58%) and the Netherlands (41%), but virtually non-existent in some countries such as Belgium and Italy (in these countries, no sample firm had multiple voting shares).

The working paper by Bennedsen and Nielsen (2007) reports similar results using a much larger sample of more than four thousand companies in 14 Western European Countries. The main difference is that the proportion of UK firms that separate control from cash flow rights through pyramids (22%) and dual-class shares (25%) is much higher than in the ISS sample. These data conflict with the commonly-held view that deviations from "one share-one vote" in the United Kingdom are rare.[4]

Pajuste (2005) provides evidence of a marked trend away from dual-class structures in some European countries. Table 1 shows that, in all countries in her sample, the fraction of dual-class firms in total listed firms has significantly decreased over time. As Pajuste notes, this is strong evidence that dual-class structures are becoming "out of fashion."[5]

---Insert Table 1 about here---

Most of the recent political discussions concerning disproportional ownership structures have taken place in Europe. But deviations from "one share-one vote" are found all over the world. According to Claessens et al. (2000), dual-class shares are rare in Eastern Asian countries, but pyramids and cross-ownership arrangements are common. In a sample of management-controlled firms in 18 emerging economies, Lins (2003) finds that control is achieved through pyramids in 66% of cases. Dual-class shares are widely used in Brazil and Peru, but are uncommon outside Latin America.

Gompers et al. (2006) study a large sample of firms that have dual-class shares in the United States. For all firms in the Compustat database (except for trusts, closed-end funds, ADRs, units, and REITs), they collected data on both single- and dual-class firms

[4] For example, La Porta et al. (1999) find no case of pyramidal control among the 20 largest British firms. Bennedsen and Nielsen's sample contains numerous small firms, which could explain the difference in their conclusions.

[5] Bianchi and Bianco (2006) show related evidence that the proportion of Italian firms controlled by pyramid structures fell from 56.5% in 1993 to 45.8% in 2005.

from 1995 to 2002. Their sample contains roughly seven thousand firms per year, about six percent of which have more than one class of common stock. Villalonga and Amit (2006) collected data on 515 Fortune 500 firms during the period from 1994 to 2000. In their sample, around 12% of the firms have two or more classes of common stock, which is a number somewhat higher than in Gompers et al. (2006).[6]

3. Measuring voting rights

Documenting that deviations from one share-one vote exist is more straightforward than measuring the extent of such deviations. Because many papers are primarily concerned with the magnitude of the difference, or wedge, between votes and cash flow rights, they require measures of votes that are separate from cash flow rights. Such measures are simple when disproportional structures are due primarily to dual-class shares,[7] but the literature uses different approaches when dealing with pyramidal control and cross-shareholdings.

In pyramids, a popular method for computing ultimate voting rights is the application of the so-called "weakest link" principle (Claessens et al., 2000): if a shareholder controls a share *x* of the votes in company A, which controls a share *y* of the votes in company B, then it is assumed that this shareholder controls the minimum of *x* and *y* of the votes in company B. [8]

An alternative method is to consider only the last link – *y* votes in company B – as long as it is established that the shareholder holds a controlling stake in company A

[6] For additional evidence on the prevalence of deviations from "one share-one vote," see Barca and Becht (2001) and Faccio and Lang (2002) for Western Europe, and Morck et al. (2000) for Canada.

[7] But see Nicodano (1998) for an argument that suggests voting power and the premium attached to dual-class shares may be amplified in business groups.

[8] In pyramids, cash flow rights multiply. If a shareholder owns a share *x* of company A, which owns a share *y* of company B, then this shareholder is entitled to *x***y* of the cash flows of company B.

(usually 10% or 20%). Examples of the application of this method are found in La Porta et al. (1999) and Lins (2003).

As an example, consider the ownership structure of Volkswagen AG, as described by Enriques and Volpin (2007). The Porsche Family owns 100% of the voting rights of the publicly-listed Porsche AG, which owns 25.1% of the voting rights in Volkswagen AG. According to the weakest link principle, the Porsche Family owns 25.1% of the voting rights in Volkswagen (the minimum of 100% and 25.1%). According to the last link principle, voting rights owned by the family are also 25.1%, but for a different reason: because this is the last link. As this example illustrates, the two concepts often give the same results, but they can also differ widely. By simply switching the numbers one obtains different results: if the family owns 25% of the intermediary firm, which holds 100% of the end firm, "weakest link" voting control is 25%, but "last link" control is 100%.

Another complication is how to account for cross-ownership. Although this is relatively simple when two firms hold shares in each other, things are more complicated when three or more firms are involved and the pattern of ownership is complex. The fact that few cases of cross-ownership have been documented in large sample studies could be a consequence of this complexity. For example, in a recent working paper Almeida et al. (2007) suggest that the pattern of cross-ownership in Korean *chaebols* has gone largely undetected due to the presence of complicated ownership loops involving many firms.

Differences in how votes and cash flow rights are computed may have an effect on empirical results. As we will argue later, it matters not only how voting and cash flow rights are computed, but also how these variables are used in empirical models.[9]

[9] For a thorough discussion of measurement issues with respect to complex ownership structures, see Almeida et al. (2007).

4. Determinants of ownership structures

At certain moments in a firm's life—such as the design of charter provisions, the IPO decision, the acquisition or divestiture of a new division, etc.—the controlling shareholders make decisions that have long-lasting effects on the degree of ownership proportionality. What are the main determinants of decisions to separate cash flow rights from voting rights?

The literature on this issue is surprisingly small. Partly this is because there is little theoretical consensus on what determines dual-class structures, pyramids, and cross-ownership structures (see e.g. Khanna and Yafeh, 2006). Partly this is because it is difficult to obtain large enough samples to be able to examine the determinants. In some countries, pyramids and cross-ownership are so widespread that it is nearly impossible to construct a comparable sample of firms without disproportional ownership for which publicly available data exist.

The modern literature on dual-class shares starts with the seminal work of De Angelo and De Angelo (1985). They study 45 US companies with two classes of common stock. Their main goal is to show that votes are valuable. By means of specific examples, they support their hypothesis by showing that superior voting shares carry a premium in acquisitions.

De Angelo and De Angelo's study is mostly descriptive. But their insight has been repeatedly confirmed by subsequent papers on this issue. One of the main reasons why dual-class structures are chosen is the desire of controlling shareholders to retain control without having to bear excessive cash flow risk. However, in stark contrast to many more recent papers, it is interesting to note that De Angelo and De Angelo's view of dual-class structures is mostly positive. They discuss some efficiency-based reasons for choosing dual-class structures, such as to avoid uninformed outside stockholders' interference, to protect managers' investments in organization-specific human capital, and to protect managers' property rights to consume non-pecuniary benefits. Unlike most of the recent

literature, they view the consumption of private benefits as an efficient arrangement between controlling and outside shareholders.[10]

They are particularly skeptical about explanations based on contractual inefficiencies. They claim that "(…) observed arrangements represent voluntary agreements between managers and outside stockholders. These contracting parties have incentives to internalize all costs and benefits when they initially arrange the firm's ownership structure, and to recontract should new opportunities arise. (…) Moreover, the contracting parties also bear opportunity costs in every period in which they forego the gains from removal of a suboptimal ownership arrangement." (De Angelo and De Angelo, 1985, p. 53).

A more detailed study of the determinants of dual-class structures is found in Lehn et al. (1990). They start by recognizing the important but usually neglected fact that dual-class recapitalizations and going-private transactions are substitutes: both can be used to consolidate control in the hands of a group of shareholders. But they also note that this substitution is not perfect: in dual-class firms, the controlling group has fewer cash flow rights than in private firms. Thus, they hypothesize that different firms face different costs and benefits associated with each form of consolidating control. They attempt to test this hypothesis by analyzing the impact of some firm characteristics on the choice between a dual-class recapitalization and a going-private transaction.

Their main finding is that firms that choose dual-class recapitalizations over going private have better growth prospects, as measured by growth in sales and the number of employees, the ratio of R&D to sales, advertisement expenditure to sales ratios, and market

[10] For example, they write on pp. 35-36: "Such managerial perquisites can take many forms, all of which share the common element that they be consumption goods that can be purchased outside the firm only at relatively unattractive terms. For example, managers may hold voting rights because they are willing to pay (through a lower price at which they can sell shares) for the personal consumption associated with greater discretion in allocating company resources."

to book ratios. They also analyze the effects of proxies for free cash flow and tax liabilities, but find only weak support for agency and tax-based explanations.

Although Lehn et al. do not explicitly take sides on the debate about the efficiency of dual-class structures, they note that their evidence is mostly consistent with the following story. Firms that wish to consolidate control but have good growth prospects prefer dual-class recapitalizations because they can maintain a cheap source of financing. They reinforce this interpretation by showing that recapitalizations are usually followed by new equity issues. They conjecture that the negative stock price impact that recapitalization announcements have in some cases may be due to the market's expectation of future equity issues, rather than to a negative effect of the recapitalization per se.

A simple but important point stressed by Lehn et al. is that dual-class recapitalizations may be a tool to *reduce* the cost of capital. If recapitalizations were not possible, some firms would choose to go private in order to consolidate control, and that would increase their cost of capital.

Taylor and Whittred (1998) analyze a sample of IPO firms in Australia for the period 1984-1989. Their main goal is to test the founder-human-capital hypothesis for choosing dual-class structures, i.e. that the protection of firm-specific human capital is a reason for concentrating control in the hands of founders. Although they claim to find some support for this hypothesis, we find it difficult to infer it from their evidence, which is mostly qualitative. But, what is clear is that in their sample dual-class IPOs have lower market to book ratios.

Amoako-Adu and Smith (2001) analyze the determinants of dual-class IPOs of companies listed on the Toronto Stock Exchange for the period 1979-1998. They present two main findings. First, family control of a large stake before the IPO increases the likelihood of going public with a dual-class structure. This is consistent with families being particularly interested in owning corporate votes. Second, up to 10 years after the IPO control changes in dual-class firms happened in roughly 2/3 of the cases, which the authors suggest may be inconsistent with the idea that dual-class structures serve to unduly entrench managers.

We believe that this last finding deserves further scrutiny. It is usually assumed that controlling shareholders use dual-class structures to insulate themselves from control contests without having to bear the proportional economic risk. However, in many firms that issue multiple classes of shares, insiders do not own the majority of votes. There are also many firms in which insiders own the majority of votes, but also own the majority of cash flow rights (see the evidence in Gompers et al., 2006, for example). Unfortunately, the literature does not yet explain why the distribution of voting and cash flow rights in dual-class firms varies.[11]

Smart and Zutter (2003) compare the extent of IPO underpricing of dual-class with single-class firms. They find that dual-class IPOs experience less underpricing than single-class IPOs. Their interpretation is that underpricing is a means of creating a dispersed ownership structure, which is valuable for founders that wish to retain control after the IPO. If a dual-class structure is chosen, there are fewer incentives to underprice the new securities because tight control is achieved directly. In related work, Smart et al. (2007) find that CEO turnover is less sensitive to performance in dual-class IPO firms. The evidence from IPO firms thus corroborates the hypothesis that dual-class structures are chosen for control reasons.

Two recent unpublished papers use data on large samples of firms in the US to examine dual-class firms. Although they are mostly concerned about the impact of voting and cash flow rights on firm value and performance, they also discuss the determinants of dual-class structures.

Gompers et al. (2006) find that about 85% of firms in their dual-class sample have at least one class of shares that is not traded.[12] This suggests that shares with superior voting rights are usually less liquid and are held by people who do not want to dispose of them. The most likely explanation is that these shares are indeed used to acquire and

[11] Bergstrom and Rydqvist (1990) is one of the few papers that examine this issue.

[12] In the most common voting structure, the superior voting share has ten votes while the inferior one has one vote.

maintain control. Consistent with this explanation, they show that firm insiders own roughly 60% of the votes and 40% of the cash flow rights. However, in only a third of the dual-class sample do insiders have a majority of the votes without a majority of the cash flow rights.

Gompers et al.'s (2006) most interesting finding is that media companies and companies with a person's name in the company name are more likely to adopt dual-class structures. These results make sense, as these variables proxy for the existence of private benefits enjoyed by the founders.[13]

Villalonga and Amit's (2006) main finding is that first generation family firms (i.e. founder-controlled firms) are less likely to adopt dual-class shares (and other mechanisms of separation). Another interesting result is their finding that a high Tobin's q (i.e. a proxy for market value of assets to book value) reduces the likelihood of adopting dual-class shares.

In a sample of Swedish firms, Cronqvist and Nilsson (2003) estimate the probability of choosing a particular control-enhancing mechanism as a function of firm characteristics. They find that family-controlled firms are more likely to issue dual-class shares, to have non-traded high voting shares, and to use alternative mechanisms such as a right of pre-emption,[14] a voting restriction, or a shareholder agreement. Furthermore, all these effects are stronger for firms controlled by families that are directly related to the founder. These results are broadly consistent with the idea that families use disproportional ownership to extract private benefits.

Hauser and Lauterbach (2004) study 84 dual-class stock unifications in Israel. They find that superior vote shareholders receive compensation for their control losses, and that

[13] DeAngelo and DeAngelo (1985) were the first to suggest that media companies are more likely to adopt dual class shares (but see also Demsetz and Lehn, 1985). The rationale for the "name" variable is that founders are more attached to their firms when the firms carry their names.

[14] A right of pre-emption gives the owners of high voting shares the option to buy back non-traded high voting shares sold by a family/coalition member to a third party (Cronqvist and Nilsson, 2003, Table 2).

this compensation is proportional to the proportion of votes lost. Consistent with private benefit extraction, they find that the price of votes is higher in family-controlled firms. In their event study of 32 German unifications, Dittman and Ulbricht (2005) also find that the loss of voting power of the controlling shareholder is a key factor influencing share reunifications. Moreover, they document that the announcement of unification appears to be associated with significant value increases.

In a 2005 working paper, Pajuste conducts a comprehensive study of share unifications in Europe. She collected data for 493 single and dual-class share firms in seven European countries from 1996-2002.[15] During that period, many firms shifted from a dual-class structure to a single class structure. Consistent with Dittman and Ulbricht (2005), Pajuste finds that variables measuring the need to raise capital and to make acquisitions are important determinants of the unification decision and that proxies for the value of control and private benefits (e.g. control minus cash flow rights) reduce the probability of unification. Cross-listing in the U.S. increases the probability of unification. Her main result on the consequences of unifications is that (industry-adjusted) market-to-book ratios increase after unification (although operating performance does not).

The papers on dual-class unifications suggest that firms unify shares to reduce the cost of capital when they need to tap public equity markets to undertake new investments, especially acquisitions. The costs of unification are the loss of control and private benefits, thus firms are less likely to unify when these losses are high.

If not many studies focus on the determinants of dual-class structures, even fewer analyze the determinants of other mechanisms of deviating from one share-one vote. Studies by Claessen et al. (2000), Barca and Becht (2001), Faccio and Lang (2002) document the widespread use of pyramids in both East Asia and Western Europe. Although these studies are mostly descriptive, one message that is particularly clear from Faccio and Lang is that the overall separation between votes and cash flow rights that is achieved via pyramids, cross-ownership, and dual-class shares is often small, especially in Europe. This

[15] Denmark, Finland, Germany, Italy, Norway, Sweden, and Switzerland.

is also consistent with the evidence in Franks and Mayer (2001), who find only limited evidence that pyramids are used for control purposes in German corporations.[16]

Summary of the evidence concerning determinants of ownership structures

Few papers directly tackle the issue of the determinants of dual-class structures and other mechanisms to deviate from one share-one vote. Consequently, we still know very little about this issue. There is unequivocal evidence that votes are valuable. Other than this, there is some robust evidence that the protection of private benefits and the desire to keep control in the family are reasons for choosing a dual-class structure. There is also evidence suggesting that dual-class structures are a cheaper alternative to private equity, in the sense of a lower cost of capital. In the case of pyramids and other mechanisms involving organizational structure, considerations other than control may also be relevant.

What all the papers above illustrate is that ownership structures are not randomly distributed across firms. There are firm characteristics that are correlated with the extent to which voting control is concentrated. To determine the consequences of disproportional ownership it is important to recognize this fact, because it may imply that ownership is endogenous in the problem under consideration.

5. Disproportional ownership and the value of outside equity

Although understanding the determinants of ownership structures is important, from both an economist's and a policy maker's standpoint the most burning question is whether disproportional ownership "matters," in the sense of affecting the value of outside equity. Accordingly, this topic has dominated the literature. In Section 5.1, we discuss papers that analyze the relationship between dual-class structures and the value of outside equity. In

[16] Almeida and Wolfenzon (2006) develop a theory of pyramidal ownership which is partly motivated by such evidence; in their model, pyramids are set up for reasons other than to enhance control.

Section 5.2, we discuss papers that examine alternative mechanisms, such as pyramids, takeover defenses and institutional and managerial ownership. In Section 5.3, we mention a few recent papers that try to compare the effects of different mechanisms.

There are two main methodological approaches in this literature. The first approach is to use an event study methodology to uncover stock price reactions to announcements of changes in ownership and control structures. The second one is to regress market-to-book or Tobin's q as proxies for firm value on measures of the wedge between cash flow and voting rights and control variables.[17] Because in both cases the goal is to analyze the prices of shares with inferior voting rights, we view this literature as primarily providing evidence on the effects of disproportional ownership on the market value of *outside* equity. This is an important qualification which is not always acknowledged.

5.1 Dual-Class Structures

Announcements of dual-class recapitalizations, share unifications, or any other event that changes the degree of proportionality between voting and cash flow rights may have immediate effects on stock prices. We review some studies that analyze the value effects of such events to controlling and non-controlling shareholders, but also illustrate a different approach to identifying effects of dual-class structures using a panel study.

Partch (1987) uses a sample of 44 recapitalizations in 1962-1984 in the US and finds that, on average, the announcement of these recapitalizations are associated with nonnegative abnormal stock price returns. She concludes that the creation of two classes of common stock with unequal voting rights does not harm shareholders. Jarrell and Poulsen (1988) extend Partch's sample to include 94 firms that experienced dual-class recapitalizations, and also extend the period to 1987. They find evidence of significant

[17] The usual market-to-book measure is the ratio of the market value of equity plus the book value of debt to the book value of assets. Some authors make a distinction between market-to-book and Tobin's q. Here we use these terms interchangeably.

negative abnormal returns of 0.82% upon the announcements of dual-class recapitalizations. However, this effect is driven by the two most recent years in the sample, which occurred after NYSE stopped delisting firms that deviated from one share-one vote. Their findings suggest that some firms did not adopt dual-class structures before that time because they feared delisting and that, for these firms, the recapitalization was viewed negatively by the market.

Cornett and Vetsuypens (1989) study a sample of dual-class recapitalizations that overlaps substantially with those of Partch (1987) and Jarrell and Poulsen (1988). They report a significantly positive abnormal return of 0.88% upon public announcements of dual-class recapitalizations. Since Jarrell and Poulsen rely primarily on the date that the proxy material describing the recapitalization was mailed to shareholders, they conjecture that the divergence between their results and those of Jarrell and Poulsen may be due to different criteria for defining the event day.

Dimitrov and Jain (2006) use more recent data for US firms. They try to identify all dual-class recapitalization announcements during 1979–1998, which gives them a sample of 178 announcements of adoptions of dual-class structures. They find that share ownership is already highly concentrated even before recapitalizations, suggesting that recapitalizations are not used to entrench controlling shareholders. They find that the 3-day average abnormal return after a recapitalization is announced is 0.06%, which is indistinguishable from zero. Using a long-run event methodology, they find significant positive abnormal returns of 23.11% in a period of 4 years following the announcement. They also provide evidence that accounting performance improves after the recapitalizations. They conclude that dual-class recapitalizations create value for non-controlling shareholders.

Bauguess et al. (2007) also find no significant price response to recapitalization announcements in a sample of 142 recapitalizations during 1978-1998. The majority of firms that recapitalize towards dual-class structures have superior industry-adjusted operating performance and fewer bankruptcy filings. Firms that recapitalize are also taken over more often with higher premiums. Most recapitalizations are accompanied by the

liquidation of large cash-flow holdings of the dominant shareholder. This suggests that dual-class recapitalizations are *not* used to avoid unwanted changes in control; instead, they may be a tool to facilitate voluntary control transfers at prices that may benefit all shareholders.

Smart et al. (2007) find that dual-class IPO firms that unify their shares experience significant value gains. Dual-class IPO firms do not appear to be mispriced by the market although they trade at lower prices than single-class IPO firms for up to 5 years following the IPO. Because CEO turnover is less sensitive to performance in dual-class IPO firms, Smart et al. attribute the dual-class discount and value gain in unifications to differences in governance.

Few other works study dual-class recapitalizations or unifications outside of the US context. Using data for 33 Canadian firms, Jog and Riding (1986) find no evidence that the introduction of shares with restricted voting rights is associated with negative abnormal returns. However, Maynes (1992) finds a negative impact of such reorganizations on the prices of common shares for 54 observations in Canada.

Ang and Megginson (1989) study the creation of restricted-voting shares and also some cases of unification of voting rights in a sample of firms traded on the London Stock Exchange. They find that the creation of superior voting shares is usually associated with positive price effects at the announcement. In forty-nine of their sample cases, firms voluntarily enfranchise the inferior-voting shareholders by unifying voting rights. The average wealth effect of announcements of such plans is also positive. In forty-five cases, explicit compensation is paid to superior-voting shareholders to compensate for their loss of voting control.

A potential criticism of the event study evidence is that the events may be endogenous. The fact that both dual-class recapitalizations and share reunifications appear to be value increasing events can be reconciled, for example, if firms undertake them only if they anticipate positive performance effects. Gompers et al. (2006) is one of the few papers that explicitly address the fact that performance may influence the adoption of dual-class structures using panel data methods. They first regress a proxy for Tobin's q on a

dual-class dummy and controls using OLS. Then they use IV techniques to address the fact that the coefficient on the dual-class dummy may be biased due to reverse causality. They use hypothesized determinants of dual class status (a media dummy, a dummy indicating that a person's name appears in the company's name, state anti-takeover law, etc.) as instruments for dual class status. In both OLS and IV regressions, they find no economically or statistically significant effect of dual-class status on Tobin's q. When using the difference between voting and cash flow rights owned by officers and directors, they find a statistically significant negative effect on q, but only in a median regression. OLS regressions using transforms of q (log and -1/q) yield no significant results.

Upon restricting the sample to dual-class shares only, they find that the proportion of votes in the hands of controlling shareholders has a negative impact on q when cash flow rights are also included as an explanatory variable.[18] This result still holds when sample selection problems are addressed using a two-step Heckman procedure, but is not robust to their IV procedure. However, as Bennedsen and Nielsen (2007) point out, some of their instruments for dual-class control, such as the variable indicating that a person's name appears in the company's name, may not be exogenous. The type of firm that has a person's name in the business name is often a family firm, but family firms are generally believed to have different performances than other firms.

Although more work needs to be done to address the potential endogeneity of ownership structure decisions, the results from Gompers et al. (2006) suggest that endogeneity may not be the only reason the results from the event study evidence on dual-class shares are mixed. Studies such as Bauguess et al. (2007) suggest that circumstances surrounding ownership changes may also be important. If dual-class shares can facilitate the exit of large shareholders in a way that also benefits minority shareholders, for example, the net effect of dual-class shares in panel regressions need not be negative. Determining

[18] In a recent working paper, Masulis et al. (2007) find evidence that CEOs of dual-class firms in the US are paid more. They argue this might help explain a negative relationship between disproportional ownership and performance in dual-class firms.

situations in which dual-class shares may add value versus when they do not appears to be a promising area for future research.

5.2 Other Mechanisms

Complex ownership structures

Many recent papers are concerned with deviations from one share-one vote that arise due to complex ownership structures, such as pyramids and cross-shareholdings. Most of these papers use either cross-country data or single-country data for countries other than the US. These papers usually analyze situations in which pyramids and cross-ownership are used in conjunction with dual-class shares. Thus, most of these papers focus on the wedge between votes and cash flow rights, rather than on the cause of this wedge (complex ownership or dual-class shares).

Claessens et al. (2002) is one of the first and most influential papers that explicitly analyze the impact of disproportional ownership on the market value of equity by means of a cross-country sample. Using the weakest link principle (see Section 3), Claessens et al (2002) identify the ultimate owners of 1,301 corporations in eight countries in East Asia in 1996.[19] Most of the deviations from "one share-one vote" arise due to pyramidal control. In their baseline regressions, they regress market-to-book ratios on a measure of ownership concentration, different measures of disproportional ownership, control variables such as firm size, firm age, capital expenditures over sales, sales growth, and ten industry dummies. They find that concentration of ownership (measured by the cash flow rights held by the largest shareholder) is positively related to market-to-book, which they interpret as consistent with an incentive effect of the ownership of cash flow rights. They also find that the wedge between voting and cash flow rights is negatively related to market-to-book, which they interpret as evidence of an entrenchment effect due to the separation of voting

[19] Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand.

rights from control rights. Finally, they find that a dummy indicating whether voting rights exceed cash flow rights by more than the median separation in their sample (15.1 percentage points) is negatively related to market-to-book. The results for this dummy are the easiest to compare to other studies. Its coefficient is -12.6 percentage points, which implies that, on average, ownership disproportionality greater than 15.1% reduces the value of non-controlling equity by roughly 9%.

The importance of the work by Claessens et al. (2002) cannot be overstated. Their paper is also useful for illustrating how features of a common empirical approach may affect the interpretation of the results. The first feature is the asymmetry in their empirical specification. Cash flow rights (the "ownership" variable) enter as an explanatory variable, while voting rights (the "control" variable) do not. Instead, "control minus ownership" is used as an explanatory variable. Because there is some evidence that the effect of ownership on market-to-book is non-monotonic (see for example Morck et al., 1988) and that functional form considerations in the measurement of disproportional ownership are important (see Villalonga and Amit, 2006), it is possible that "control minus ownership" might be capturing non-linearities in the relationship between cash flow rights and market-to-book, rather than a true effect of the separation between ownership and control.

Omitted variable problems may also affect the results. These eight countries have different institutional environments, which could affect both the extent to which firms can separate voting from cash flow rights and the market valuations of outside equity. If country-level investor protection is positively related to the market value of equity and also to ownership proportionality, the evidence may be driven by omitted investor protection indices. In this case, the message of Claessens et al. need not be invalid, but the policy implications might be different.

The results in La Porta et al. (2002) support this alternative explanation. Using a sample of 539 large firms in 27 wealthy economies, they find that Tobin's q is positively related to country-wide indices of investor protection. While controlling shareholders' cash flow rights have a positive effect on q, as in Claessens et al. (2002), the difference between

control and cash flow rights for the controlling shareholder has no statistically significant relationship with q (see footnote 11 on page 1163).

Finally, there is the issue of reverse causality. Claessens et al. (2002) dismiss reverse causality explanations by arguing that it is implausible that controlling shareholders quickly change the ownership and control structures of their firms in response to temporary market misvaluations. They correctly point out that ownership structures tend to be stable over time. However, reverse causality does not require frequent changes in ownership structure, because market-to-book ratios also display persistence over time. Thus, it is possible that expected levels of market-to-book ratios at the IPO date are correlated with the likelihood of adopting control-enhancing mechanisms.

A potential reverse causality story is as follows. By adopting control-enhancing mechanisms, founder-owners may be able to obtain a higher price for their shares when they choose to exit. For example, by adopting dual-class shares, they may be able to negotiate a disproportionate share of any future takeover premium.[20] A larger takeover premium may benefit all original shareholders (see Stulz, 1998). However, the cost of capital could be also higher when deviations from one share-one vote are substantial. Because cheaper access to equity finance is more valuable in firms with many positive NPV projects (see for example the evidence and arguments in Lehn et al., 1990, Dittman and Ulbricht, 2005, Pajuste, 2005, and Dimitrov and Jain, 2006), their founder-owners should be less willing to adopt further control-enhancing mechanisms. Thus, the market-to-book ratio, as a proxy for (good) investment opportunities, will be negatively correlated with the adoption of deviation mechanisms. This is a reverse causality story because high or low market-to-book ratios may be due to (omitted) firm or industry characteristics and not to the presence of control-enhancing mechanisms. Had founder-owners not adopted control-enhancing mechanisms in firms with few investment opportunities, valuations could have been even lower (because the takeover premium would have been lower). This

[20] The evidence in Bauguess et al. (2007) is consistent with this story. They find that dual-class recapitalizations are often accompanied by the exit of large owners.

reverse causality story suggests that interpretations of regressions of market equity value on the degree of ownership proportionality must be made with care.[21]

Lins (2003) estimates the effect of managerial control rights on q using a cross-section of 1433 firms in 18 emerging markets. It is instructive to compare his results with those of Claessens et al. (2002) and La Porta et al. (2002). Unlike these authors, Lins (2003) finds no evidence that managerial cash flow rights affect q. On the other hand, he finds evidence that disproportional ownership has a significant negative effect on q, even when country dummies are included in the regression. The results vary across different specifications and different measures of control rights. One of his measures is a dummy variable indicating whether a management group obtains at least some of its control rights through pyramids. He finds a statistically significant coefficient on this dummy of -0.09 which implies a reduction in the value of non-controlling equity of roughly 6% for a firm with an average q. In a sub-sample of countries with low levels of investor protection, this value increases to 12% (assuming that countries in this sample have the same average q).

Due to limited data availability, Lins cannot use managerial cash flow rights as a control in most of his specifications. This limits the comparability with the results found by Claessens et al. (2002) and La Porta et al. (2002). Because these paper find strong evidence that controlling shareholders' cash flow rights are related to q, the extent to which the omission of such a variable can bias the results is unclear.

Finally, Lins (2003) discusses endogeneity problems and proposes an instrumental variables approach in order to pin down the direction of causality. He argues that "(…) it is also plausible that managers will increase their separation of cash flow rights and control rights if they want to maintain their control, but have knowledge that the cash flows of their firm will be lower in the future. In this case, expected poor performance causes a higher separation of cash flow and control rights, rather than the other way around" (p. 178). Lins uses firm size (measured by the book value of assets), and measures of past excess return

[21] An alternative story suggesting causation running from valuation to the choice of a pyramidal structure can be found in Almeida and Wolfenzon (2006).

and risk (alpha and beta from market models) as instruments for ownership. Since Demsetz and Lehn (1985), measures of firm size and volatility have been frequently used as instruments in the managerial ownership literature. However, it is difficult to argue that these variables should not affect performance directly. Indeed, most performance regressions, including the OLS regressions in Lins (2003), initially include firm size. To use firm size as an instrument, it must be omitted from the performance regression. But this means that the effect of firm size is incorporated into the error term of the performance regression that is being estimated by 2SLS.

Cronqvist and Nilsson (2003) analyze the impact of controlling shareholders' votes on q in a panel of Swedish firms during 1991-1997. One of the main advantages of their data is that they are able to use firm fixed effects in order to reduce concerns about omitted-variable biases. They find a statistically significant negative effect of the controlling-owner vote ownership on q, although the measure of the wedge between votes and cash flow rights does not display a statistically significant effect. However, when controlling-shareholder cash flow rights are added as an explanatory variable, neither votes nor cash flows enter significantly.[22]

Maury and Pajuste (2004) use a panel of 136 Finnish firms during 1993-2000 to estimate the impact of voting concentration on q. Unlike Cronqvist and Nilsson (2003), they do not use firm fixed effects. They find a negative effect of the ratio of voting rights to cash flow rights on q, but no significant direct effect of cash flow rights on q.[23]

Although dual-class shares are not permitted in Belgium, Becht et al. (2001) show that concentrated control is nevertheless achieved in Belgium through business groups, holding companies, and voting pacts. Buysschaert et al. (2004) examine equity sales inside and between Belgian business groups. In contrast to the other papers on complex ownership we discuss, their results do not suggest that control through ownership is negatively related

[22] This last result is not reported in their tables.

[23] They also use IV methods to address endogeneity concerns. However, they use lagged variables as instruments, which is a procedure unlikely to yield valid instruments.

to firm value. They find significant positive price reactions to the announcement of equity sales that lead to the creation of new cross-ownership links. Because these positive effects are present for both firms involved, cross-ownership ties appear to create value for the minority shareholders of both companies.

Takeover defenses

Takeover defenses such as poison pills and anti-takeover amendments to corporate charters are widely seen as managerial entrenchment mechanisms, because they are ostensibly adopted to prevent takeovers that are opposed by management. A large literature examines the effect of such mechanisms by conducting event studies around their introduction. The results from this literature are inconclusive since some studies find small positive effects, but others find small negative effects (see also the discussion in Bhagat and Jefferis, 2002).

A second set of papers uses variation in the regulatory and legal environment concerning takeovers to circumvent the problem that control is endogenous in performance regressions. In the United States, such variation occurs for two reasons. First, prior to the 1990s, states differed in the extent to which they permitted takeovers of banks. Second, following a wave of takeovers in the 1980s, many states introduced laws which made it more difficult for firms to be taken over. Such variation across state law provides a natural experiment to test the effect of managerial control, since it causes arguably exogenous variation in the degree to which managers face the threat of takeovers.[24]

James (1984) exploits variation across state laws restricting the acquisition of banks in 1979 to examine whether managers are more efficient the greater the takeover threat they face. He regresses measures of managerial inefficiency, also called expense preference

[24] Of course, one can argue that the laws were not exogenous since firms lobbied to have the laws implemented. Such lobbying activity may have been stronger the worse performance was. For the case of takeover laws, Bertrand and Mullainathan (2003) argue that the laws can be reasonably assumed to be exogenous, since they were often promoted by isolated firms.

behavior, which consists of total labor employed, occupancy expenses and total wage and salary expenses, on a dummy indicating high market concentration in states permitting bank acquisitions and other controls. If an active market for corporate control limits managerial inefficiencies, then he predicts a negative coefficient on this dummy. His evidence is consistent with this prediction. He also finds that banks in acquisitions states have higher return on equity than banks in non-acquisition states.

Brickley and James (1987) extend James (1984) by examining the relationship between the market for corporate control and other disciplining mechanisms, such as board independence and managerial ownership. They find that board independence and managerial ownership are negatively related to managerial expense preference behavior in non-acquisition states. But, ownership does not differ significantly between acquisition and non-acquisition states, while board independence is higher in acquisition states. Thus, while board independence and managerial ownership appear to be disciplinary mechanisms, they are not perfect substitutes for the market for corporate control.

While James (1984) and Brickley and James (1987) suggest that managers may use their control to indulge in expense preference behavior, neither paper provides conclusive evidence that the market for corporate control is disciplinary because neither paper controls for substitute disciplinary mechanisms. If such mechanisms vary across acquisition and non-acquisition states, then the estimates could be biased due to interactions with omitted variables.

Shranz (1993) addresses this concern using data from 1979 and 1987. She extends James (1984) and Brickley and James (1987) by examining differences in accounting rates of return across publicly-traded banks in acquisition and non-acquisition states after controlling for alternative incentive mechanisms.[25] She estimates a system of 3 simultaneous equations involving profit margins, ownership concentration and managerial ownership using 3-stage least squares. In both years, she finds that bank profits are higher

[25] It is not clear whether all banks in James (1984) and Brickley and James (1987) were publicly traded.

by almost 12 percentage points in acquisition states. She concludes that the market for corporate control has an economically significant impact on managerial behavior.

All of the above papers rely on cross-sectional data. Thus, they identify the effect of control by exploiting the difference between "treated" firms, i.e. firms in acquisition states, and control firms. If variation in acquisition laws is the only reason firms' performances differ across the states, then this method identifies a causal effect of corporate control on performance measures. In this case, the evidence suggests that the market for corporate control plays an important disciplining role, because managers will behave inefficiently when left to their own devices. However, if we believe that firms have different performances for unobservable reasons that are unrelated to acquisition activity, then we cannot give the estimated effects a causal interpretation.

To address this problem, one can use panel data to perform a difference-in-differences analysis. Such a study relies on comparing differences in performance between firms before and after state law allowed acquisition activity to performance of firms in non-acquisition states. Bertrand and Mullainathan (2003) conduct such a study using the passage of anti-takeover laws to measure changes in the threat of takeover. These laws were passed by different states starting in 1987. They essentially gave the boards of firms incorporated in those states the right to refuse takeovers, thereby making them more difficult.[26] Since the laws were passed at different points in time and some states never passed them, Bertrand and Mullainathan can exploit both variation in the takeover threat over time and in the cross-section to identify the effect of these laws. Using 224,118 plant-year observations for manufacturing firms in Compustat matched with the Longitudinal Research Database of the U.S. Bureau of Census over the years 1976-1995, they estimate regressions which include time and firm fixed effects and a dummy BC which is equal to

[26] Various studies examined the stock price reaction of the passage of the laws e.g. Pound, (1987), Romano (1987), Karpoff and Maltesta (1989) (see Easterbrook and Fishel (1991) for a summary of this literature). The results are inconclusive. One potential explanation is that it is extremely difficult to determine the date at which information about laws is incorporated into stock prices.

one if a law has been passed by a given state by a given year. The coefficient on BC is always the variable of interest. They find that blue and white collar wages increase, the destruction of old and the creation of new plants fall and productivity and profitability decrease after the introduction of these laws. Furthermore, the results are both economically and statistically significant. For example, following the passage of these laws, blue-collar workers' wages rose by 1% and white-collar workers' wages rose by 4 percent.[27] Their interpretation is that when managers have more opportunities to exploit their control, they do not try to build empires, as much of the literature argues, but try to avoid difficult situations, such as conflicts with their employees, i.e. they enjoy the "quiet life." While the results of this paper are consistent with the expense preference results in James (1984) and Brickley and James (1987) and the profitability results in Shranz (1993), from an econometric standpoint it is among the most convincing evidence that managers may exploit their positions to the detriment of shareholders.

The "intervention" of the fiduciary institution

Sometimes voting rights are separated from cash flow rights through mechanisms that are not so readily observable. Here institutional investors may play a large role (see the extensive discussion in Hu and Black, 2006). For example, they may hold shares in trust which they may vote if their clients assign them the voting rights or do not vote themselves. Because clients have the right to the cash flows, but the fiduciary may vote the shares, votes are effectively separated from cash flow rights. Institutions may also borrow shares. Typically, they undertake such loans to facilitate short-selling, but a side effect of the loan is the separation of voting rights from cash flow rights. Since the borrower returns the shares to the lender along with any accrued dividends or distributions, the lender retains the cash flow rights, while the borrower has temporary control over the voting rights. Finally,

[27] It is not necessarily clear whether these effects are short or longer term. Moreover, the difference-in-differences methodology does not allow the identification of non-linear effects of control.

institutions may unbundle cash flow from voting rights using derivatives markets. By hedging the economic risk on a position, voting rights are effectively separated from cash flow rights.

While such unbundling of voting rights from cash flow rights appears to be fairly easy, it is not well-known how widespread these phenomena are and what effects they have. This is perhaps surprising since these are not all recent phenomena. Indeed, prior to 1959, Adolph Berle was already greatly concerned with the separation between cash flow rights and voting rights that could occur through what he called "the intervention of the fiduciary institution." He argued (1959, p. 63-64) that the rapid rise of mutual funds, pension trusts and insurance companies was leading to the final divorce of ownership from control:

> *Now this stock certificate, carrying a right to receive certain distributions and to vote, begins to split. Once it is bought by a fiduciary institution, be it pension trust, mutual fund or insurance company, that institution becomes the "stockholder," holds legal title to the stock certificate and to its right to vote. But it has by contract dedicated the dividends or other benefits to distribution among beneficiaries under the pension contract, the fund arrangement, or the insurance policy. The one remaining power by which the recipient of corporate profits might have direct relation to corporate ownership has been divided from the benefit itself.*

Yet, although the role of institutions in unbundling voting and cash flow rights has been recognized for some time, to date the literature on this issue is very small (e.g. Brickley et al., 1988; Jarrow and Leach 1991; Payne et al., 1996; Adams and Santos, 2006; Christoffersen et al., 2007; Hu and Black, 2006) and most of the papers are relatively recent. The fact that this issue has not been studied extensively is perhaps sufficient to illustrate how difficult it is to trace such institutional unbundling. For example, vote lending does not trigger disclosure, because on paper the lender retains economic ownership of the shares.

We believe these issues warrant more attention both from policy makers and from academics. These issues are interesting not only because they are relatively unexplored, but also because the mechanisms of vote sales, fiduciary ownership and hedging may generate empirically cleaner measures of control than currently exist.

Institutions can also help insiders obtain more voting control than cash flow rights in the institution itself. This happens, for example, when bank trust departments invest in the shares of the bank itself (see Whidbee, 2002; Adams and Santos, 2006). The cash flow rights of these shares are dedicated to the trust client, but the bank may be able to vote these shares, depending on the terms of the trust agreement. As a result, the voting power of bank insiders effectively increases.

Concern with this mechanism is not new. In 1966, the Subcommittee on Domestic Finance of the United States Congress undertook a study of the extent to which banks could control themselves through shares they held in themselves in their trust departments (U.S. House, 1966). This study documented that 210 of the top 300 banks held on average 8% of their own shares in trust. As a result, these banks controlled 4.58% of their voting rights. Whidbee (2002) documents that between 1987 and 1997 subsidiaries of publicly-traded bank holding companies held on average 7.58% of the outstanding shares of the parent bank holding company.[28]

To our knowledge, Adams and Santos (2006) is the only paper documenting potential consequences of such control by insiders for firm value. Because the shares a bank holds in itself in trust do not provide insiders with cash flow rights, they argue that the voting rights attached to such shares represent a clean measure of managerial control. Current disclosure requirements make it difficult to measure such control.[29] Thus, they use the data compiled in U.S. House (1966) to examine the effect of (pure) voting control on firm performance. They regress proxies for Tobin's q and return on assets (ROA) on voting control and other variables. In OLS regressions, they find that voting control has a positive and significant effect on performance in linear specifications. When they add the square of

[28] Because of data limitations it is not clear how many votes these subsidiaries controlled.

[29] Although the Securities and Exchange Act of 1934 requires that institutional managers with investment discretion over at least $100 million in equity securities must disclose the extent of their voting authority over these securities on form 13F, this requirement only extends to shares with investment discretion. Thus, using 13F forms to trace control is not only tedious but may also underestimate control.

voting control to capture potential non-linearities, they find that the relationship approximates an inverse U-shape.

As is typical in such studies, an important concern is the extent to which the results are driven by potential endogeneity of control. The authors address this issue by using features of the legal and regulatory environment that arguably induce exogenous variation in voting control. At the time, state law varied in the extent to which fiduciaries could vote their shares. Some states specifically forbid fiduciaries from voting their own shares in trust, other states allowed such voting. Adams and Santos (2006) document that bank voting control is higher in states which allow voting, as one might expect. They argue that there are no strong reasons to believe these laws should be correlated with performance, except through variables they control for, so they use them as instruments for control. Using Hausman's (1978) specification tests they cannot reject the hypothesis that control is exogenous in their performance regressions, which suggests that their results are not driven by endogeneity problems. Their evidence thus suggests that managerial control may have a positive and economically significant value impact on performance over at least some range. Although perhaps surprising, we believe the results are plausible for several reasons. First, they are consistent with some theoretical arguments. Second, many studies documenting negative value impacts do not consider potential non-linear effects of control. Because the measure of control the authors use is potentially cleaner than other measures, it may also be easier to interpret their result in terms of control.

Management ownership and control

In countries in which ownership is relatively dispersed, such as the US and the UK, the main governance problem is between managers and outside shareholders. In such cases, low management ownership of cash flow rights may be a source of agency problems, even if formal voting rights are proportional to cash flow rights. We do not review this extensive

literature here, in order not to broaden the scope of this paper too much. The interested reader may find a useful survey in Demsetz and Villalonga (2001).[30]

Regarding management control, the literature on executive deaths is noteworthy for its clever attempt to circumvent endogeneity problems plaguing the estimation of managerial control effects. One way to circumvent such concerns is to examine performance changes around exogenous control changes. To be exogenous, the event triggering the control change has to be unrelated to performance. Johnson et al. (1985) were the first to recognize that the death of an executive is precisely such an exogenous event when the death occurs accidentally, e.g. it is not likely to have been triggered by stress due to declining performance. They report that the average stock price reaction to the sudden death of senior executives is zero, but that the reaction is positive when the executive is the founder and negative when the executive has a higher position in the firm. The result for the deaths of founders is generally taken to be evidence of managerial entrenchment since it suggests they are able to stay in office for too long.

Slovin and Sushka (1993) use a similar technique as Johnson et al. (1985) to shed light on the relation between managerial ownership and performance. They examine the stock price reaction to the death of inside (managerial) block holders of 5% or more shares and find that the stock market reacts positively to the death of block holders with more than 10% ownership. They also document that when inside block holders die, ownership tends to become less concentrated because of the distribution of the estate.[31] This implies that the death of an inside block holder can be considered to be an exogenous change in managerial ownership. Their results suggest that large controlling stakes in the hands of managers have a causal negative effect on performance due to managerial entrenchment.

[30] Some important papers in this literature are Demsetz and Lehn (1985), Morck et al. (1988), McConnell and Servaes (1990), Holderness et al. (1999), Himmelberg et al. (1999), among others.

[31] Their study is also related to Fields and Mais (1994), who find that managerial and institutional ownership decrease following seasoned equity issues and that the stock price reaction to the issue depends on managerial ownership.

The clever identification of exogenous events makes these studies extremely convincing. Some might argue that these studies represent the most persuasive evidence of managerial entrenchment. However, it is still important to be cautious in interpreting the results. For example, Johnson et al. (1985) find that the market reacts negatively to the deaths of executives who have higher positions and Slovin and Sushka (1993) find that the stock market reacts less negatively to deaths of block holders with more than 40% stakes. Thus, the combined evidence is not uniformly suggestive of managerial entrenchment. In addition, in contrast to Johnson et al. (1985), Slovin and Sushka (1993) never mention that they study deaths that are sudden or accidents. If they are not, then their results may be contaminated by events that are not exogenous. Perhaps most importantly, a common problem with event studies is that the event itself may have different interpretations. For example, firms typically have managerial succession processes in place (e.g. Vancil, 1987; Naveen, 2006). Thus, the announcement of the death of one executive also signals that a successor, who may or may not be known to the market, is taking over. The extent to which this information may affect the interpretation of executive deaths or can be disentangled from them is not clear, but we believe more research in this area could be fruitful.

5.3 Comparative analyses of different mechanisms

An interesting question is whether any value created or destroyed by deviations from one share-one vote is a function of the degree of ownership disproportionality only or whether the mechanism used also matters.[32] Only a few papers tackle this question directly.

Mikkelson and Partch (1994) analyze 66 dual-class recapitalizations and 52 firms that adopted an ESOP (Employee Stock Ownership Plan) in the period 1976-1987 in the US. Several papers use ESOPs to examine the effect of managerial voting power on firm value (e.g. Gordon and Pound, 1990; Chang and Mayers, 1992; Chaplinsky and Niehaus, 1994; Dhillon and Ramirez, 1994). The reason is that the trustee of an ESOP, who is

[32] We thank one of our referees for asking this question.

typically appointed by management, may be able to vote at least the unallocated shares in the ESOP without being entitled to all the corresponding cash flow claims. Thus, ESOP shares can be interpreted as measures of managerial control in excess of managerial ownership interests.

Mikkelson and Partch find many similarities in the consequences of adopting ESOPs and dual-class structures. In both cases, operating performance falls. However, they find no evidence that dual-class shares and ESOPs affect the likelihood of control changes and management turnover. Overall, their results suggest that both mechanisms lead to roughly similar outcomes.

Bennedsen and Nielsen (2007) analyze the impact of ownership disproportionality on market-to-book for a large sample of firms in 14 Western European Countries. Their data set is based on an extension of Faccio and Lang's (2002) study on the ultimate ownership of Western European companies. They average their data over the period 1996-1998 and run regressions of market-to-book ratios on measures of ownership disproportionality and other standard controls, such as firm size and sales growth. Unlike most of the previous studies, they include industry and country dummies in all regressions.

They find a negative effect of a dummy indicating that voting rights exceed cash flow rights on market-to-book. This effect is statistically significant in most specifications. They also try to assess the effect of each individual mechanism of separating ownership and control. They find that disproportional ownership caused by dual-class shares is the most detrimental to market-to-book value, followed by pyramids. Cross-shareholdings and other mechanisms do not have a statistically significant impact on market-to-book.

Villalonga and Amit (2006) try to assess the individual effects of disproportional ownership through dual-class shares, voting agreements, pyramids, and disproportional board ownership in their panel of US firms. Their results suggest that not only the form of disproportional ownership matters, but also that functional form considerations (i.e. how one measures disproportional ownership) have a great impact on the results. If control is measured as a difference with respect to cash flow rights, their findings suggest that control via dual-class shares reduces q, but voting agreements and pyramids do not matter. If

control is measured as a ratio instead, dual-class shares do not matter, while control via voting agreements and pyramids *increases* q. However, such results should be viewed with care, especially given the small number of pyramidal arrangements in the US.

While the evidence in these papers is suggestive that different mechanisms may have different value impacts, none of them addresses the difficult problem that a firm's choice to implement a particular control structure is not random. As Bennedsen and Nielsen (2007) point out, different mechanisms may serve different goals. They observe, for example, that dual class shares are frequently implemented through IPOs, whereas pyramidal structures often arise because of acquisitions. To understand the consequences of different control-enhancing mechanisms, more work is needed to understand firms' choices.

6. The value of control: Estimating private benefits

The basic hypothesis underlying most studies we survey above is that deviations from one share-one vote will affect the market value of outside equity because they allow controlling shareholders to extract private benefits. But without direct evidence that control is valuable to controlling shareholders, it is not always clear that private benefit extraction is the best explanation for the evidence. The literature that tries to measure private benefits of control directly thus serves an important corroborating function.

There are two main approaches to estimating the value of control to the controlling shareholders. The first one is to infer it from the difference between the market value of different classes of voting shares. If control is valuable (due to private benefits), shares with superior voting rights should trade at a premium because there will be stronger demand for these shares if there is a control contest. The second approach is to infer the control premium from sales of controlling blocks. The premium one pays over the publicly traded value of shares for a controlling stake should reflect how much one values control.

The first approach has been the most popular in the literature. Examples of single-country analyses of the value of superior voting rights can be found in Jog and Riding (1986) and Smith and Amoako-Adu (1995) for Canada, Levy (1982) for Israel, Zingales (1994) for Italy, Chung and Kim (1999) for South Korea, Bergstrom and Rydqvist (1990, 1992) and Rydqvist (1996) for Sweden, Horner (1988) for Switerzland, Megginson (1990) for the UK, and DeAngelo and DeAngelo (1985), Lease et al. (1983, 1984), Zingales (1995a), and Cox and Roden (2002) for the US, amongst others.

Most of these studies find a positive value of superior voting rights, although negative values are also sometimes reported. However, the magnitudes of the premia exhibit considerable variation across countries, samples and methods. The most comprehensive study of the value of voting rights is Nenova (2003), which provides measures of the value of the voting rights of the control block group in a sample of firms in 18 countries in 1997. To estimate values that are comparable across a large number of countries, Nenova (2003) develops a methodology to compute the voting premium associated with a controlling block of shares based on the difference between the market prices of different classes of shares. She finds that average voting premia (as a percentage of the market value of equity) vary from -5% in Finland to 36.5% in Mexico (see Table 2 below for estimates for some European countries). She also studies the determinants of cross-country differences in the value of control-block votes. She finds that countries with strong law enforcement, good investor protection indices, and pro-investor takeover rules have lower voting premia. These results suggest that laws, regulations, and enforcement limit the extraction of private benefits by controlling shareholders that occurs at the expense of non-controlling shareholders.[33] In addition, she finds that firm-level charter provisions that enhance the power of controlling shareholders reduce the value of control-block votes. This last result suggests that votes and charter provisions are alternative mechanisms for seizing and maintaining control and that they are substitutes from the controlling shareholders' standpoint.

[33] Modigliani and Perotti (1998) find similar results.

The second approach was pioneered by Barclay and Holderness (1989). Dyck and Zingales (2004) apply it to a large sample of firms in 39 different countries. They use a sample of 393 control transactions from 1990 to 2000 and find an average control value of 14% of equity value, with estimates ranging from -4% in Japan to 65% in Brazil. Although there are a few large discrepancies between the estimates by Nenova (2003) and Dyck and Zingales (2004), overall their results are reasonably consistent with each other (see Table 2 for a comparison of some results from these two papers).

--- Insert Table 2 about here ----

Regarding the determinants of the control premium, Dyck and Zingales (2004) find that better accounting disclosure rules, better protection of minority investors, and better quality of law enforcement are negatively related to the value of corporate control. These results are similar to the ones in Nenova (2003). Dyck and Zingales (2004) also examine the impact of some extra-legal institutions. They find evidence that product market competition, public opinion, and taxes also reduce the average control premium.

Overall, the evidence on the value of the control premium strongly supports the hypothesis that sizeable private benefits exist and that controlling shareholders are willing to pay for these private benefits. Furthermore, because the legal environment and alternative monitoring entities, such as the media and the tax authorities, restrict the amount of private benefits of control that can be extracted, the evidence suggests that controlling shareholders enjoy private benefits at the expense of non-controlling shareholders.

Many important sample selection issues limit the interpretation of these results. First, regardless of the method used, these estimates only provide a measure of the private benefits that are not shareholder-specific. Only those private benefits that controlling shareholders enjoy regardless of their identities can have market value. In a sense, the control premium measures only *transferable* private benefits. If a founder enjoys being in control of her own company for its own sake, and if she cannot sell her controlling stake for a premium that is sufficient to compensate her for losing this non-pecuniary benefit, we

will not observe any trade. As a consequence, empirical estimates of the value of private benefits will be biased downwards.[34]

This consideration is helpful in understanding some of the findings, such as the apparent puzzle associated with Scandinavian countries. For example, in Sweden, control-enhancing mechanisms such as dual-class shares, pyramids, and cross ownership are widespread. However, the estimates of the control premium in Sweden are very small. Why do controlling groups put these mechanisms in place when measured private benefits are small? The answer may be that shareholder-specific private benefits, such as the ones that family firms might enjoy, are likely to be high, but they are not reflected in the market prices of control transfers. Thus, in countries like Sweden, where family control is ubiquitous, but the legal environment and media awareness are strong, the measured value of control is likely to understate the value of private benefits of control substantially.[35]

There is another sample selection problem that is related to but different from the one just described. If the likelihood of issuing dual-class shares or engaging in trades that transfer control depends on the expected market value of control, then the resulting

[34] Strictly speaking, what matters is the dispersion of the value of private benefits across different potential owners. Formally, suppose that there are *n* possible acquirers for a given company. Each acquirer has his own overall valuation (security benefits plus private benefits) of the company given by Vi, for all i = 1,...,n. We define non-transferable private benefits as the difference between the total valuation for the highest-valuation potential acquirer and the total valuation of the second highest-valuation acquirer. If the highest-valuation individual is originally in control, one will not observe any trade and the market value of control will understate the true value of the private benefits. On the other hand, if the highest-valuation individual is not the original owner, he will seldom have to pay up to his full valuation to achieve control—the minimum he needs to pay is the second highest valuation. In this case, too, the market value of control understates the true value of private benefits. Finally, the downwards bias is smaller the lower is the value of non-transferable private benefits, according to our definition.

[35] For additional arguments suggesting that private benefit extraction in Sweden does not occur at the expense of non-controlling shareholders, see Holmen and Knopf (2004).

estimates of private benefits are biased. In other words, if firms in which controlling shareholders can extract large private benefits are less likely to experience changes in control, the estimates of private benefits are again biased downwards. For example, suppose that the controlling group of a given firm can extract a large amount of private benefits at the expense of outside investors through self-dealing. Without changes in control, the true value of these private benefits is difficult to infer. However, if the controlling group decides to sell its controlling block, the value of the deal will provide hard evidence on the value of self-dealing, which may trigger negative publicity and scrutiny by regulators. Such firms will be more reluctant to trade their controlling blocks, and will thus be underrepresented in the sample. Notice that this argument holds for *transferable* control benefits, and it is more likely to affect the results for countries with stronger legal environments.

In sum, sample selection arguments suggest that the empirical estimates for private benefits of control are best interpreted as lower bounds for the true private benefits. The arguments above also suggest that these bounds are farther away from the true value of private benefits the stronger is the legal and extra-legal protection of investors and the more common is family control.

Although in most of the papers above, and especially in Nenova (2003) and Dyck and Zingales (2004), these problems are explicitly discussed, many studies take the estimates of private benefits at their face value, without considering the downward bias caused by sample selection. We believe that policy implications are quite different once one takes sample selection considerations into account.

7. Beyond shareholder value: Financial development, market frictions, and stakeholders.

The effects of disproportional ownership on social welfare go beyond its impact on shareholder value. Indeed, it is only under only under very restrictive assumptions that maximizing social welfare coincides with maximizing shareholder value (the monetary

value of all pecuniary and non-pecuniary benefits accruing to all shareholders): contracts must be complete, markets informationally efficient and competitive, and no externalities must exist. In practice, these conditions are never met, which naturally leads to the question of how disproportional ownership affects social welfare by routes other than through shareholder value.

One important issue is the economy-wide effects of disproportional ownership. Control concentration may have macroeconomic effects, with potential implications for growth and development. La Porta et al. (1999) provide evidence that low investor protection is negatively related to financial development and the size of stock markets. If high control concentration hampers financial development, all firms could face high costs of capital, which could lead to lower values for all firms in a country. Thus, it is possible that we might not be able to identify a value effect even when one exists.

Morck et al. (2000) is one of the few empirical papers that try to test this conjecture. They show that countries with billionaires who have inherited their wealth have lower growth rates than the ones in which billionaires are self-made. Morck et al. (2005) and Khanna and Yafeh (2006) provide some other examples and arguments for the existence of positive and negative effects of control concentration for the economy-wide allocation of capital. While Morck et al. paint a somewhat negative picture of control concentration, which may lead not only to undeveloped markets but also to political entrenchment, Khanna and Yafeh focus more on the beneficial effects of business groups as substitutes for missing institutions in emerging markets.

Dyck and Zingales (2004) find evidence that high private benefits are negatively related to the degree of financial market development, as measured by the number of IPOs divided by the population, the number of listed firms divided by the population, and the external market capitalization relative to GDP (see La Porta et al, 1997). As they point out, their evidence is also compatible with theories in which the extraction of private benefits has no direct welfare consequences, just distributional ones (Zingales, 1995b). However, because a less developed financial market increases the cost of capital for all firms, underinvestment and economy-wide capital misallocation may occur.

An indirect way of addressing the possibility that the extraction of private benefits may increase the cost of capital is to find out which types of investors are more likely to hold shares in firms in which private benefits are expected to be high. Using a large database of individual portfolio decisions in Sweden, Giannetti and Simonov (2006) document that these are investors that have other connections to the firm. Although it is plausible that a smaller shareholder base caused by private benefit extraction may increase the cost of capital, it is difficult to assess the magnitude of such an effect.

Even if spillover effects of control concentration are non-existent, contractual incompleteness may create inefficiencies. By itself, the evidence that private benefits exist and that they are partly due to (involuntary) transfers from non-controlling to controlling shareholders does not imply that total firm value is reduced by private benefits. We cannot say anything regarding the efficiency of private benefits. However, if there are no mechanisms by which controlling shareholders can commit not to extract private benefits from non-controlling shareholders, even efficiency-neutral extraction of private benefits can destroy firm value. In such a case, the return required by outside investors may be so high that few corporate investments with external funds will be undertaken.

Although it is difficult to directly analyze the extent to which a high cost of capital or rationing induced by private benefits precludes a firm from realizing its full potential value, one can address this issue indirectly by analyzing the choice of mechanisms that reduce private benefit extraction. One such mechanism is the decision to cross-list. Coffee (1999, 2002) and Stulz (1999) argue that cross-listing in the US works as a commitment device not to extract too many private benefits at the expense of outside shareholders. Because shareholder protection and disclosure regulations in the US are believed to be better than in many countries with less developed stock markets, if controlling shareholders would like to trade private benefits for access to cheaper capital, they can accomplish this by issuing American Depositary Receipts (ADRs). Consistent with this view, Reese and Weisbach (2002) provide evidence that cross-listing in the US increases the ability of non-US firms to raise capital in their own local capital markets. Using a sample of dual-class share firms, Doidge (2004) finds that cross-listing in the US benefits all shareholders of

non-US firms, and that this positive effect is greater for holders of inferior voting shares. This evidence is consistent with what he calls the *bonding hypothesis*, which states that controlling shareholders choose to cross-list in order to commit not to extract private benefits at the expense of outside shareholders, and thus face lower costs of capital.

Doidge (2004) also finds that private benefits (measured by voting premia) are lower for firms that choose to cross-list, which suggests either that cross-listing reduces private benefits or that low private benefit firms choose to cross-list more often, or both. Firms that expect to gain more from better access to capital than what they lose in private benefits should choose to cross-list.

Another way of looking at this issue is to study cases of expropriation as a consequence of ownership disproportionality. Expropriation is a form of opportunistic behavior by controlling shareholders that takes place when an unexpected event happens. To be considered real expropriation, the possibility of this event should not have had any impact on the price of non-controlling shares when they were issued (otherwise this transfer was priced and outside shareholders were fairly compensated for it). This could be due to investor irrationality, but it is more likely that both controlling and non-controlling shareholders do not fully contemplate all possible future expropriation opportunities, so that these do not always get reflected into prices. Uncertainty about the future in a complex world, bounded rationality and incomplete contracts are the main reasons for the existence of expropriation risk.

Lemmon and Lins (2003) compare the stock returns of a sample of 800 East Asian firms during the Asian crisis of the late 90s. They find evidence that firms with high voting concentration and highly disproportional ownership structures exhibited significantly worse stock return performances than firms with low concentration of control and low separation between voting and cash flow rights. They interpret their findings as evidence that expropriation of non-controlling shareholders became more attractive to controlling owners once other investment opportunities became less profitable with the advent of the crisis. Of course, expropriation per se cannot tell us anything about efficiency. For example, from their evidence it is impossible to know whether expropriation destroyed any real value or if

it was simply a transfer from non-controlling to controlling shareholders. If this expropriation risk was not anticipated, as the evidence in Lemmon and Lins (2003) for the period before the crisis suggests, it could not have raised the cost of capital to firms with highly concentrated voting structures. Thus, if this was a case of real expropriation (i.e. unanticipated and thus unpriced risk), then no value would have been destroyed by capital misallocation *ex ante*.

Finally, there is the issue of whether excess control benefits or hurts the interests of stakeholders other than shareholders. Perhaps the most direct evidence on this issue comes from Bertrand and Mullainathan's (2003) study of the effect of US anti-takeover laws on corporate outcomes. They do not provide direct evidence that managers benefit *themselves* when they are insulated from takeovers. Instead, managers appear to act in the interests of some stakeholders, specifically employees. However, at roughly the same time as the anti-takeover laws were passed, so-called non-shareholder constituency laws were passed. These gave boards the right to consider the interests of non-shareholder constituencies in takeovers when deciding whether to accept a bid. It is possible that the evidence in Bertrand and Mullainathan (2003) also reflects the legal emphasis on non-shareholder constituencies, i.e. it is not clear that managers acted (only) in their own interests.

8. Summary and implications for future research

Because the predicted negative consequences of concentrated control are potentially severe, the empirical literature is important to help differentiate between theories concerning the negative and positive effects of control, as well as help assess the economic significance of explicit and implicit deviations from proportionality. This is essential for policy makers, because if the effects of deviating are not large, then there may be no need to regulate. It is also essential for academics to help direct their research efforts. However, as we describe above, the findings from the empirical literature on ownership disproportionality often disagree. This should not be viewed as a weakness of this literature. Different studies use different sample periods, often in different countries, and look at different mechanisms.

There should not necessarily be a presumption of agreement among these studies. Results are likely to vary across different institutional environments, across firms with different characteristics and across methodologies. The heterogeneity in the evidence suggests that the issue is complex and that simple conclusions may not be possible. Ownership disproportionality may destroy the value of outside equity in some contexts, but not in others. More work is needed to identify the circumstances in which its effect is positive and those in which it is not.

One particular topic on which more work is needed is the determinants of ownership proportionality. The evidence to date suggests that many firm and country characteristics are correlated with the degree of ownership proportionality, however, the literature on this issue is small.

Most of the papers we review analyze the effects of deviations from one share-one vote on the market value of outside equity using either an event-study or valuation regressions. The event-study evidence focuses on dual-class recapitalizations (or share unifications). Some of these studies document that firm value appears to fall due to dual-class recapitalizations, but at least an equal number of studies document that firm value appears to *increase* or remains the same. The fact that such studies often disagree with each other indicates that value effects of events that change the proportionality of ownership are very hard to identify empirically. One difficulty lies in separating the "pure" effect of the announcement of a change in the degree of ownership proportionality from other changes in the firm that accompany it. Often *both* dual-class recapitalizations and share reunifications appear to be value increasing events. This is not surprising given the endogenous nature of most of such decisions: changes in security-voting structures are more likely to occur in firms that expect these changes to be value-enhancing.

Although there is considerable variation across results, most of the valuation regression studies suggest the existence of a disproportional ownership discount on the market value of outside equity. There are also some other general lessons from these papers.

Firstly, it is clear that the estimated effects are quite sensitive to how disproportional ownership is measured. As we discuss in Section 3, different authors use different methods

for measuring voting rights in complex ownership structures. Furthermore, the choice of the functional form is important. Some papers use dummy variables to indicate ownership proportionality, while others use the difference and/or the ratio between votes and cash flow rights owned by the controlling group, and some use all these measures. The results can be quite different depending on which variable is used. Finding significant results for all proxies for disproportional ownership is the exception rather than the norm in this literature.

Secondly, the set of control variables matters. Very few of the reported results appear statistically significant when both voting rights and cash flow rights enter as separate regressors. Some of the "wedge" variables appear to be capturing some of the effects of cash flow rights concentration rather than the presumed "entrenchment" effects of voting rights concentration. In some studies, country level variables, such as country dummies and investor protection, appear to have a large effect on the estimated results.

Thirdly, endogeneity concerns are important. Only Cronqvist and Nilsson (2003) use firm-fixed effects and find significant results. However, their results become insignificant once they include ownership of cash flow rights in the set of explanatory variables. There have been few studies in which instrumental variable methods were employed and even fewer in which the instruments seemed convincing.

Overall, there is some support in the literature for the hypothesis that deviations from one share-one vote affect the value of outside equity negatively. This support comes mostly from studies that run valuation regressions. Few event studies detect negative effects of deviations. On the other hand, only a limited number of (mostly event-based) studies find positive effects of deviations on the market value of outside equity.

There are two (related) reasons why a negative effect of deviations from one share-one vote on the market value of outside equity may create inefficiencies. Firstly, it may reflect inefficient extraction of private benefits by controlling shareholders, i.e. the value that controlling shareholders gain may be less than what outside shareholders lose. Secondly, the firm's cost of capital may be higher when deviations are possible, which may

lead to inefficient levels of investment and capital misallocation (including dynamic effects and spillovers, such as a negative impact on financial and economic development).

To address the empirical relevance of such possibilities, much more work is needed. To determine whether the loss in value for outside shareholders is greater or smaller than the gain in private benefits for controlling shareholders, one would need to study the effects of deviating from one share-one vote on the value of private and security benefits simultaneously. The existing literature on the value of control does not investigate the effect of the degree of ownership disproportionality on the control premium, which is necessary for answering the question of whether deviations from one share-one vote destroy total shareholder value.

To answer the (perhaps more important) question of whether ownership disproportionality leads to a higher cost of capital and thus lower or inadequate investment, more work examining the impact of deviation mechanisms on the decision to raise equity capital is needed. If they are not allowed to separate votes from cash flow rights, controlling shareholders, in particular entrepreneurs, may choose to restrict the amount of public equity capital they use. Thus, the cost of capital, as perceived by controlling shareholders, may be either higher or lower depending on the availability of control-enhancing mechanisms.

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Table 1: Proportion of Dual-Class Firms in Total Listed Firms

Table 1 shows data from Pajuste (2005), Table II on the percent of total listed firms with dual-class shares in selected European countries. Pajuste's data excludes banks and credit institutions. Her data source is *Moody's/ Mergent International Companies* Manuals for 1996 and 2002.

Country	***1995***	***2001***
Denmark	59.7%	36.6%
Finland	45.5%	23.9%
Germany	24.3%	11.5%
Italy	41.0%	34.6%
Norway	23.9%	7.4%
Sweden	61.3%	46.3%
Switzerland	46.7%	26.4%

Table 2: Value of Control as a Percentage of Market Equity

Estimates of the average value of control for selected European countries. Sources: Nenova (2003), Table 3, and Dyck and Zingales (2004), Table II. The figures from Nenova (2003) result from the comparison of mean values of control-block votes to firm market value for listed dual-class firms in 1997. The figures from Dyck and Zingales (2004) represent block premia in control block transactions during the period 1990 to 2000.

Country	*Nenova (2003)*	*Dyck and Zingales (2004)*
Austria	-	38%
Czech Republic	-	58%
Denmark	1%	8%
Finland	-5%	2%
France	28%	2%
Germany	10%	10%
Italy	29%	37%
Netherlands	-	2%
Norway	6%	1%
Poland	-	13%
Portugal	-	20%
Spain	-	4%
Sweden	1%	7%
Switzerland	5%	6%
UK	10%	1%