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One Share - One Vote: The Theory*

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Abstract

The theoretical literature on security-voting structure can be organized around three questions: What impact do non-voting shares have on takeover outcomes? How does disproportional voting power affect the incentives of blockholders? What are the repercussions of mandating one share - one vote for firms' financing and ownership choices? Overall, the costs and benefits of separating cash flow and votes reflect the fundamental governance trade-off between disempowering blockholders and empowering managers. It is therefore an open question whether mandating one share – one vote would improve the quality of corporate governance, notably in systems that so far relied on active owners.

JEL Classifications: G32

Keywords: Security-Voting Structure, Market for Corporate Control, Controlling Minority Shareholders

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1. Introduction

The most important contractual right that shareholders have is widely taken to be their right to vote on important corporate matters (Manne, 1964; Easterbrook and Fischel, 1983). That provided, the question arises how voting rights should be allocated among shareholders. At first glance, it seems natural that shareholders who supply equal amounts of capital or hold equal claims should have equal opportunity to influence decisions. However, the so-called one share - one vote principle is often violated in reality. More than one third of the 300 largest European companies in 2005 deviated from the principle (Deminor Rating, 2005). In North America, such deviations are less frequent but still common. The fraction of listed firms with dual-class shares is about 6 percent in the US and about 22 percent on the Toronto Stock Exchange (Gompers et al., 2007; Chemmanur and Jiao, 2006).¹

Corporate voting practices have varied over time as much as they vary across countries today. In Ancient Rome, so-called *publicani* issued shares with different voting rights to the wealthy and to the wider public (Chancellor, 1999). During the Middle Ages, the common practice in Europe evolved from a one member - one vote standard to a variety of disproportional voting structures, some favouring small or medium-sized shareholders, others enhancing the control of large shareholders (Dunlavy, 1998; Pistor et al., 2003). Early US practices typically limited the voting power of individual shareholders but by the beginning of the twentieth century firms empowered dominant shareholders by selling non-voting shares to smaller shareholders (Manne, 1964). Following the uprising against Big Business, the NYSE disallowed in 1926 the listing of firms with non-voting stock (Seligman, 1986). Both in the US and in Europe, issues of inferior voting stock then became rather uncommon until the latter half of the 20th century when their (re-)appearance often concurred with takeover waves (Jarrell and Poulsen, 1988; Rydqvist, 1992). In 1986, the NYSE abandoned the one share - one vote requirement bowing to competitive pressure from the Amex and NASDAQ, both of which admitted firms

¹Other financing arrangements with unequal voting rights among providers of equity capital include private equity and hedge funds. These funds are typically run by general partners, while limited partners have no voting power and are solely protected by covenants and a limited investment period. Similarly, contracts between venture capitalists and entrepreneurs typically allocate cash flow rights separately from voting rights (Kaplan and Strömberg, 2003).

with multiple share classes. A number of European countries concurrently changed their laws to accommodate deviations (Arruñada and Paz-Ares, 1995), but more recently the trend has reversed again. European regulation is by and large becoming more restrictive, and the frequency of deviations is gradually decreasing towards the US level (Goergen et al., 2005; Pajuste, 2005). Moreover, differences at the national level fuel the ongoing debate about a EU-wide prohibition of deviations, a policy issue intimately related to takeover regulation (Ferrarini, 2006) and the call for stronger shareholder rights (Deminor Rating, 2005).

At the most basic level, the allocation of voting rights across shares, henceforth the security-voting structure, matters because it determines the balance of power among shareholders as well as their leverage over management. As such, it shapes the governance mechanisms that rely on active owners and control transfers, thereby influencing how efficiently firms are run.² Proponents of one share - one vote argue that it is most conducive to good governance. In particular, one share - one vote makes for a level playing field in takeover contests, which ensures that control is allocated to the most efficient party. Moreover, it aligns voting power and economic incentives, which makes blockholders more prone to pursue value-maximizing actions.

This paper examines whether or to what extent the theoretical literature substantiates the optimality of one share - one vote. (Adams and Ferreira (2007) provide a survey of the empirical literature on the one share - one vote principle.) We organize the extant literature around three broad questions: First, what impact does the security-voting structure have on takeovers? Second, how does it influence the incentives of blockholders during the normal course of business? Third, how does the one share - one vote rule affect firms' choice of ownership and financing?

In our reading of the theory, the answers to these questions raise doubts whether one share - one vote consistently outperforms other (dual-class) structures with respect to promoting efficient control allocation and mitigating agency problems. First, takeover models show that one share - one vote is most conducive to a so-

²Other important governance mechanisms are the financial structure, executive compensation, the board of directors, product market competition and legal investor protection (Becht et al., 2003; Shleifer and Vishny, 1997). As the effectiveness of these mechanisms varies across firms and countries, the importance and prevalence of active owners and takeovers depends on the respective governance system (Allen and Gale, 2000).

cially optimal control allocation in some instances but not in others. In widely held firms, one share - one vote is optimal only when several bidders compete, as it ensures that the most efficient bidder gains control. By contrast, dual-class structures mitigate the free-rider problem in widely held firms and hence promote takeover activity in case of a single bidder. In firms with controlling shareholders, one share - one vote is optimal, as it minimizes the inefficiencies in negotiated control sales. However, controlling owners may prefer dual-class structures to extract higher takeover premia from acquirers, even though this increases the risk of an inefficient control allocation. Therefore, one share - one vote could be advocated on the grounds that it improves the control allocation in firms with controlling minority shareholders, not least because many dual-class firms have such an ownership structure.

Second, blockholder models show that deviations from one share - one vote come with costs as well as benefits. Leveraging a blockholder's voting power improves her ability to monitor and intervene in management on behalf of all shareholders. At the same time, it enables her to take self-serving actions, such as diverting corporate resources for less productive private purposes. Similarly, concentrated voting power insulates corporate insiders from the disciplining effect of the market for corporate control. However, it also avoids undesirable responses to contestable control, such as value-decreasing actions to fend off takeovers (entrenchment).

Third, mandating one share - one vote may have adverse effects on firms' choice of financing and ownership structure as well as their growth. On the one hand, entrepreneurs may eschew public equity markets for fear of losing control. Instead, they may resort to inferior forms of financing or simply forgo valuable investment projects. On the other hand, mandating one share - one vote may discourage blockownership. It forces dominant shareholders to increase their equity stake or to accept having less influence. Either option may be less attractive than dissolving the entire block. While this would mitigate the conflict among shareholders, it also strengthens the position of managers, thereby aggravating the shareholder-manager conflict. That is, if blockholders can expropriate (minority) shareholders, so can presumably professional managers.

Hence, the central question is whether entrenched owners or contestable man-

agers are more prone to run firms efficiently. Large owners' incentives to maximize value stem from their large equity stake, but they are rather immune to hostile takeovers. Professional managers, on the contrary, are more exposed to hostile takeovers but also have less financial interests. This seems to be a fundamental dilemma not only in the one share - one vote debate but in corporate governance generally (Becht et al., 2003). Thus, any policy that weakens blockholders must be based on the confidence that managers are at least as well disciplined by other governance mechanisms, such as legal protection, strong boards or a well-functioning takeover market (Shleifer and Vishny, 1997).

In addition, mandating one share - one vote confronts policy-makers and regulators with considerable implementation problems, irrespective of its desirability. Active owners may resort to other means of separating ownership and control, such as pyramids or derivative transactions. As a result, implementing proportionality remains either partial, restricted to specific deviation devices, or requires more far-reaching changes in stock market regulations, disclosure rules or intercorporate taxation.

In our analysis, we use the simple dual-class structure with voting and non-voting shares, both entitled to the same (pro-rata) dividends, as the representative means to separate cash flow and voting rights.³ The derived insights also extend to multi-class structures, pyramids or cross-ownerships. The reason is that any control and cash flow allocation, notably controlling minority structures, achievable through these structures can be replicated by the simple dual-class structure (Bebchuk et al., 2000). This does not hold for 'lock-in mechanisms' such as voting and ownership ceilings, priority shares, depositary certificates, and the French system of double voting shares, which we discuss separately. The verdict for these mechanisms is less ambiguous, since they insulate managers from both takeovers and effective shareholder monitoring.

The survey proceeds as follows. Section 2 examines the impact of the security-voting structure on tender offers and negotiated control sales. Section 3 analyzes

³In practice, dual-class structures may comprise a superior class with multiple votes per share as in e.g., Sweden, or non-voting shares with or without preferential dividends as in e.g., Germany and Italy. National regulations usually impose a minimum ratio of votes per inferior share to votes per superior share, e.g., 1/10, or some minimum proportion of voting shares e.g., 50 percent (Rydqvist, 1992).

how the security-voting structure influences the effectiveness of blockownership as a governance mechanism. Section 4 explores how restricting the choice of security-voting structure may affect firms' financing and ownership decisions. It also discusses the difficulties of implementing the one share - one vote rule and minority shareholder protection as a rationale for regulation. Section 5 describes lock-in mechanisms and their effects. Section 6 concludes the theoretical survey.

2. Control Transfers and Security-Voting Structure

A well-functioning takeover market subjects firms to a continuous auction process. In principle, firms should therefore be ultimately owned and managed by those who maximize their value (Manne, 1965; Jensen and Ruback, 1983). However, the theoretical literature identifies various reasons that impair an ex-post efficient control allocation, notably incentive and coordination problems inherent in the takeover process.⁴ Our concern is whether dual-class share structures mitigate or exacerbate these frictions.

Much of the takeover literature, including the strand on security-voting structure, presupposes a publicly listed target firm with dispersed ownership and freely tradeable shares. Indeed, dispersedly held dual-class firms are by no means unusual. In a comprehensive sample of US dual-class firms between 1997 and 2002 collected by Gompers et al. (2007), corporate insiders do not own the vote majority in about a third of the observations. In the sample of Pajuste (2005), which covers 493 dual-class firms from seven European countries (Denmark, Finland, Germany, Italy, Norway, Sweden and Switzerland) during 1996 to 2002, the two largest shareholders own together less than 20 percent of the votes in about a quarter of the firms.⁵ Nevertheless, many listed companies, outside the UK and US, have a large

⁴There are several reviews of the takeover literature, including Andrade et al. (2001), Bhagat et al. (1990), Becht et al. (2003), Bruner (2002), Burkart and Panunzi (2006), Holmström and Kaplan (2001), Hirshleifer (1995), Jensen (1988), McCahery et al. (2004), Scherer (1988) and von Thadden (1990).

⁵In the sample of Bennedsen and Nielsen (2004), ultimate control is dispersed in about 57 percent of 1035 European dual-class firms, i.e., no group that comprises every ultimate owner with at least 5 percent of the votes holds collectively the majority. For the 500 largest firms, this figure is above 67 percent. However, these figures are likely to overestimate the incidence of dispersed control, as ultimate control in this sample is measured by the weakest link along the control chain. For instance, if a family owns 20 percent of firm A, which in turn owns 50 percent of firm B, then this family is said to ultimately control 20 percent of firm B (Faccio and Lang, 2002).

shareholder (La Porta et al., 1999; Barca and Becht, 2001; Claessens et al., 2000; Faccio and Lang, 2002). Moreover, these firms are more prone to use dual-class shares. We therefore examine the role of the security-voting structure for both dispersedly held firms and firms with a controlling shareholder.

2.1. TENDER OFFERS

In a typical tender offer, the acquiring firm, henceforth the bidder, offers to purchase the shares of dispersed shareholders for cash or in exchange for other securities. If a majority of shares is tendered, the bidder gains control over the target firm. In this section, we presuppose that such a public tender offer is feasible. In particular, we assume that there are neither restrictions on the accumulation of shares or votes, nor priority shares endowed with veto power, nor controlling shareholders.

Our analysis of the tender offer process considers a widely held target firm that is approached by a bidder who does not own any shares prior to the offer. The firm has a dual-class share structure with $n_v \in \{1, \dots, n\}$ voting shares, the remaining $(n - n_v)$ shares being non-voting. (For $n_v = n$, the dual-class structure is reduced to one share - one vote.) If the incumbent management remains in control, shareholders obtain security benefits x^I per share, while the bidder is known to generate security benefits x^B per share once she is in control.

To gain control, the bidder submits an unrestricted offer, conditional on getting at least 50 percent of the voting shares. If the firm has a dual-class structure ($n_v \neq n$), the bidder may quote different prices for voting and non-voting shares. However, if she submits a price for a certain share class, she has to buy all tendered shares from that class, conditional upon a control transfer.⁶ In the models reviewed below, discriminating between share classes is part of the optimal bidding strategy. Bidders make an offer only for voting shares because non-voting shares are of no use in gaining control and cannot be purchased at a price below the (expected) post-takeover value.

⁶The assumption that a bid has to be unrestricted for a given class is not crucial, as one can easily replicate the analysis of intra-class restricted bids by redefining n_v . For example, restricted offers for half of the voting shares amounts to $n'_v = n_v/2$. Indeed, the analysis of restricted vs. unrestricted bids is analogous to that of single-class vs. dual-class structures (Bergström et al., 1997).

To succeed, a bidder must not only win the approval of a majority of the shareholders (owning voting shares) but also outbid any competing offer. The takeover outcome (bid price) and hence the impact of the security-voting structure depends on which of the two constraints binds. Hence, we consider the cases of a single bidder and of bidding competition in turn.

2.1.1. *Single Bidder*

Grossman and Hart (1980a) and Bradley (1980) show that the market for corporate control may not function efficiently when shares are dispersedly held. We briefly review their argument as it is central to the understanding of how the security-voting structure affects the target shareholders' tendering decision.

Free-rider problem Suppose the target firm has only voting shares ($n_v = n$) held by a very large number of shareholders such that each perceives her tendering decision as negligible for the takeover outcome.⁷ When deciding to accept an offer with a (per share) price p , each shareholder compares the benefits and costs of tendering in case of success and failure. If the bid fails, the offer becomes void and the choice is irrelevant. If the offer succeeds, the shareholder gets the bid price p when tendering and the post-takeover security benefits x^B when retaining her share. Thus, for any price below the post-takeover security benefits, each shareholder prefers not to tender. As all shareholders behave in the same manner, the lowest price at which the bidder can succeed is $p = x^B$. At this price the bidder makes no profit on the shares purchased in the tender offer. If the bidder incurs some cost K in making the bid, the takeover will not take place even if it is efficient ($n(x^B - x^I) > K$). Thus, value-increasing takeovers of dispersedly held firms may fail.

The theoretical literature suggests several ways how the bidder may (partially) overcome the free-rider problem. Allowing a successful bidder to withhold part of the post-takeover firm value from the (remaining) minority shareholders enables her to make a profit (Grossman and Hart, 1980a). Suppose the successful bidder could pay other shareholders only $(1 - \phi)x^B$ of the dividends (per share) that she

⁷Strictly speaking, this requires an infinite number of shareholders ($n = \infty$). To ease the exposition, we abstract from such technical details.

collects. Such dilution of the minority shareholders' return rights drives a wedge between the post-takeover share value for the bidder and that for the minority shareholders. As a result, shareholders accept any price $p \geq (1 - \phi)x^B$ and the bidder can make a profit if $n\phi x^B > K$.

An alternative solution is the acquisition of a stake prior to the tender offer (Shleifer and Vishny, 1986b; Chowdhry and Jegadeesh, 1994). Suppose the bidder already owns $n^B < n$ of the shares. Even if she cannot dilute the minority shareholders' security benefits and consequently has to offer $p = x^B$, she may profit from a bid. This is because she appropriates the value improvement of her initial stake, $n^B(x^B - x^I)$, which may be large enough to cover the takeover cost.⁸ Notwithstanding such devices, it still holds true that the free-riding behavior precludes bidders from earning a profit on the shares purchased in the tender offer. Hence, the profit prospects of would-be acquirers remain limited and too few takeovers are undertaken, as posited by Grossman and Hart (1980a) and Bradley (1980).

While bidder gains promote takeovers, they need not ensure an efficient control allocation. In particular, dispersed shareholders may also fail to reject a value-decreasing bid (Bebchuk, 1985, 1988). Suppose that the bidder generates private benefits Z^B but overall decreases value ($nx^B + Z^B < nx^I$). If the bidder offers a price $p > x^B$, shareholders face the so-called pressure-to-tender problem: A shareholder who believes the bid to succeed prefers to sell at the price p to avoid being in the less favorable minority position with security benefits x^B . If she believes the bid to fail, the choice is again irrelevant. Thus, tendering can be individually rational for a shareholder, and the bidder can profit from such a bid provided that $Z^B > K$.

In the standard free-rider setting, the security-voting structure does not matter for the takeover outcome or shareholder wealth. This holds equally true for value-increasing and value-decreasing bids. Suppose that there are $n_v < n$ voting shares and the bidder makes an offer for these shares only. As before, she must offer $p = x^B$ to induce voting shareholders to tender, and hence she makes no profit on the voting shares. In fact, it is immaterial how many shares the bidder must buy to

⁸Other ways to overcome the free-rider problem include making the bid conditional on the squeeze-out threshold (Yarrow, 1985; Amihud et al., 2003) or debt-financing (Mueller and Panunzi, 2004).

gain control. Likewise, shareholders are indifferent between voting and non-voting shares, as they receive x^B in either case.

A prerequisite for this irrelevance result is that the (actual or perceived) firm value after the takeover is independent of the security-voting structure. This is no longer true when the firm value under the bidder is private information or depends on the bidder's final equity stake.

Asymmetric Information Even when bidders have superior information about their ability to generate security benefits, they cannot purchase shares in the tender offer at a price below the average post-takeover security benefits. Target shareholders retain their shares unless the offer price at least matches the expected post-takeover security benefits (\hat{x}^B). Thus, the free-rider problem remains under asymmetric information (Hirshleifer, 1995).

However, in the presence of asymmetric information, the security-voting structure affects the takeover outcome. As shown by At et al. (2007), this happens because the equality $p = x^B$ does not hold for each individual bidder type. Instead, the bid price is fair ($p = \hat{x}^B$), but some types pay more and others less than their respective post-takeover security benefits. More non-voting shares reduce the fraction of return rights that bidders purchase and therefore render a bid *ceteris paribus* more profitable for types who pay more than their post-takeover security benefits. Hence, some formerly frustrated types can now earn a profit and make a bid. In response, shareholders revise their beliefs about the post-takeover share value downward. This in turn lowers the bid price at which shareholders are willing to tender and makes the takeover profitable for further types.

By means of illustration, consider a target with $n_v \leq n$ voting shares and a bidder that can improve share value either to x^H or to x^L with equal probability, where $x^H > x^L > x^I$. In addition, let the bidder's private benefits increase with her security benefits, i.e., $Z^H > Z^L$. If dispersed shareholders believe a given offer p to be independent of the bidder's type (x^H or x^L), they will not tender unless p at least matches the average post-takeover security benefits $\hat{x}^B = (x^H + x^L)/2$. A pooling equilibrium (with $p = \hat{x}^B$), in which both bidder types succeed, exists only if the low type at least breaks even, $Z^L + (x^L - \hat{x}^B)n_v \geq K$. This participation constraint may

not hold, even if her private benefits are sufficient to cover the takeover cost, $Z^L \geq K$. She incurs a loss of $(x^L - \hat{x}^B)n_v$ on the purchased shares, which may well exceed her private benefits net of takeover cost. Suppose her participation constraint is violated under one share - one vote ($n_v = n$). By reducing the number of voting shares and hence the purchase loss, the pooling equilibrium can be achieved. In this case, dual-class shares promote desirable takeovers by reducing an overvalued bidder's cost of purchasing control. If, by contrast, $x^H > x^I > x^L$, one share - one vote is optimal because it deters the undesirable bid.

This simple example illustrates the two main insights of At et al. (2007). First, non-voting shares mitigate the free-rider problem when shareholders do not know the bidder's ability to generate value.⁹ Second, the security-voting structure can be chosen to discriminate among bidders, that is, to encourage all and only value-increasing bids. In At et al. (2007), this optimal structure typically deviates from one share - one vote, and the optimal number of voting shares increases with the share value under the incumbent. The result implies that low-value firms should have dual-class structures, thereby encouraging more bids.

Endogenous Private Benefits Grossman and Hart (1980a), like many subsequent takeover models, (implicitly) assume that private benefits and security benefits are independent of the bidder's final cash flow stake. To succeed, the bidder must offer a price equal to the post-takeover security benefits and she undertakes the bid if her private benefits are sufficient to cover the takeover cost ($Z^B > K$). Since the security-voting structure affects neither the security nor the private benefits, it has no impact on the bid price or the takeover incidence.

In Burkart et al. (1998), the security-voting structure matters because private benefit extraction is, by assumption, inefficient and exhibits decreasing marginal returns. When the bidder owns more cash flow rights, she internalizes more of this inefficiency and therefore extracts less private benefits, which implies higher post-takeover security benefits. Due to the free-rider behavior, the bidder does not make any profit on the tendered shares, and the private benefits constitute

⁹These results - like others in this literature - are sensitive to the assumed relationship between security and private benefits. For instance, more voting shares promote takeover activity when security benefits and private benefits are inversely related. But even in this case one share - one vote need not be optimal, as it may encourage too many value-decreasing bids.

her only profit. Since non-voting shares reduce the number of cash flow rights that a bidder has to purchase to gain control, more non-voting shares increase the private benefits that she will extract, and therefore make the bid more profitable. Thus, more private benefit extraction is a benefit rather than a cost of dual-class structures as it promotes takeovers of dispersedly held firms.

By means of illustration, consider a target with $n_v \leq n$ voting shares and a bidder who can improve the *total* value of the firm to $v^B > v^I$ per share, with v^I normalized to 0. When in control, she can extract private benefits of Z^B at the expense of reducing security benefits from v^B to $v^B - Z^B/n - \kappa$. Suppose $\kappa > 0$ so that private benefit extraction dissipates value. That is, the loss in security benefits in this case exceeds the private gains to the bidder. Consequently, there exists a $n^* < n$ such that the bidder will only extract private benefits if she has acquired no more than n^* shares in the takeover. At the same time, she must acquire a majority of the voting shares to gain control. Hence, when $n_v/2 > n^*$, there exists no takeover strategy that ensures both success and private benefits. Given that dispersed target shareholders fully appropriate the increase in security benefits, the takeover fails. In this setting, reducing the number of voting shares can therefore promote takeovers by increasing the bidder's post-takeover incentive to extract private benefits. Thus, the empirical predictions are that deviations promote takeover activity and reduce takeover premia in the absence of competition.¹⁰

Social vs. Private Optimality The above extensions of the standard single-bidder tender offer framework both find that deviations from one share - one vote mitigate the free-rider problem in dispersedly held firms. To the extent that takeovers should be promoted, deviations may thus be socially efficient. Similarly, regulations or corporate charter provisions that compel bidders to purchase all shares, like the mandatory bid rule or the so-called coattail provision¹¹, replicate the effect of the one share - one vote structure and may therefore frustrate too many value-increasing takeovers.

¹⁰Gromb (1992) derives the same predictions in a model with a finite number of shareholders, each of whom perceives herself as pivotal with some positive probability. In addition, his model predicts that voting shares should trade at a discount relative to non-voting shares, which is rarely observed (Lease et al., 1983, 1984).

¹¹The coattail provision obliges bidders to extend an offer to all share classes on the same terms.

The socially optimal structure differs in general from the privately preferred one, because target shareholders abstract from takeover costs but not from the distribution of takeover gains. This divergence is simple to illustrate: Since the free-rider condition equates the bid price to the security benefits under the bidder, shareholders want a takeover to succeed whenever $x^B \geq x^I$. From a social perspective, takeovers should not succeed unless $nx^B + Z^B - K \geq nx^I + Z^I$. Clearly, these two conditions need not coincide.

In general, shareholders may both stray too far or not far enough from one share - one vote. A privately optimal structure which abstracts from takeover costs tends to encourage too many takeovers relative to the social optimum. By contrast, a structure aimed at extracting much of the takeover gains tends to deter too many bids. Hence, whether the shareholders' preferred structure encourages too many or too few takeovers depends on which of the two effects dominates. For instance, only the first effect is present in the model of At et al. (2007), whereas in a model with endogenous private benefit extraction shareholders choose too many voting shares to increase both bid price and post-takeover security benefits.

The divergence undermines the common view that owners who take a firm public choose the socially optimal charter provisions because they are residual claimants and therefore fully internalize the costs and benefits of their decisions (Jensen and Meckling, 1976). The flaw in the argument is that initial negotiations cannot feasibly include all parties that contribute in the future to the value of the firm, such as the bidder in the present context. Hence, initial owners and shareholders agree to deviate from the efficient structure to improve the (shareholders') bargaining position vis-à-vis future bidders (Bebchuk and Zingales, 2000).

2.1.2. *Bidding Contest*

Grossman and Hart (1988) and Harris and Raviv (1988) provide the first formal analyses of the role of the security-voting structure in takeovers. In essence, they presume bidding contests, in which an outside bidder B competes against, say, the incumbent I . (The rival could equally well be another outside bidder). For simplicity, neither B nor I own an initial stake in the firm, and there are no takeover costs ($K = 0$). The security benefits generated by I and B are x^B and

x^I per share and their (total) private benefits are Z^B and Z^I . At the time of the bidding contest, these characteristics are known to the shareholders. The target firm has n outstanding shares which all carry the same security benefits but of which only n_v carry a vote.

We assume that competition is effective in the sense that the losing competitor's willingness-to-pay determines the bid price. That is, the winning bid price is larger than the security benefits generated by the winner. Otherwise, the takeover outcome would be determined by the shareholders' tendering decision, in which case the results from the single-bidder section apply. Finally, we assume that B generates a higher total value (per share) than I , i.e.,

$$x^B + (Z^B/n) \geq x^I + (Z^I/n). \quad (1)$$

Hence, the efficient outcome is that B wins the control contest, and the key question is which security-voting structures ensure this outcome.

Reservation Prices and Control Premium Given that competition is effective, the bid price exceeds by definition the winner's security benefits. Consequently, either party submits an offer for the voting shares only, and the winning bid will attract all n_v voting shares. Anticipating this, B and I are willing to offer at most $n_v x^B + Z^B$ and $n_v x^I + Z^I$ respectively. Dividing these terms by n_v yields the prices that they are prepared to pay per voting share, i.e. their reservation prices. The bidding outcome will be efficient only if B 's reservation price is higher than I 's:

$$x^B + (Z^B/n_v) \geq x^I + (Z^I/n_v). \quad (2)$$

Each party is prepared to pay a control premium (Z/n_v) in excess of her security benefits because control confers private benefits. Crucially, the control premium increases as the number of voting shares decreases, whereas the security benefits per share remain constant. Thus, dual-class structures give more weight to private benefits in determining the winner of the contest, which can in turn lead to an inefficient control allocation.

When B has larger private benefits, she wins the contest irrespective of n_v . This is trivial if B has both higher security and higher private benefits ($x^B \geq x^I$, $Z^B \geq Z^I$). It also holds when B has lower security benefits but higher private benefits ($x^B \leq x^I$, $Z^B \geq Z^I$). To see this, note that, if $Z^B \geq Z^I$, (1) implies (2) for any $n_v \leq n$. Thus, the security-voting structure is irrelevant for the outcome whenever the more efficient party has also larger private benefits. For instance, this is always the case when private benefits are positively related to security benefits.

In the reverse case ($Z^B < Z^I$), only the one share - one vote structure ($n_v = n$) always ensures the efficient outcome as (2) then coincides with the efficiency condition (1). By contrast, a dual-class structure can lead to an inefficient outcome. When n_v is sufficiently low, I may have a higher reservation price than B and win the contest, even though she creates a lower total firm value. The inefficiency arises because voting shareholders ignore the potential loss incurred by non-voting shareholders. Hence, if the non-voting shareholders could coordinate themselves, they could negotiate the efficient outcome by compensating the voting shareholders for any foregone control premium.

Social vs. Private Optimality When there is more than one bidder, one share - one vote is socially optimal as it ensures that the efficient bidder wins the contest.¹² At the same time, it need not be in the shareholders' best interest. As pointed out by Grossman and Hart (1988), dual-class structures allow shareholders to extract a higher control premium.¹³ This can easily be illustrated for the case when $x^B > x^I$ and $Z^B > Z^I$. In this constellation, B always wins and pays I 's reservation price. Since I 's reservation price, $x^I + (Z^I/n_v)$, decreases in n_v , fewer voting shares increase the price B will have to offer to outbid I . That is, deviations make the losing bidder a more aggressive competitor, thereby forcing the winning bidder to offer a higher price.

The optimal deviation from the shareholders' perspective is the one that extracts the highest possible bid price while still ensuring that the most efficient

¹²While the latter statement also holds true in the setting with inefficient private benefit extraction (Burkart et al., 1998), one share - one vote need not be socially optimal. Non-voting shares intensify competition and force the winning party to acquire more cash flow rights, thereby reducing inefficient private benefit extraction.

¹³Bergström et al. (1997) and Cornelli and Felli (2000) revisit this effect in the context of the mandatory bid rule and the sale of a bankrupt firm.

bidder wins the contest. However, when the security-voting structure is chosen before bidder characteristics are known, deviations come with the risk that the less efficient bidder wins. Even so, Sercu and Vinaimont (2006) show through simulations that one share - one vote seldom maximizes ex ante shareholder wealth, that is, shareholders often prefer dual-class shares. Thus, the model of Grossman and Hart (1988) predicts that, all else equal, widely held dual-class shares entail higher bid premia (for voting shares) in bidding contests and, if chosen in the shareholders' interest, higher total market values.¹⁴

From a normative perspective, this model suggests that one share - one vote should be mandated, as it is socially optimal but unlikely to be chosen by shareholders. The social optimality of one share - one vote conflicts with the result obtained in the case of a single bidder. We will discuss this discrepancy at the end of this section.

Toeholds and Bidding Competition Pre-takeover stakes do not alter the outcome of the bidding competition under full information. Suppose B bids p^B and consider the optimal response of I who owns a fraction $\alpha^i < 0.5$ of the voting shares. She prefers to counterbid rather than to sell her shares at this price if $n_v x^I - (1 - \alpha^I)n_v p^B + Z^I \geq \alpha^I n_v p^B$, or equivalently, $x^I + (Z^I/n_v) \geq p^B$. The left-hand side of the latter inequality is precisely the amount I is willing to pay when owning no toehold. That is, the cost reduction of not having to buy her own toehold is offset by the forgone revenues (opportunity cost) of not selling her toehold to B .

Since toeholds affect neither bidder's reservation price and the bidder with the higher reservation price wins, toeholds do not affect the control allocation. Consequently, one share - one vote continues to be socially optimal in the presence of toeholds. It ensures that the efficient bidder and the bidder with the highest reservation price coincide.

The actual outcome, in terms of the winning price, depends on the extensive form game, notably whether each bidder makes a single bid or can revise her bid. If bid revisions are not precluded, the eventual bid price extracts the winning bid-

¹⁴To the best of our knowledge, there is no systematic study of takeover premia in widely held dual-class firms.

der's entire surplus. Anticipating that the higher valuation bidder will counterbid until her reservation price is reached, the lower valuation bidder has an incentive to bid more than her reservation price to raise the price at which she sells her toehold. As a result, the entire takeover gains accrue to the tendering shareholders who therefore have no reason to deviate from one share - one vote. The surplus extraction is achieved by the overbidding of the losing bidder with a toehold.¹⁵ This suggests that firms with minority blockowners need not necessarily resort to dual-class structures to drive up takeover premia.

The theoretical analysis of tender offers shows that target shareholders prefer inefficient structures. Thus, there is scope for regulation. Unfortunately, the socially optimal structure in case of bidding competition differs from the one in case of a single bidder. This precludes a clear-cut policy recommendation, unless one case were empirically much more relevant than the other.

However, while proponents of one share - one vote (implicitly) look to the competition case, the single-bidder setting seems empirically equally important. For instance, Betton and Eckbo (2000) report that, among all US tender offer contests between 1971 and 1990, 62 percent involved only one bid. This observation alone does not imply that shareholder approval was the binding constraint in all these cases. Instead, the single bid may have been set to preempt potential rivals. Stronger support for the empirical relevance of the single-bidder setting can be found in the fact that 22 percent of these bids failed. Furthermore, in 41 percent of all multi-bid contests, all bids were made by the same bidder, and only very few of these bid revisions were, according to the authors, related to rumored competition.

In conclusion, the claim that mandating one share - one vote – or any other structure – will improve the control allocation of widely held firms must be qualified. Unless policy-makers can observe the takeover environment of a given firm, regulatory intervention could even do more harm than good.

¹⁵When the reservation prices are privately observed, the incentives to overbid may result in an inefficient control allocation (Burkart, 1995). The security-voting structure remains irrelevant, as changes in the fraction of voting shares simply scale each bidder's maximization problem, leaving the optimal bids unaffected.

2.2. NEGOTIATED CONTROL TRANSFERS

The preceding analysis of the tender offer process presumes an ownership structure where (at least) the majority of votes is dispersedly held. By contrast, many dual-class firms have a controlling minority shareholder, who is pivotal for the takeover outcome. That is, a control transfer can only take place with her consent and is therefore best viewed as the outcome of a bilateral negotiation between her and the potential acquirer. Unlike in the case of widely held firms, existing theory unequivocally suggests that one share - one vote is the (constrained) optimal security-voting structure. As we show below, the logic behind this result is the same as in the case of bidding competition.

Drawing on Kahan (1993) and Bebchuk (1994), we consider a firm run by a controlling shareholder I who owns a fraction $\alpha > 0.5$ of the voting shares. The remaining $(1 - \alpha)n_v$ voting shares and the $(n - n_v)$ non-voting shares are dispersed among small shareholders. The controlling shareholder is approached by an outside bidder B who would like to take control. We assume that both parties' know each others' reservation prices, that is, the parameters x^B , x^I , Z^B and Z^I are known. Hence, I and B will agree on a control transfers if it is mutually beneficial. This situation is very similar to a bidding contest between B and I , and the party that values control more highly will eventually gain (keep) it.

A control transfer is efficient if $x^B + (Z^B/n) \geq x^I + (Z^I/n)$, that is, if condition (1) holds. The value of the controlling block to I is $\alpha n_v x^I + Z^I$, while B values the block with $\alpha n_v x^B + Z^B$. Abstracting from takeover costs, the two parties find it mutually beneficial to trade if B 's reservation price (per block share) is higher than that of I :

$$x^B + (Z^B/\alpha n_v) \geq x^I + (Z^I/\alpha n_v). \quad (3)$$

How controlling shareholder and bidder share this surplus determines the block price. Since the subsequent arguments do not depend on a specific block price, we abstract from its determination.¹⁶ Once in control, the bidder has the option

¹⁶In the theoretical literature, the block price is typically the outcome of a bargaining game between incumbent and bidder that depends on the parties' outside options (see e.g., Burkart et al., 2000).

to purchase the remaining voting and non-voting shares. Due to the free-rider behavior, the small shareholders are not willing to tender their share for less than the security benefits x^B . Hence, the bidder would not make a profit and abstains from purchasing the remaining shares.

Condition (3) is almost identical to condition (2), the difference being that the control sale involves only the fraction α of voting shares. But this difference matters. While one share - one vote ensured an efficient takeover outcome in bidding contests, this is no longer true in a control sale. Even though the corporate charter endows all shares with a vote, the presence of a control block turns all minority shares into de facto non-voting shares. As a result, (3) and (1) diverge even for $n = n_v$, unless $\alpha = 1$.

Inefficient Control Allocation Controlling blocks may ultimately not be owned by the more efficient party for the same reason as dual-class share structures can lead to an inefficient bidding outcome. Suppose that B generates more value but enjoys relatively small private benefits. If α is sufficiently small, B 's reservation price may be lower than that of I . The reason is that I attaches a high control value to each share when she owns few. Consequently, she demands a price that B may not be willing to pay, and a value-increasing control transfer may fail.

As in the competition case, the roles can be reversed. Suppose that B generates less value but enjoys larger private benefits. Now B 's reservation price may exceed I 's if α is sufficiently small. Thus, a value-decreasing control transfer may occur because B is willing to pay I a very high control premium.

These inefficiencies arise because I and B do not internalize the effect of the control transfer on the minority shareholders, just as the voting shareholders ignored the welfare of the non-voting shareholders in the bidding contest. Again, the inefficiencies could be avoided if the minority shareholders were able to coordinate and compensate I or B for taking the efficient decision.

As in the competition case, an inefficient outcome is more likely to materialize when the fraction of voting shares is smaller. Increasing the number of shares that the controlling shareholder must hold reduces the control premium per share and thus the potential divergence between the ranking of reservation prices and the

ranking of total firm values. For given α , one share - one vote thus leads to the second-best control allocation, minimizing both the failure of value-increasing bids and the success of value-decreasing bids.

Social vs. Private Optimality Zingales (1995a) shows that floating some shares can increase the total proceeds from selling a firm. By selling shares to dispersed investors who have no choice but to “free-ride” in the subsequent control sale, the owner can extract part of the surplus, without having to bargain over it.¹⁷ Dual-class shares allow to float more shares (cash flow rights), while maintaining control. Moreover, the control premium (per share) increases, as fewer shares are involved in the control sale. Thus, dual-class share structures help to extract more surplus from the bidder, for essentially the same reason as in the competition case. The owner may therefore reduce the number of voting shares even if this increases the risk of an inefficient control allocation (Bebchuk and Zingales, 2000). Thus, a mandatory one share - one vote rule can, as in the case of bidding competition, improve overall efficiency.

By contrast, mandatory bid rules and coattail provisions, which force the bidder to extend the same offer to all shareholders, have an ambiguous effect on the efficiency of control sales (Kahan, 1993; Bebchuk, 1994). As the controlling shareholder does not sell unless she is paid a control premium, these provisions force the bidder to pay that premium on all shares. That is, she has to buy every outstanding share at no less than $x^I + (Z^I/\alpha n_v)$. Hence, a bid succeeds only if

$$x^B + (Z^B/n) \geq x^I + (Z^I/\alpha n_v). \quad (4)$$

The redistribution from bidder to small shareholders makes it more expensive to acquire control, thereby reducing takeover activity and entrenching existing control structures. This is a mixed blessing. On the one hand, it prevents all value-decreasing bids. To see this, note that all bidders that violate (1) also violate (4) by implication. On the other hand, the redistribution deters more value-increasing bids. This follows from the fact that (4) is stricter than (3). This ambivalent

¹⁷If the market for controlling blocks would be equally competitive as the market for cash flow rights, the two-stage sale procedure would not increase the owner’s total proceeds.

deterrence effect is more pronounced for dual-class structures (smaller n_v) because the control premium (per share) tends to be higher.

Based on the above results, one would expect that dual-class structures in firms with controlling shareholders reduce takeover activity but increase takeover premia (conditional on a bid). Furthermore, privately optimal structures should increase total market value, and voting shares should trade at a premium. Consistent with these predictions, Zingales (1995b) and Smith and Amoaku-Adu (1995) find that relative price differences are driven by differential takeover bids for voting and non-voting shares. Mandatory bid rules and coattail provisions make it more expensive to acquire a firm but eradicate differences in takeover gains between voting and non-voting shareholders. Hence, they should increase total takeover premia (conditional on a bid) but decrease voting premia and takeover activity. Consistent with this hypothesis, voting premia have drastically fallen on the Toronto Stock Exchange after the introduction of the coattail provision (Allaire, 2006). Overall, it seems fair to conclude that a mandatory one share - one vote rule would improve the control allocation in firms with controlling shareholders. As discussed earlier, this does not hold for widely held firms.

3. Blockholder Incentives and Security-Voting Structure

Control transfer models typically take the firm's assets as given and examine how the distribution of cash flow and voting rights affects the allocation of control over these assets. A complementary strand of the literature takes the identity of the party in control as given and explores how its decisions are influenced by the distribution of cash flow and voting rights. A firm's ownership and control structure influences significant corporate decisions such as investment or dividend policies through two distinct channels. First, it determines the extent to which existing shareholders actively participate in corporate decision-making as well as the incentives and the (voting) power of those entrusted with running the firm. Second, it affects the extent to which insiders can be challenged by an outside party, which in turn has repercussions for a broad range of corporate decisions. We review both channels in this section.

Many firms are characterized by the separation of ownership and control (Berle and Means, 1933): Shareholders delegate decision-making authority to managers to run the firm on their behalf. As a result, the manager may choose actions that increase her private benefits at the expense of the shareholders' security benefits. While the shareholders can limit divergences from their interest by providing appropriate incentives or by monitoring the manager's actions, doing so requires the right to set rules or to correct managerial decisions whenever they disagree and want to take action. This formal authority is embodied in the voting rights.

Yet, formal authority confers real authority, that is, effective control over decisions only if it is duly exercised (Aghion and Tirole, 1997). Shareholders can do so only if they possess the relevant information. This typically does not apply to small shareholders, who lack the incentives to collect information and oversee managers. Thus, the allocation of votes among dispersed shareholders is immaterial during the normal course of business, though, as discussed in the previous section, it matters for the takeover outcome.

By contrast, an investor who owns a substantial fraction of cash flow rights has the incentives to incur the monitoring costs to constrain the manager's discretion, thereby mitigating the agency problem. Indeed, concentrated ownership has been advocated as a simple governance mechanism to promote value maximization by firms through monitoring or through the alignment of interests. Throughout the remainder of this section, we examine how the security-voting structure affects the effectiveness of blockownership as a governance mechanism. We find that, outside control transfers, dual-class structures need not be dominated in firms with controlling shareholders, because one share - one vote can both mitigate and exacerbate agency conflicts.

3.1. OUTSIDE BLOCKHOLDER AND MONITORING

From the other shareholders' perspective, the presence of an active blockholder may or may not be beneficial (Shleifer and Vishny, 1997). On the one hand, the outside blockholder can use her influence to increase security benefits, thereby acting in the interest of all shareholders. On the other hand, she may choose to collude with the manager to divert corporate resources and share the private

benefits.¹⁸ In this case, she becomes de facto an inside blockholder whose role we examine subsequently. Here we assume that the blockholder is an outsider whose interests are perfectly aligned with those of the other shareholders.

Models of shareholder monitoring (e.g., Admati et al., 1994) focus on the role of cash flow rights and argue that monitoring incentives increase with the size of the stake. At the same time, they typically abstract from the role of voting rights and assume that the blockholder has the formal power to correct managerial decisions.¹⁹ This assumption is a simplification which fits the logic of the framework: Given that shareholders have congruent interests, small shareholders can only gain from letting the blockholder monitor and interfere on their behalf.

There are, however, various reasons why the blockholder's degree of influence depends on both cash flow rights and votes. To push through a proposal, a blockholder may need to be backed by sufficiently many votes, say a simple majority, forcing her to mobilize support if she owns too few votes herself (Bennedsen and Nielsen, 2006). Similarly, owning more voting rights can improve the odds of a favorable outcome in a shareholder vote when small shareholders vote erratically or nurture a status quo bias in favor of management (Rydqvist, 1992).

Given that votes have a distinct impact on the blockholder's ability to challenge managerial decisions, leveraging voting power is advantageous if ownership of large equity stakes entails (opportunity) costs. For instance, holding a substantial fraction of one firm's cash flow rights is costly for a risk-averse investor (Admati et al., 1994; Bodnaruk et al., 2006). To reduce firm-specific risk, the blockholder may even make the firm engage in value-reducing hedging activities or forgo risky but profitable investment projects (Hu, 1990). Larger stakes also reduce liquidity in the secondary market, thereby making it more difficult to sell shares when in sudden need of cash. Finally, investors may simply not be sufficiently wealthy to purchase substantial blocks in large firms.

Under the one share - one vote structure, these costs do not only constrain

¹⁸Both sides of ownership concentration are well documented in numerous empirical studies, but the evidence is inconclusive on whether the positive or negative effects dominate (Becht et al., 2003; Berglöf and Burkart, 2003.)

¹⁹A notable exception is Shleifer and Vishny (1986b) where an incumbent blockholder after collecting information must acquire the majority of votes either through a takeover or a proxy contest to implement the intended changes.

the size of the equity stake but also the voting power. To the extent that more monitoring is desirable, it is optimal to let the blockholder own more votes than cash flow rights. There is evidence that family owners, who often have leveraged voting power, add value as monitors in firms managed by non-family CEOs (Villalonga and Amit, 2006). A dual-class structure may also be desirable when too much monitoring frustrates valuable managerial initiative (Burkart et al., 1997). In that case, a wedge between votes and cash flow rights may simultaneously reduce the cost of interference and the level of monitoring.

A Simple Illustration Consider a managerial firm with a single outside blockholder L , who holds a fraction $s \in [0, 1]$ of the voting rights and a fraction $d \in [0, 1]$ of the cash flow rights. Being risk-averse, L incurs a cost $k(d)$ of holding a non-diversified portfolio with $k_d > 0$ and $k_{dd} > 0$.²⁰ The manager generates a total value of $V > 0$, and can divert up to an amount $Z < V$ (without having to fear legal prosecution), unless L interferes.

To reverse the managerial decision L has to incur some fixed cost of interference, \underline{c} . In addition, she needs to mobilize the support of other shareholders, unless she holds a majority of the votes. More specifically, the total cost of reversing a decision is $c(s)$ with $c_s < 0$ for all $s < 0.5$ and $c(s) = \underline{c}$ for all $s \geq 0.5$. That is, interference is cheaper when L owns more votes, and once she holds a majority of the votes she only bears the fixed cost \underline{c} . Furthermore, $2\underline{c} < Z$, and the diverted amount is fully recovered if L interferes.

Since the manager never loses from diversion, her (weakly) dominant strategy is to divert the amount Z . For given values of s and d , L thus interferes when her gain exceeds the cost of interference, i.e., $dZ \geq c(s)$. Clearly, she is more likely to reverse managerial private benefit extraction when she receives a larger share d of the gains from interference (alignment effect), or when she owns more votes s , thereby lowering her cost of interference (power effect).

Leveraging L 's voting power simultaneously reduces interference and underdiversification costs. Thus, the optimal structure allocates to L a majority of the

²⁰Throughout the illustrations in this section, we use the following short-hand notation. If f is a function, f_x denotes the first-order derivative of that function with respect to x , f_{xx} the second-order derivative with respect to x , and f_{xy} the cross-derivative with respect to x and y .

votes ($s^* \geq 0.5$) to maximize her ability to monitor and an equity stake sufficient to preserve her incentive to interfere, i.e., $d^* = \underline{c}/Z$. Since $2\underline{c} < Z$ by assumption, $d^* < 0.5$. That is, it is cost-efficient for L to own fewer cash flow rights than voting rights.

Under one share - one vote ($s = d$), a reduction in the interference cost necessarily goes together with higher costs of underdiversification, and vice versa. As a result, L either diversifies her wealth less or monitors the manager less.

3.2. INSIDE BLOCKHOLDER AND EXTRACTION

As small shareholders abstain from monitoring, an inside blockholder or owner-manager in an otherwise dispersedly held firm enjoys considerable autonomy. Jensen and Meckling (1976) show that the insider and the small shareholders have diverging interests. Assuming that the value of the firm depends on costly managerial effort, the insider underprovides such effort relative to the first-best level. She bears all the cost but receives only part of the returns (security benefits). A larger equity stake increases her incentives to exert effort, thereby aligning her interests (more) with those of the other shareholders. Crucial for this result is the assumption of decreasing marginal returns to effort, which is to say that it becomes increasingly difficult to create more value. Unless the firm is fully owned by the insider, the first-best effort level is not chosen. The underprovision of effort constitutes (one manifestation of) the agency cost of outside finance.

The effort provision problem can be rephrased as a problem of private benefit extraction, where the insider can convert security benefits into private benefits but in the process dissipates some of the value (Burkart et al., 1998). In this setting, a larger equity stake forces the insider to internalize a greater part of the loss, thereby inducing her to extract less private benefits. The crucial assumption is that the marginal deadweight loss increases in the level of extraction, making it increasingly inefficient to extract more private benefits.²¹ Again, outside finance creates agency costs, as some inefficient extraction always occurs unless the insider owns the whole firm.

²¹Otherwise, the inside blockholder extracts either nothing or all she can without being legally prosecuted. The former (latter) obtains if her equity stake is larger (smaller) than the constant marginal deadweight loss.

The alignment effect operates solely through the insider's cash flow rights. As in the case of the outside blockholder, the vote allocation does not matter as long as the remaining shareholders remain passive. A role for votes emerges when corporate decisions that benefit primarily the insider require shareholder approval. Bennedsen and Nielsen (2006) suggest that the inside blockholder may need to bribe a sufficient number of small shareholders to get support for her actions, thereby effectively having to share some of her private benefits. As a consequence, her incentive to divert resources may decrease in the amount of support she has to procure or, conversely, increase in her voting power.²²

A Simple Illustration Consider a firm of value V that has a single inside blockholder I , who holds a fraction $s \in [0, 1]$ of the voting rights and a fraction $d \in [0, 1]$ of the cash flow rights. As before, there is some action that requires majority support, forcing I to persuade other shareholders when she is short of votes. In addition, I can and must bribe them to vote for an action that exclusively benefits herself.

More specifically, I seeks shareholder approval for an action that is necessary to extract private benefits. To gain shareholder approval, I needs to "buy" $\max\{0, 0.5 - s\}$ votes by giving up a share $1 - \alpha(s)$ of the private benefits to the supporting small shareholders. Thus, $\alpha(s) \in [0, 1]$ denotes the fraction of the private benefits that I retains, where $\alpha_s > 0$ for $s < 0.5$ and $\alpha(s) = 1$ for $s \geq 0.5$. Accordingly, I keeps a larger fraction of the private benefits to herself when she owns more votes, because it requires a smaller bribe to ensure outside support. When she owns the majority of votes, she keeps the entire private benefits, as no bribes are needed.

If I gains support, she can choose an amount $z \in [0, Z]$ that she wants to divert, where $Z < V$. Following the previous discussion, we assume that private benefit extraction is inefficient. More specifically, the diverted resources are transformed into private benefits of value $\phi(z)$, where $\phi_z > 0$, $\phi_{zz} < 0$, $\phi_z(0) = 1$ and $\phi_z(Z) = 0$.

Given I has support for the action, she chooses z to maximize $\alpha(s)\phi(z) + d(V -$

²²Similar arguments have been put forward in the context of multiple blockholders (Bennedsen and Wolfenzon, 2000; Nagar et al., 2004).

z). Because $\phi(z)$ is concave in z , the solution is given by the first-order condition

$$\phi_z(z) = d/\alpha(s). \quad (5)$$

Due to the inefficient extraction technology, I 's preferred extraction level decreases in her share of cash flow rights (alignment effect), while it increases in her share of voting rights as long as $s < 0.5$ (power effect). The latter effect stems from the fact that she must buy fewer votes, thereby retaining a larger share $\alpha(s)$ of the private benefits.

Thus, dual-class shares, notably controlling minority shareholder structures, exacerbate agency conflicts among shareholders: They simultaneously increase the incentives and the ability of the inside blockholder to extract private benefits. By contrast, one share - one vote either strengthens the alignment effect if I holds a large(er) equity stake or weakens her ability to extract private benefits if she owns a small(er) block. In either case, the level of extraction decreases.

This and the previous section together imply that leveraging a blockholder's voting power entails a trade-off: It makes her a more effective monitor of management, but it also enables her to extract more private benefits (Bennedsen and Nielsen, 2006). In the above examples, an increase in s reduces the cost $c(s)$ of overruling the management but also increases the share $\alpha(s)$ of private benefits accruing to the blockholder. Hence, the effect of disproportionate voting power is indeterminate.

Insiders, whether managers or inside blockholders, are constrained in their behavior not only by existing shareholders but also by the ease with which outsiders can gain control. The mere possibility of a takeover has, for example, a disciplinary effect if the fear of being ousted induces insiders to abstain from self-serving actions (Grossman and Hart, 1980b; Scharfstein, 1988).

3.3. ALIGNMENT AND CONTROL CONTESTABILITY

Control contestability and partial ownership concentration are alternative mechanisms to mitigate the conflict between insiders and (outside) shareholders.²³ It thus seems ideal to discipline insiders by using both mechanisms. But to the extent that votes are tied to cash flow rights, the two are inversely related: More shares endow the insider with more cash flow rights (more alignment) but also with more votes (less contestability). For instance, under the one share - one vote structure, every increase in cash flow rights is matched by a proportional increase in voting rights.²⁴

Separating votes from cash flow rights changes the interplay between the two mechanisms. If the insider holds more votes than cash flow rights, she is well-protected from a takeover while being poorly aligned with the other shareholders (Bebchuk et al., 2000; Masulis et al., 2007). This simultaneously undermines both mechanisms, thereby increasing the insider's incentives to engage in self-dealings.²⁵ As the subsequent example illustrates, the security-voting structure can in principle also be used to achieve the opposite, that is, to strengthen the two mechanisms.

A Simple Illustration Consider the previous example with a firm of value V and a single inside blockholder I , who holds a fraction $s \in [0, 1]$ of the voting rights and a fraction $d \in [0, 1]$ of the cash flow rights. As before, I can divert an amount $z \in [0, Z]$ of corporate resources and transform them into private benefits of value $\phi(z)$, where $\phi_z > 0$, $\phi_{zz} < 0$, $\phi_z(0) = 1$ and $\phi_z(Z) = 0$. We replace the previously required shareholder approval with the possibility of a takeover, in

²³The use of incentive pay is another means to alleviate the conflict of interests. Indeed, stock-based performance schemes and ownership stakes provide very similar incentives (e.g., Gordon, 1940; Jensen and Murphy, 1990). However, insiders may have considerable influence over the design of their compensation and use it as a means to extract private benefits rather than to align interests. This argument has been made both in the context of inside blockholders (Cheung et al., 2005) and professional managers (Bebchuk and Fried, 2003, 2004). Overall, the empirical evidence nonetheless suggests that ownership concentration coincides with more effective compensation schemes (e.g., Core et al., 1999; Dyl, 1988; Gomez-Mejia et al., 1987; Hartzell and Starks, 2003; Santerre and Neun, 1986; Sautner and Weber, 2006; Tosi and Gomez-Mejia, 1989).

²⁴The two conflicting effects can imply a non-monotonic relationship between inside ownership and share value (e.g., Morck et al., 1988). For instance, the alignment effect may initially dominate, but above some level the entrenchment effect may prevail (e.g., Stulz, 1988). The shape of the relationship is an empirical question about which there is yet no consensus in the literature (Adams and Ferreira, 2007).

²⁵As discussed in section 2.1.1., one share - one vote need not necessarily maximize control contestability in widely held firms.

which case I sells her block at an exogenously given price P , and foregoes her entire private benefits. The probability of a takeover depends on I 's voting power s , and is denoted by $1 - \theta(s)$ with $\theta(s) \in [0, 1]$, $\theta_s > 0$ for $s < 0.5$, and $\theta(s) = 1$ for $s \geq 0.5$. That is, a takeover is less likely if I owns more votes, and infeasible when I owns a majority of the votes.

For given s and d , I 's optimal extraction decision maximizes $\theta(s) [\phi(z) + d(V - z)] + [1 - \theta(s)]P$. The first term reflects her payoff from remaining in control, whereas the second term represents her proceeds in case of a takeover. As $\phi(z)$ is concave in z , the solution is given by the first-order condition

$$\phi_z(z) = d/\theta(s). \tag{6}$$

This condition coincides with condition (5), except that $\theta(s)$ replaces $\alpha(s)$. As before, extraction decreases in I 's share of cash flow rights (alignment effect), while it increases in her voting power, as long as $s < 0.5$ (entrenchment effect). When I owns more votes, the takeover becomes less likely, thereby increasing the probability $\theta(s)$ that she actually benefits from the extraction.

As the level of extraction increases in the difference $(s - d)$, one share - one vote indeed protects minority shareholders. A zero wedge entails less private benefit extraction which in turn translates into higher security benefits. However, this is not the efficient solution. Even better is to let the difference $(s - d)$ assume a negative value. That is, extraction is lowest under an insider or manager who owns a large block of only non-voting shares, thereby being strongly aligned and easily contestable.

In practice, insiders who hold a substantial financial interest but no (or less) votes seem rare, if not inexistent. Instead, firms are either owned and run by large owners who are largely insulated from hostile takeovers, or are widely held and run by contestable managers who are much less aligned. These patterns arise because abstaining from diversification and holding an illiquid block is costly. Hence, a wealthy investor is willing to hold a block only if she gets additional benefits, whether from monitoring or extraction. In either case, she requires influence and hence votes. In the absence of such benefits, she prefers to diversify her wealth.

Given these alternatives, the relevant question seems to be whether blockownership or control contestability is the more effective governance mechanism. Neither mechanism is without flaws. On the one hand, blockownership leads to conflicts among shareholders, as already pointed out. Control contestability, on the other hand, may aggravate rather than mitigate managerial agency problems.

3.4. BENEFITS OF ENTRENCHMENT

The preceding section emphasizes the disciplinary effect of the takeover threat. However, control contestability comes with costs as well as benefits, and its overall impact is much debated in the literature. Actual takeovers can be a manifestation as much as a cure of agency problems. For instance, acquisitions may be driven by managerial overconfidence (Roll, 1986; Malmendier and Tate, 2004) or empire-building motives (Jensen, 1986). If so, takeovers may destroy or redistribute rather than create value.

Furthermore, the mere threat of a takeover may distort insiders' behavior rather than induce them to pursue profit-maximizing actions. First, if takeovers are undertaken for reasons other than reversing inefficient or self-serving behavior, acting in the shareholders' best interest need not be an effective protection against a takeover.²⁶ Second, insiders who are exposed to a substantial takeover threat may waste effort on measures to protect themselves. Apart from poison pills, stock repurchases or litigation to fend off hostile takeovers, they may pursue more opaque strategies, like undertaking skill-specific investments to become less easily replaceable (Shleifer and Vishny, 1989) or awarding workers generous long-term contracts, thereby making the target less attractive (Pagano and Volpin, 2005).

Third, the takeover threat may discourage investments in firm-specific human capital that may become redundant after a control change (Knoeber, 1986; Ippolito, 2006). More generally, if takeovers imply some form of contract renegotiation ("breach of trust"), the firm's stakeholders are reluctant to tie their fate to the firm and prefer to develop generic skills that increase their value in the external labor market (Shleifer and Summers, 1988).

²⁶Indeed, the empirical evidence lends only limited support to the notion that takeovers are directed at poorly performing firms (Burkart and Panunzi, 2006).

Finally, the takeover pressure may lead to managerial myopia. That is, insiders may pursue investment strategies that favor short-term earnings over long-term profitability to avoid being undervalued and taken over (Stein, 1988; Chemmanur and Jiao, 2006). For instance, the takeover threat may hinder firms from pursuing long-term strategies, such as investments in R&D.²⁷

The common theme of the above arguments is that some protection from takeovers may preserve or promote insiders' incentives to increase firm value. Hence, deviations that entrench insiders are not necessarily inefficient or detrimental to minority shareholders, as the following example illustrates.

A Simple Illustration Consider a firm that is managed by an insider I who, for simplicity, owns no cash flow rights and only enjoys private benefits. Total firm value $V(e)$ is now an increasing function of I 's effort e , and the marginal returns to effort are decreasing ($V_e > 0$ and $V_{ee} < 0$). If I remains in control, she can extract a fraction ϕ of the total firm value as private benefits. In contrast to before, private benefit extraction does not dissipate any value. Thus, I generates security benefits $X^I = (1 - \phi)V(e)$ and private benefits of $Z^I = \phi V(e)$.²⁸

If the firm is taken over, I is ousted and loses all her private benefits. The takeover probability $\theta(s, V)$ decreases (weakly) in I 's voting power s and total firm value $V(e)$ ($\theta_s \leq 0$ and $\theta_V \leq 0$).

Given the above assumptions, I chooses effort e to maximize her expected payoff

$$\Pi = (1 - \theta) Z^I - e = (1 - \theta) \phi V(e) - e,$$

and the first-order condition is given by

$$(1 - \theta) \phi V_e - \theta_V V \phi V_e = 1.$$

The left-hand side comprises the marginal returns to effort. The first term captures

²⁷The evidence on short-termism due to the takeover threat is scarce and divided. Meulbroek et al. (1990) find a decrease in R&D expenditures following the adoption of takeover defences, while Pugh et al. (1992) present contrary results.

²⁸This simplifies the argument but ignores that I may extract more when she owns less cash flow rights. Since the example already abstracts from the alignment effect, setting I 's equity stake equal to zero ($d = 0$) imposes no meaningful further restriction. While the absence of an alignment effect biases the result in favor of deviations from one share - one vote, it highlights the trade-off between the disciplinary and the initiative effect of the takeover threat.

the idea that I exerts more effort when she is more likely to retain control, i.e., when $(1 - \theta)$ is large. We refer to this as the initiative effect. The second term measures how effective effort is as a takeover deterrent or, more precisely, how much this effect is worth to I . We refer to this as the disciplinary effect.

For the further analysis, it proves convenient to rewrite the first-order condition as

$$1 - (\theta + \theta_V V) = 1/\phi V_e. \quad (7)$$

As the right-hand side increases in effort due to $V_{ee} < 0$, the effort level that satisfies this equation must increase when the left-hand side is larger.

As a benchmark, consider first the case in which I holds a majority of the votes ($s \geq 0.5$) and is therefore immune to the takeover threat. In this case, the takeover probability is zero ($\theta = \theta_V = 0$), and the first-order condition simplifies to $\phi V_e = 1$. Whether a different vote allocation that allows for a takeover ($s < 0.5$) induces more effort depends on the sign of $(\theta + \theta_V V)$. If $\theta > |\theta_V V|$, a controlling insider exerts more effort than an insider who is exposed to the takeover threat. That is, the initiative effect dominates the disciplinary effect, and minimizing control contestability provides the strongest incentives to create value. By contrast, if $\theta < |\theta_V V|$ the takeover threat disciplines the insider, i.e., induces her to work harder.

To analyze the question further, we assume contestability ($s < 0.5$) and take the partial derivative of the left-hand side of (7) with respect to s . This yields

$$\frac{\partial}{\partial s} (1 - \theta - \theta_V V) = -(\theta_s + \theta_{V_s} V).$$

When this expression is positive, i.e., $(\theta_s + \theta_{V_s} V)$ is negative, the left-hand side of (7) increases in s . This in turn implies that more voting power induces the insider to exert more effort.

Simple inspection reveals the two aforementioned effects. The first term θ_s is always negative and captures that the insider's initiative increases in s as it becomes more likely that she retains control. The second term $\theta_{V_s} V$ is also negative if $\theta_{V_s} < 0$. The latter condition implies that the extent to which a further increase

in firm value reduces the takeover probability increases in s . If this holds, more voting power also provides stronger incentives to fend off a takeover by increasing firm value. As a result, less insider votes unambiguously reduce effort. By contrast, if $\theta_{V_s} > 0$, frustrating takeovers by increasing the firm value becomes more effective when the insider has less voting power. In this case, a genuine trade-off between initiative and discipline emerges.

Active large shareholders are an important governance mechanism to mitigate managerial agency problems. The preceding analysis shows that dual-class structures empower blockholders, thereby reinforcing both costs and benefits of this governance mechanism. On the one hand, leveraging voting power makes the blockholder a more effective monitor. On the other hand, she may use that power to take self-serving actions at the expense of the minority shareholders. Similarly, leveraged voting power offers protection from the takeover threat, which can align but also distort blockholder incentives.

These effects are weakened under one share - one vote, as is the position of the blockholder. While this mitigates the conflict among shareholders, it also strengthens the position of managers, thereby aggravating the shareholder-manager conflict. Whether entrenched owners or contestable managers are more prone to maximize firm value is debatable (Bolton and von Thadden, 1998). Managers are more exposed to hostile takeovers, but typically have a much smaller stake in the firm.²⁹ This trade-off is central not only for the one share - one vote debate but for corporate governance in general (Becht et al., 2003).

The ambiguity is reflected in empirical studies which examine the relationship between deviations from one share - one vote and firm value. Although some studies find a negative relationship (e.g., Claessens et al., 2002; Cronqvist and Nilsson, 2003), the overall evidence is inconclusive. In addition, endogeneity issues preclude clear statements about causality, and there exists virtually no evidence that deviations reduce total firm value, that is, the sum of security benefits and private benefits (Adams and Ferreira, 2007).

²⁹In spite of stock option plans and the like, compensation packages for top executives typically dwarf in comparison to the equity stakes of most large owners. In fact, controlling shareholders often own non-voting shares in addition to their control stake (Bergström and Rydqvist, 1990), which is difficult to reconcile with the view that dual-class shares are purely a vehicle to extract maximum private benefits at the expense of minority shareholders.

The imminent policy conclusion is that mandating one share - one vote entails costs and benefits: It protects small shareholders against private benefit extraction by large shareholders, but leaves managers with more discretion and hence the ability to extract more private benefits. Such a policy must therefore be based on the belief that other governance mechanisms discipline managers sufficiently well. However, concentrated ownership structures tend to be prevalent in countries in which other governance mechanisms are weaker.³⁰ This suggests that improvements in the general corporate governance environment should precede any intervention directly aimed at discouraging blockownership (Berglöf and Burkart, 2003).

4. Regulating Security-Voting Structure

Restrictions on the security-voting structure reduce the types of securities that entrepreneurs can offer to investors. For instance, one share - one vote precludes a disproportional distribution of cash flow and voting rights, as used in a controlling minority structure. Such restrictions may ultimately affect entrepreneurial choices, e.g., whether and how to raise capital or to maintain control. In fact, the arguments reviewed in this section suggest that mandating one share - one vote can have a distortionary effect on firms' financing and investment decisions, or induces firms to resort to other means of separating ownership and control.

The common approach to analyze such situations is to adopt the perspective of a founder who chooses the initial ownership and control structure anticipating its effects on future corporate decisions. Investors, having equal foresight, pay a fair price for the shares that they buy. The subsequent discussion is based on this framework.

4.1. CHOICE OF OWNERSHIP

Tying votes to cash flow rights increases the amount of equity capital required for owning a given share of voting rights. As a result, a corporate insider must retain more cash flow rights to control a firm, or conversely, must relinquish more voting power when selling cash flow rights to outsiders. Paradoxically, this means that

³⁰This does not apply to countries where shareholder rights are relatively restricted such that votes confer little control over board and top management. In this case, owning a large block yields costs but little economic benefits.

one share - one vote can both discourage and promote ownership concentration. Either case can have undesirable consequences.

In the first case, large owners give up control because the (opportunity) costs of concentrating their wealth in a single firm are too high. Relative to a dual-class structure, one share - one vote increases the cost of holding a controlling position. Consequently, a controlling minority blockholder may respond to the introduction of a one share - one vote rule by reducing her voting power rather than by acquiring more cash flow rights. Relinquishing power may be self-reinforcing when it reduces the blockholder's (expected) private benefits and hence makes it less worthwhile to hold the block altogether.³¹ As already discussed, the resulting ownership deconcentration, while mitigating the conflict among shareholders, is bound to leave more discretion to the manager.

In the second case, owners are reluctant to float shares for fear of attracting bidders and (potentially) losing control (Bebchuk, 1999). Entrepreneurs who value control (benefits) may tap into the equity market only if they are granted some safeguard against takeovers or if they can choose an ownership structure which guarantees little interference by outside investors (Pagano and Röell, 1998). Accordingly, they will be reluctant to go public when public capital markets stipulate strict corporate governance rules that impede their autonomy (Boot et al., 2006). Instead, they may prefer to enter private contracts which do not impose listing and disclosure costs or migrate to markets with more lax regulations.³² Worse still, publicly listed firms may simply forgo valuable investments that would require an equity recapitalization (Attari and Banerjee, 2004; Banerjee, 2005; Kihlstrom and Wachter, 2005). Indeed, evidence in Bauguess et al. (2007) suggests that control-oriented but risk-averse entrepreneurs rely on issuing non-voting shares to finance new high-risk projects that they would otherwise not undertake. Similarly, Chemmanur and Jiao (2006) argue that such dual-class recapitalizations, which allow

³¹In a study of voluntary (as opposed to mandatory) share class unifications, Pajuste (2005) finds that the controlling minority shareholder afterwards owned less than 10 percent of the stock in 20 out of 71 cases.

³²It is sometimes claimed that successful dual-class firms, like Warren Buffet's Berkshire-Hathaway Inc. or Google Inc., may have remained private, if the founders had been unable to retain control. Whether stricter regulations push undesirable firms out of the market or lead sound firms to resort to inferior means of financing is an open question that is also raised in the context of other corporate governance rules, e.g., the Sarbanes-Oxley Act (Zingales, 2006).

entrepreneurs to raise capital without increasing the takeover threat, serve to finance long-term investment strategies. In accordance with these arguments, several studies find positive value effects for dual-class recapitalizations (e.g., Partch, 1987; Dimitrov and Jain, 2006). Smart and Zutter (2002) show that dual-class firms are more likely to return to the market for more capital in the years following their IPO, and the evidence in Smart and Zutter (2003) supports the view that dual-class structures are chosen by entrepreneurs who value post-IPO control.

The last point suggests that a mandatory one share - one vote rule would deter firms from tapping public markets or going public. This seems at odds with the empirical regularity that better minority shareholder protection is associated with larger public markets (La Porta et al., 2000). Yet, this need not be a contradiction since dual-class structures, like large owners, may be a consequence rather than a determinant of poor governance institutions. In contrast, the above argument is a *ceteris paribus* statement: For an otherwise given institutional environment, imposing one share - one vote reduces entrepreneurs' incentives to raise outside equity, as they value control. Consistent with this view, many US firms adopt anti-takeover provisions, including dual-class shares, when going public (Field and Karpoff, 2002).

Last but not least, it should be noted that allowing entrepreneurs to choose the ownership and control structure that maximizes their total benefits, including their expected proceeds from share sales, rewards and hence encourages entrepreneurial activity.

4.2. IMPLEMENTATION ISSUES

Irrespective of its optimality, a mandatory one share - one vote rule may not achieve its desired objective as firms may opt for other ways to separate ownership and control (Bebchuk and Hart, 2002). First, a wedge between cash flow rights and voting rights can also be created by linking multiple firms, each with a single share class, through pyramids or cross-ownership structures. A pyramid consists of a hierarchy of firms in which higher-tier firms own shares in lower-tier firms. This device allows to attain a controlling minority structure and is often chosen for this purpose. For instance, a three-tier pyramid enables a party to fully control

the bottom-tier firm while holding merely 12,5 percent of its cash flow rights. It only requires a majority stake in the top-tier firm which owns a majority stake in the middle-tier firm which in turn owns a majority stake in the bottom-tier. The leverage is achieved by transforming the remaining shares in each tier into de facto non-voting shares. By chaining more firms, the wedge between cash flow rights and voting rights can be substantially increased without losing control over the firms in the pyramid.³³ In cross-ownership structures firms own shares in each other. Thus, the voting rights used to control a group of firms are distributed over the entire group rather than concentrated in the hands of a single party. Since pyramids and cross-ownership can replicate controlling minority structures achievable through dual-class shares, the insights about the impact of deviations in firms with controlling shareholders are also applicable to them (Bebchuk et al., 2000). However, there may be differences along other dimensions, such as market liquidity (Becht, 1999), which have not yet been explored theoretically.³⁴ In addition, pyramids and cross-ownership fulfill other functions. They allow firms to create an internal labor and capital market or facilitate vertical and horizontal integration (Almeida and Wolfenzon, 2006; Khanna and Yafeh, 2007). We do not cover these aspects of business groups here.

Second, recent capital market developments have made it easier and cheaper for shareholders to trade their cash flow rights or voting rights with other investors, thereby unbundling the firms' security-voting structure (Hu and Black, 2006a, 2006b). For instance, stock options allow a shareholder to hedge her direct financial interest in a firm while retaining her voting rights. At the same time, her counterparty assumes a financial interest in the firm without any corresponding (formal) influence. Conversely, the security-lending market allows investors to borrow votes without assuming any firm-related economic risk. When an investor borrows a share from its legal owner, the dividends ultimately still accrue to the lending shareholder but the vote may be exercised by the borrower. If votes and

³³In East Asia, where multiple share classes are commonly prohibited, many business groups rely on pyramids and cross-ownership to concentrate control (Claessens et al., 2000). In Europe pyramids are used by 19 percent of listed European firms that have a controlling shareholder at the 20 percent level (Faccio and Lang, 2002).

³⁴Villalonga and Amit (2007) report that family firms with dual-class structures have lower market values than those with pyramids.

cash flow rights can be fully unbundled through market transactions, the security-voting structure loses its relevance (Hart, 1995). Any shareholder can privately engineer her desired combination of cash flow and voting rights, including extreme deviations from one share - one vote. A particular disconcerting issue is that an investor could in principle own voting rights of a firm in which she has a negative economic interest (Martin and Partnoy, 2005). While it is yet unclear to what extent vote trading affects corporate decision-making, there exist some evidence of increased vote trading around major corporate events (Christoffersen et al., 2005). Given that these transactions are beyond the firm's control, a thorough analysis requires an explicit model of the market(s) in which they take place.³⁵

In light of the above, a comprehensive one share - one vote rule seems to require that multi-firm structures and capital market transactions are regulated as well. Otherwise, shareholders may resort to these alternative, possibly less stable and more opaque, means in which case the policy might backfire. However, discouraging these forms of deviations, while in principle possible, impairs their other important functions, such as internal capital markets or improved risk-sharing through derivative transactions.

Another implementation issue is how holders of superior voting rights should be compensated in stock unifications, which are essentially a sale of voting power from superior vote to inferior vote shareholders. While voluntary unifications imply mutually beneficial terms of trade (see next subsection), mandated unifications must specify (a procedure to determine) the terms of this transaction, as the parties are bound to disagree. The regulator's problem is that the parties are neither inclined to reveal their information nor to bargain voluntarily due to the inherent redistribution.³⁶ Any specific procedure is likely to be biased in favour of one or the other party (Bergström and Rydqvist, 1990; Bigelli et al., 2007; Hauser and Lauterbach, 2004). Neither can this redistributive conflict be removed by selling the entire firm in a bidding contest among single-class (shell) companies.

³⁵This is beyond the scope of this survey, and we refer the reader to a small but growing literature on this subject (Blair et al., 1989; Hu and Black, 2006a, 2006b; Neeman and Orosel, 2006).

³⁶The case of the Siemens AG in Germany illustrates some of these difficulties (McCahery et al., 2004): The shareholders decided to abolish a special share class without compensation, and in response the Siemens family sued the firm for compensation. The claim was first acknowledged by a Munich court, which awarded the family a compensation of about EUR 32 million based on past price differences, but the decision was later reversed by the Higher Court of Bavaria.

A majority shareholder would always ensure that the bidder offering her the most generous compensation wins the contest. To avoid this outcome, her voting power would have to be diluted prior to the contest, which brings back the initial question of how to compensate superior vote shareholders in unifications.

4.3. MINORITY SHAREHOLDER PROTECTION

In the policy debate, one share - one vote is advocated as a means to protect small shareholders against private benefit extraction by controlling minority shareholders. While the existence of private benefits is widely documented (e.g., Doidge, 2004; Dyck and Zingales, 2004; Nenova, 2003; Zingales, 1995b), this does not imply that resources are allocated less efficiently. Efficiency is measured by total firm value, i.e. the sum of security benefits and private benefits. The evidence as to whether or not private benefit extraction by controlling shareholders reduces total firm value is inconclusive (Adams and Ferreira, 2007).

Apart from efficiency considerations, policy-makers may consider minority shareholder protection an important policy objective. However, sophisticated investors, who are aware of corporate governance problems, ought to anticipate private benefit extraction. If so, they will demand an appropriate discount and earn a fair rate of return. Thus, there is no need for regulation unless one believes that markets are not efficient, that is, investors systematically underestimate the value consequences of private benefit extraction.³⁷ Although they may sometimes do so (Ehrhardt and Nowak, 2003), the existing evidence strongly suggests that the extent of private benefit extraction is anticipated. That is, stock returns of dual-class firms are not lower than those of single-class firms (e.g., Gompers et al., 2007; Smart et al., 2007). Similar results are found when firms are sorted according to other corporate governance measures (Core et al., 2006; Cremers and Nair, 2005), suggesting that "corporate governance" risk is correctly priced.

In addition, it is sometimes argued that firms in which controlling shareholders are likely to extract private benefits have a higher cost of equity or are even unable

³⁷The growing behavioral finance literature allows for persistently mistaken agents (e.g., Shleifer and Vishny, 2003; Stein, 1996). While this in principle creates scope for regulators to protect investors from their own poor decisions, Daniel et al. (2002) argue that the government should not respond through direct interventions, which are equally prone to bounded rationality, but through measures that improve private decision-making (e.g., disclosure and reporting).

to raise sufficient funds. For instance, Giannetti and Simonov (2006) document that investors shy away from firms that they associate with poor corporate governance, including dual-class firms. Hence, firms that deviate from one share - one vote may have to forego profitable investments and experience lower growth. This argument neglects, however, the fact that the security-voting structure is contractible and alterable. If there is a surplus to be shared from further investment, the controlling shareholder should be able to propose an alternative security-voting structure, e.g. a share class unification, with an appropriate compensation scheme such that indeed everyone fares better than under the current structure. Similarly, an entrepreneur who goes public is free to choose a security-voting structure that alleviates financial constraints. Consistent with the notion of efficient (re)negotiation, some studies report positive announcement effects for dual-class recapitalizations (as already mentioned), some for voluntary share class unifications (Pajuste, 2005), and some for *both* (Ang and Maggins, 1989). This suggests that the endogenous choices observed in practice may be optimal responses to a firm's given situation.

However, regulation may be justified when agency problems lead shareholders to approve structures that are against their best interest, for example, because of managerial influence over the decision process, or because of coordination problems (Gordon, 1988; Neeman, 1999).³⁸ Dominant shareholders, in particular, may take advantage of the possibility to weaken the influence of minority shareholders (Gilson, 1987). As a result, an entrepreneur who goes public may be unable to guarantee initial shareholders that their voting rights will not be diluted in the future. This commitment problem may in turn lead to financial constraints that cannot be contracted away (Becht et al., 2003). One possible policy response is to disallow, or mandate a shareholder vote over, any midstream change in the security-voting structure that would weaken the voting rights of the existing shareholders. This would still enable dominant shareholders to raise additional funds without having to surrender control, while preventing any consolidation of control at the expense of existing shareholders. In the US, similar regulations are currently in place at

³⁸For instance, a (voluntary) dual-class exchange offer can expose dispersed shareholders to a pressure-to-tender problem (Ruback 1988; Arruñada and Paz-Ares, 1995). See section 2.2.1. for a brief description of the pressure-to-tender problem. Concerns of this kind sparked a policy debate during the US takeover wave of the 1980s when many firms used dual-class recapitalizations to centralize control in the hands of insiders (Fischel, 1987; Seligman, 1986).

the NYSE, the Amex and NASDAQ (Ferrarini, 2006).

5. Lock-In Mechanisms

So far, the analysis has focused on cash flow and vote allocations that can be implemented or replicated with a dual-class share structure. Other mechanisms to allocate voting power disproportionately among shareholders are voting and ownership ceilings, priority shares, depositary certificates and double voting shares. These devices that we discuss in turn primarily serve to lock-in control.

Ownership and Voting Restrictions Voting ceilings limit the number of votes that a shareholder can cast irrespective of the number of voting shares she owns. That is, all shares held in excess of the ceiling lose their votes, which can drive a wedge between the cash flow rights and the voting rights of a blockholder. Ownership ceilings prohibit shareholders to own more shares than a certain threshold. Although ownership ceilings are strictly speaking not deviations from the proportionality principle, they prevent individual shareholders from accumulating a substantial stake and voting power, thereby limiting the ability to influence corporate decisions.

In contrast to differential voting shares, voting and ownership ceilings are primarily introduced to dilute rather than leverage shareholders' ability to concentrate control. That is, they hinder the emergence and influence of large shareholders, thereby making takeovers virtually impossible. At the same time, they fragment power and impede effective monitoring of the management. Voting ceilings have been justified on grounds that they protect minority shareholders from parties who seek to gain control with the purpose of looting the firm (Franks and Mayer, 1998a). However, they leave shareholders at the mercy of managers who are largely insulated from blockholder interference and takeovers (Goergen et al., 2005). That is, they simultaneously undermine the two major mechanisms for disciplining managers: outside monitoring and control contestability.

As voting ceilings can be removed by shareholder vote, they are not an absolute safeguard against takeovers.³⁹ Moreover, voting on a removal is similar to (directly)

³⁹While voting restrictions partly explain the low level of hostile takeovers in Germany, the

voting on an acquisition offer, a mechanism proposed by Bebchuk and Hart (2001) to overcome coordination problems in tender offers. Like the Bebchuk-Hart mechanism, it resolves the pressure-to-tender problem. If a majority of shareholders were to eliminate the ceiling, disapproving shareholders would still have the option to tender. Thus, the latter have no incentives to distort their preferences in the vote due to hedging considerations. When voting on the removal, shareholders compare pre-takeover share value with the returns from tendering or retaining their shares, and therefore do not remove the ceiling when confronted with a value-decreasing bid. Removable ceilings do, however, not overcome the free-rider problem in case of a value-increasing bid. Once a ceiling is removed by vote, each shareholder still prefers to retain her share unless the bidder offers at least the post-takeover share value.

A special case of restrictions are foreign ownership ceilings. It is often claimed that they serve to ensure that national champions remain in domestic hands. While this may be true in many or even most cases, Stulz and Wasserfallen (1995) provide an alternative rationale. In their theoretical model, a foreign ownership ceiling helps the firm to extract a higher share premium from foreign investors. They predict that this effect exists in countries that benefit from (international) capital flight and find empirical support for this hypothesis in the case of Switzerland.⁴⁰ Nevertheless, foreign ownership ceilings protect firms from foreign acquirers.

Priority Shares Priority shares grant their holders extraordinary decision powers in specific matters. For example, they may entitle them to appoint board members or veto a proposed merger. Priority shares and its associated privileges are often tied to the identity of the person or institution that they are issued to, as e.g. governmental authorities (in which case they are commonly called golden shares). Their holders put (too) much emphasis on their private benefits when taking decisions, and may block control changes or other decisions that endanger

hostile bid for Continental by Pirelli was substantially delayed but not prevented by the voting ceilings (Franks and Mayer, 1998b). On these accounts, the initial proposal for the European Takeover Directive saw voting ceilings as a primary target of the break-through rule (McCahery et al., 2004).

⁴⁰Supportive evidence is found in studies reporting that firms' non-voting shares sometimes trade at a premium over their voting shares when foreign ownership of the latter is restricted (e.g., Odegaard, 2006).

these benefits, against the interest of the other shareholders. In the case of golden shares, such "private" benefits may preserve public (national) interests or simply serve self-interested politicians.⁴¹ In other cases, they accrue to corporate insiders. For instance, priority shares in the Netherlands have typically been sold to foundations that are controlled by management-friendly parties or even the company directors themselves (Kabir et al., 1997; Renneboog and Szilagyi, 2006). This endows the board with substantial powers, notably to appoint its own members. As a result, an unwanted large shareholder cannot easily obtain control of the firm's key positions, and insiders are insulated from outside monitoring and hostile takeovers.

Depository Certificates Another effective entrenchment device are depository certificates, which are common in the Netherlands. These certificates carry the shares' cash flow rights but no direct voting rights. The actual shares of the company are administered by a foundation which in turn issues the depository certificates. In order to vote, certificate holders must request a voting proxy from the foundation. Otherwise, the foundation will exercise the voting rights.⁴² This typically leaves the majority of the votes in the hands of a foundation whose board members have links with the management of the firm (Renneboog and Szilagyi, 2006).

Double Voting Shares In a system of double voting shares, shareholders receive an additional vote for every share that they have held in their own name for a minimum number of years.⁴³ In France, this privilege can be restricted to shareholders from the European Union, Norway, Liechtenstein, and Iceland (Knudsen, 2005). Since the double vote is not attached to the share but is granted to the

⁴¹Government controlled firms may follow political rather than economic objectives (Shleifer, 1998, Shleifer and Vishny, 1994; Grundmann and Möslein, 2003). Yet, Bortolotti and Faccio (2006) find that golden shares need not harm the other shareholders as the government may be more likely to bail out the firm during distress (despite the fact that this may deteriorate ex-ante incentives). For wider discussions of the interplay between politics and corporate control, see Jensen (1991) and Hellwig (2000).

⁴²Another specific feature of the Dutch governance system is the structured regime, which is mandatory for firms with more than 100 employees or subscribed capital in excess of €11.4M. It transfers numerous powers from the shareholders to the supervisory board, such as the approval of annual accounts or the election of management and supervisory directors (Moerland, 2002). Formally, this does not violate the proportionality principle but reduces shareholder rights *in toto*.

⁴³The legal provisions for double voting shares in France date back to 1933 and were designed to compensate for the prohibition of dual-class shares (Conac, 2005). The minimum holding period before the additional vote is granted is typically two years but can be longer.

holder, it cannot be transferred. That is, double voting shares do not constitute a separate share class and revert to ordinary shares when changing hands.

The system of double voting shares resembles a dual-class share structure consisting of ordinary voting shares and shares with two votes each. Like dual-class shares, they can serve to consolidate an incumbent's control and to favor her in control contests (Lannoo, 1999). But in contrast to dual-class shares, they may impair takeovers even when the incumbent is willing to relinquish control. Since the double votes are lost in a transaction, the block may no longer command a majority of the votes in the hands of the bidder. Thus, the incumbent cannot ensure the success of the takeover. Moreover, when a mandatory bid rule is in place, as in France, the bidder must extend an offer to all outstanding shares. She cannot price-discriminate between double voting and ordinary shares because they legally constitute a single class. This is equivalent to having a coattail provision in a dual-class firm, as it forces the bidder to offer a control premium also to small shareholders (section 2.B). Thus, the mandatory bid rule reinforces the entrenchment effect of double voting shares.

Double voting shares are defended as protecting firms against the influence of institutional investors with short holding periods (high turnover), who may pressure managers to pursue short-term profits at the expense of long-term profitability. Such allegations have recently been raised against activist hedge funds (Becht et al., 2006; Kahan and Rock, 2006). However, empirical studies indicate that institutional ownership leads to less, rather than more, short-term investments.⁴⁴ In fact, Edmans (2007) argues that institutional investors encourage long-term investments by collecting information about firms' future profitability and (partially) revealing this information to the market through their trades.

Lock-in mechanisms are functionally similar to anti-takeover charter amendments.⁴⁵ Whether these are beneficial or detrimental for shareholders is debated.

⁴⁴For instance, Bushee (1998) finds that by and large institutional shareholdings are associated with more long-term investment. Similar results are found in other papers, many of which are referenced in Kahan and Rock (2006).

⁴⁵By the end of the 1980s, most S&P 500 firms and a vast majority of those firms listed on the NYSE or the American Stock Exchange are covered by several anti-takeover devices, including supermajority rules, fair-price amendments, staggered boards or the authorization of preference shares, which are all subject to shareholder approval (Danielson and Karpoff, 1998; Comment and Schwert, 1995).

The arguments largely replicate those put forward in the controversy about the benefits and costs of contestable control (as described in sections 3.C and 3.D). That is, the entrenchment view argues that defensive measures allow incumbent managers to protect their private benefits at the expense of the shareholders, thereby hindering an efficient redeployment of corporate assets. By contrast, the shareholder interest view holds that they protect managers (and firms) from the disruptive effects of takeovers, enabling them to e.g., focus on long-term projects. In addition, defensive measures affect the dynamics of the tender offer process to the benefit of shareholders who lack coordination, by reinforcing the bargaining role of management on their behalf (Harris, 1990). This may prevent coercive bids (Bebchuk and Hart, 2001) and promote competition among bidders once the company has come into play (Shleifer and Vishny, 1986a). The empirical evidence on the effects of anti-takeover devices is inconclusive and does not resolve the debate (Adams and Ferreira, 2007; Becht et al., 2003; Burkart and Panunzi, 2006).

Apart from double voting shares, the above mechanisms grant insiders considerable protection from takeovers, even if they own very few or no cash flow rights. They are, however, not absolute defences, as they can be removed by shareholder vote. In addition, voting and ownership ceilings, priority shares that empower corporate insiders, and depositary certificates hinder outside monitoring. Compared to dual-class shares, the verdict for these mechanisms seems less ambiguous: They prevent individual shareholders from exerting substantial influence or disempower shareholders as a group, thereby granting insiders considerable protection from both takeovers and shareholder activism. While it is sometimes claimed that this protects minority shareholders, the lack of constraints on managerial behavior is hard to justify theoretically. Finally, double voting shares also entrench existing control structures and make friendly control transfers more difficult, in particular in the presence of the mandatory bid rule.

6. Concluding Remarks

The standard justification for one share - one vote is that shareholders, as residual claimants, have the strongest interest in maximizing firm value and should therefore

have voting rights in proportion to their equity stake (e.g., Easterbrook and Fischel, 1983, 1991; Black and Kraakman, 1996). By contrast, deviations from one share - one vote create a wedge between financial interest and voting power, which induces a shareholder to pursue self-serving actions at the expense of firm value. Theory partially confirms this view. For instance, controlling minority shareholders have the incentives and power to divert corporate resources, or to retain control in spite of a more efficient rival.

However, theory shows that one share - one vote also comes with costs. On the one hand, tying votes to cash flow rights raises the private cost of issuing equity. As a result, one share - one vote may deter entrepreneurs from going public to avoid the risk of losing control. Instead, they may resort to inferior forms of financing, which in turn may distort their investment strategies or inhibit firm growth. On the other hand, tying votes to cash flow rights makes it more expensive to acquire or exercise control. For instance, it exacerbates the free-rider problem in dispersedly held firms. Moreover, one share - one vote discourages ownership of controlling stakes and impairs blockholders' ability to monitor management.

Hence, the primary impact of mandating one share - one vote is to disempower large owners. To evaluate the merits of such a policy, one therefore needs to compare not only the costs and benefits of controlling minority structures but also the costs and benefits of the alternative: the managerially controlled firm. The conclusion we draw from this comparison is that mandating one share - one vote may not improve overall efficiency, notably in systems built around large active owners. In addition, mandating one share - one vote confronts regulators with serious implementation problems, as firms or shareholders can resort to pyramids or derivative transactions to separate ownership and control.

These reservations are not meant to say that there should be no limitations on the choice of security-voting structure. Theory supports the prohibition of midstream changes that dilute the voting rights of existing share classes. Otherwise, firms may have difficulties raising capital from investors who are afraid of being disenfranchised at some later time.

Finally, we believe that the case for regulating voting and ownership ceilings, priority shares that empower corporate insiders, and depositary certificates is rel-

atively clear-cut. These lock-in mechanisms prevent individual shareholders from exerting substantial influence or disempower shareholders as a group. This grants managers considerable protection from both takeovers and shareholder activism.

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