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The One Share - One Vote Debate:
A Theoretical Perspective

Mike Burkart
Stockholm School of Economics, CEPR, FMG and ECGI

Samuel Lee
Stockholm School of Economics

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Abstract

The impact of separating cash flow and votes depends on the ownership structure. In widely held firms, one share - one vote is in general not optimal. While it ensures an efficient outcome in bidding contests, deviations mitigate the free-rider problem, thereby promoting takeovers. In the presence of a controlling shareholder, one share - one vote promotes value-increasing control transfers and deters value-decreasing control transfers more effectively than any other vote allocation. Moreover, deviations allow a controlling shareholder to reduce her equity stake, thereby exacerbating the conflict of interest between her and the minority shareholders. If there is any, the rationale for mandating one share - one vote must therefore be to dis-empower controlling minority shareholders. While this is likely to reduce conflicts among shareholders, it tends to empower managers to the detriment of all shareholders. It is an open question whether this policy would improve the quality of corporate governance, notably in systems built around large active owners. In addition, an all-inclusive one share - one vote principle would require to also regulate pyramidal groups as well as (some) derivative security transactions. The verdict in the case of depositary certificates, voting and ownership ceilings is less ambiguous, since they insulate managers from both takeovers and effective shareholder monitoring.

Mike Burkart*
Gösta Olson Professor of Finance
Stockholm School of Economics - Department of Finance
P.O. Box 6501
Sveavagen 65
SE-113 83 Stockholm,
Sweden
phone: +46 8 736 9678 , fax: +46 8 31 6422
e-mail: mike.burkart@hhs.se

Samuel Lee
Stockholm School of Economics
Department of Finance & SITE,
P.O. Box 6501
Sveavagen 65
SE-113 83 Stockholm,
Sweden
e-mail: samuel.lee@hhs.se

The One Share - One Vote Debate: A Theoretical Perspective[*]

Mike Burkart

Department of Finance,

Stockholm School of Economics,

CEPR, ECGI and FMG

Samuel Lee

Department of Finance & SITE,

Stockholm School of Economics

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I   Introduction

The most important contractual right that shareholders have is widely taken to be their right to vote on important corporate matters (Manne, 1965; Easterbrook and Fischel, 1983). That provided, the question arises how voting rights should be allocated among shareholders. At first glance, it seems natural to demand that shareholders who supply equal amounts of capital or hold equal claims should have equal opportunity to influence decisions. However, the one share - one vote principle is often violated in reality. Among the top 300 European companies 35 percent deviated in 2005 from the one share - one vote principle (Deminor Rating, 2005). In North America, such deviations are less frequent but still common (Chemmanur and Jiao, 2006). The fraction of listed firms with dual-class shares is about 10 percent in the US and about 22 percent in Canada (Toronto Stock Exchange Index).

Corporate voting practices have varied over time as much as they vary across countries today. Deviations from one share - one vote can be traced back to ancient Rome, where so-called *publicani* issued different shares 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 uprise against Big Business, the New York Stock Exchange (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). The NYSE abandoned the one share - one vote requirement in 1986 bowing to competitive pressure from the American Stock Exchange and NASDAQ, both of which admitted firms with multiple share classes. In Europe, a number of countries concurrently changed their laws to accommodate deviations (Arruñada and Paz-Ares, 1995), but more recently the trend has reversed (again). 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 the European takeover regulation (Ferrarini, 2006) and the call for stronger shareholder rights (Deminor Rating, 2005).

This paper reviews the theoretical economic literature on the one share - one vote principle. (Adams and Ferreira (2007) provide a survey of the empirical literature.) We focus on how the allocation of voting rights across share classes, henceforth the security-voting structure, affects the dynamics of control allocation and the incentives of those entrusted with managing the firm. To examine these effects, 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. This is not a restrictive simplification because any control and cash flow allocation put in place by more complex dual or multi-class structures can be reproduced by the simple structure.[1]

There are other ways than dual-class structures to deviate from the one share - one vote rule. First, even if all shares carry the same number of votes, a firm's corporate charter may include provisions that undermine (the spirit of) the one share - one vote principle. For instance, it may include ownership or voting ceilings that restrict the purchase of shares or the exercise of the votes above a certain limit. Another device is to issue priority shares that grant their holders extraordinary decision powers in specific matters. Since these deviations protect incumbent managers against intervention by outside investors, we refer to them as lock-in mechanisms. These mechanisms cannot be replicated by the simple dual-class share structure and are therefore discussed separately.

Second, 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

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[1]In 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).

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.[2] 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 (Bebchuk et al., 2000).

The insights about the impact of the dual-class share structure on control transfers and agency conflicts also apply to pyramids and cross-ownership. The reason is the same as in the case of multi-class share structures: Any allocation of cash flow and voting rights, notably controlling minority structures, achievable through cross-ownership and pyramids can be replicated by the simple dual-class structure (Bebchuk et al., 2000). 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, 2005; Khanna and Yafeh, 2006). We do not cover these aspects of business groups here.

Third, 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. 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 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). Although there exist some evidence of increased vote trading around major corporate events (Christoffersen et al., 2005), it is yet unclear to what extent and how vote trading systematically affects corporate decision-making.

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[2]In 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).

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Given these transactions are beyond the control of the firm, an examination of these deviations requires an analysis of the markets in which they take place. This 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).

This survey proceeds as follows. Section II provides a conceptual framework to analyze the role of corporate voting rights. Section III examines the impact of the security-voting structure on tender offers and negotiated control sales. Section IV analyzes how the security-voting structure influences the effectiveness of blockownership as a governance mechanism. Section V investigates the ex-ante effects that the security-voting structure has through its impact on the takeover threat. Section VI describes lock-in mechanisms and their effects. Section VII discusses the policy implications, notably the case for mandating one share - one vote. Section VIII concludes the theoretical survey.

II   Conceptual Framework

The standard justification for one share - one vote is based on two broad arguments. First, residual control rights should rest with shareholders because they are the residual claimants and thus have the strongest interest in maximizing firm value (e.g., Easterbrook and Fischel, 1983, 1991). Second, voting power should match economic incentives, i.e., shareholders should be able to voice their opinion in proportion to their owned risk-capital (e.g., Black and Kraakman, 1996).

These arguments, although intuitively appealing, are not indisputable. In practice, there exist other stakeholders whose claims are in part or under certain circumstances residual (Black, 1999).[3] Accordingly, some of them are endowed with residual control rights, though not necessarily in the form of ordinary voting rights. For instance, creditors receive control rights that are contingent on default or on violations of loan covenants; and in some countries law mandates that employees be represented on the board of directors. Moreover, even among providers of risk-capital, it is debatable whether allocating control rights proportionally to invested risk-capital is indeed optimal. Publicly

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[3]The argument that shareholders are the sole residual claimants relies on the presumption that the claims of other stakeholders are fully protected by contracts. This does not hold when either contracts or markets are incomplete (Tirole, 2001; Allen, 2005; Allen and Gale, 2002). Moreover, giving control solely to shareholders may not even maximize shareholder value (Allen et al., 2006). Nonetheless, shareholder control is commonly considered to be a second-best solution because shareholders are the most vulnerable residual claimants and because splitting decision rights among conflicting parties creates haggling costs and entails ill-defined performance measures (Becht et al., 2003; Tirole, 2001).

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listed firms apart, there exist many financing arrangements in which disproportional voting rights are part of sophisticated contracts. For instance, private equity and hedge 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). Another example is the possibility to incorporate a firm as a limited partnership where partners have differential voting rights despite contributing similar amounts of risk-capital (e.g., the 'Sociétés en Commandite par Actions' in France).

Over the last twenty years, the incomplete contract paradigm has emerged as the standard tool to analyze how to allocate control and cash flow rights. This approach posits that even highly sophisticated contracts do not fully specify a firm's (future) course of action. As time evolves, new unforeseen eventualities and opportunities arise to which the firm has to respond. The firm therefore needs to choose who takes such residual decisions. However, the necessity to take a decision does not as such imply that the allocation of decision-making authority matters. For instance, if all members of the firm are equally affected by a decision, there is full agreement and it is immaterial which member gets to decide. One reason why the allocation of control rights matters is the presence of an agency problem or conflict of interest. Indeed, the corporate governance literature is based on the premise of such conflicts of interest, usually among corporate insiders (top management or controlling blockholder) and outside investors (minority shareholders or creditors).

Following the seminal paper by Aghion and Bolton (1992), much of the theoretical research explores the relevance of control rights in a setting with an entrepreneur and a single investor. Control rights are modeled as the power to choose among alternative actions, and each action entails two kinds of benefits: security benefits or cash flows that can be shared between entrepreneur and investor, and non-transferable private benefits that accrue exclusively to the entrepreneur. Examples of private benefits are prestige, consumption of perquisites, excessive salaries, or the sale of assets below market value to another firm fully owned by the entrepreneur. The existence of these private benefits creates a potential conflict and hence a role for control rights. If the investor has the control right, she picks the alternative that maximizes her share of the security benefits. By contrast, the entrepreneur opts for the alternative that maximizes the sum of private benefits and her share of the security benefits. Thus, the parties may disagree over the choice of action in

which case the outcome depends on the allocation of the control rights. Moreover, the party in control need not take the socially efficient decision.

If the party in control, say the investor, indeed picks an inefficient decision, her gains are by definition smaller than the loss for the entrepreneur. Consequently, the entrepreneur should be willing to offer a payment that persuades the investor to pick instead the entrepreneur's preferred action, or equivalently, sell the decision right. Thus, even though control rights matter, their initial allocation does not affect the outcome: the parties reach the efficient decision through renegotiation.

Such renegotiation may, however, not be feasible for various reasons. One impediment emphasized in the corporate finance context is the entrepreneur's limited wealth. That is, the entrepreneur may not have sufficient wealth to compensate the investor in return for the forgone gains that the investor would realize with her most preferred action. In fact, limited wealth is most often the reason why the entrepreneur approached the investor in the first place. Otherwise, she could have undertaken the venture without the investor (Hart, 2001).[4]

The allocation of votes among shareholders is both a more complex and narrower question than how control should be divided between an entrepreneur and a single investor. One the one hand, the dispersion of control among a potentially large number of investors (shareholders) gives rise to new issues, in particular coordination and delegation problems. On the other hand, the (extent of) control rights allocated to the shareholders as a collective - as opposed to e.g., the board - are typically taken as given. Nonetheless, the basic insights from the entrepreneur-single investor relationship continue to apply. First, if all shareholders agree on the course of action, the allocation of votes is immaterial. Any group of voting shareholders takes the same decision, and shareholders are therefore indifferent with respect to the allocation of voting rights. Second, voting rights are valuable in the presence of conflicting interests, but the initial allocation need not affect the outcome. Indeed, if votes can be traded without frictions, the action with the largest sum of security benefits and private benefits will eventually be chosen, irrespective of the initial allocation.

This outcome may not be reached for generic reasons (e.g., wealth-constraints) and reasons more specific to publicly traded corporations. First, the ownership structure can be an obstacle

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[4]The failure to renegotiate under investor control does not imply that entrepreneur control is necessarily optimal. Under entrepreneur control, the chosen action may yield large private benefits but little security benefits, thereby precluding the investor from earning a return. Anticipating this, the investor may not be willing to finance the venture. Hence, investor control may be a prerequisite to secure financing as it is a means to increase security benefits (Tirole, 2001).

to an efficient market for votes or corporate control. On the one hand, dispersed shareholders as a group may bargain too aggressively because each of them perceives her decision as negligible for the takeover outcome. As a result, a would-be acquirer may be unable to earn a profit even though the takeover would be efficient. This is the well-known free-rider problem identified by Grossman and Hart (1980a). On the other hand, the coordination failure of dispersed shareholders may cause controlling blocks to be kept or purchased by a party that does not generate the largest sum of private and security benefits. Since the value of the controlling block comprises all private benefits but only part of the security benefits, a surplus from a block trade does not imply efficiency nor does efficiency imply a surplus. Section III examines to what extent the security-voting structure mitigates or exacerbates these inefficiencies, thereby affecting the outcome of takeovers. [5]

Second, vote trading ensures efficient decisions only if all shareholders are fully informed about the actions available and associated payoffs. This requirement is rarely met in large firms where shareholders do not exercise their control rights on a day-to-day basis but delegate it to the board and the management. Moreover, dispersed shareholders have little incentive to acquire the necessary information to monitor the management. As a result, corporate insiders enjoy considerable discretion in running the firm, which they may abuse to pursue their own interest. Unless there exist checks and balances on managerial behavior, the delegation of control is therefore likely to lead to an outcome that is not in the collective interest of the shareholders. One favored mechanism for mitigating the manager-shareholder conflict is partial ownership and control concentration in the hands of a large shareholder.[6] Section IV "Ownership Concentration and Security-Voting Structure" discusses how the security-voting structure affects the effectiveness of blockownership as a governance mechanism. In addition, a firm's ownership and control structure affects the extent to which hostile control transfers are feasible. The threat of losing control can affect a broad range of corporate decisions. Section V "Contestable Control and Security-Voting Structure" analyzes these ex-ante effects of takeovers and the possible interactions with the security-voting structure.

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[5] The security-voting structure, notably ownership and voting ceilings, may be the very reason why an efficient decision is not reached. We discuss such ceilings and other lock-in mechanisms in section VI.

[6] Other important governance mechanisms are the financial structure, the board of directors, product market competition and legal investor protection (Allen and Gale, 2000; Shleifer and Vishny, 1997). As the effectiveness of these mechanisms varies across firms and countries, the importance and prevalence of ownership concentration depends on the respective governance system.

III Control Transfers and Security-Voting Structure

A well-functioning takeover market subjects firms to a continuous auction process: Whenever an outside party is able to improve the value of the firm's existing resources it can bid for its control and replace the incumbent management. 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.[7] Our concern is whether dual-class share structures mitigate or exacerbate these frictions and inefficiencies. If so, we also explore whether shareholders and corporate insiders choose structures that minimize these frictions, thereby promoting an efficient control allocation.

Much of the takeover literature presupposes a publicly listed target firm with dispersed ownership and freely tradeable shares. By contrast, the empirical evidence shows that outside the UK and US most companies, even the listed ones, have a large shareholder (La Porta et al., 1999; Barca and Becht, 2001; Claessens et al., 2000; Faccio and Lang, 2002). While dual-class shares are frequently used to enhance the large shareholder's control (votes), thereby hindering or even preventing hostile takeovers, dispersedly held dual-class firms are by no means unusual. For instance, in the sample of Pajuste (2005) which covers 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.[8] We therefore examine the role of the security-voting structure for both dispersedly held firms and firms with a controlling shareholder.

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[7]There 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).

[8]In 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).

A   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 indeed 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 $n_v \in \{1, ... n\}$ 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 the 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.[9] 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.[10] 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.

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. We consider the cases of an offer by a single bidder and of bidding competition in turn.

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[9]The obligation to offer all share classes the same terms (coattail provision) is tantamount to imposing the one share - one vote structure, thereby making the choice of security-voting structure in case of a takeover meaningless.

[10]The assumption that a bid has to be unrestricted for a given class is not crucial. Indeed, 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 (Bergstöm et al., 1997).

A.1 Single Bidder

The seminal paper by Grossman and Hart (1980a) shows that the market for corporate control (votes) may not function efficiently even though – or precisely because – votes 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' decision to accept a bid.

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 to have a negligible impact on the takeover outcome.[11] 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 ($n\left(x^B - x^I\right) > K$). That is, value-increasing takeovers of dispersedly held firms fail, unless the bidder has a private source of gains or means to appropriate part of the post-takeover security benefits.

The theoretical literature suggests several ways how the bidder may (partially) overcome the free-rider problem, such as e.g., the dilution of minority shareholder cash flow rights (Grossman and Hart, 1980a), the acquisition of a stake prior to the tender offer (Shleifer and Vishny, 1986b), or financing the takeover with debt (Mueller and Panunzi, 2004). 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).

While bidder gains promote takeovers, they do 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 ($nx^B +$

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

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$Z^B < nx^I$). 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 gain control. Likewise, shareholders are indifferent between voting and non-voting shares, as they receive x^B in either case.

This irrelevance result hinges on three assumptions. First, shareholders know at the time of the bid the post-takeover security benefits. Second, the security and private benefits depend on (the identity of) the bidder but not on her final (cash flow) stake. Third, each shareholder presumes that her decision does not affect the takeover outcome, i.e., is not pivotal.

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).

At et al. (2007) show that the security-voting structure affects the takeover outcome in this setting precisely because $p = x^B$ 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 earn a profit and now 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. Thus, non-voting shares mitigate the free-rider problem when shareholders do not know the bidder's ability to generate value and private benefits and security benefits are positively correlated.[12] In this setting, the security-voting structure can in fact be used to discriminate among bidders, i.e., to frustrate value-decreasing ones but encourage value-increasing ones. Typically, this optimal structure deviates from one share - one vote, and the optimal number of voting shares decreases with the quality of legal shareholder protection.

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 $(Z^B > K)$. The security-voting structure has no impact on the bid price or the takeover incidence.

Burkart et al. (1998) show that the security-voting structure can matter because it affects the bidder's private benefits. In contrast to the above framework, they assume that private benefit extraction is 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 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 her private benefits. This in turn may be necessary to make the bid 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.

Finite Number of Shareholders With a finite rather than infinite number of shareholders, each individual shareholder takes into account that her decision is with positive probability pivotal for the aggregate outcome. As a result, she is willing to tender at a price below the post-takeover security benefits (Bagnoli and Lipman, 1988; Holmström and Nalebuff, 1992). This "discount" and hence the bidder's profit increase as it becomes more likely that each individual shareholder's

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[12]These 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.

decision is pivotal. A reduction in the number of voting shares therefore mitigates the free-rider problem (Gromb, 1992). With fewer votes to be tendered, each voting shareholder feels more pivotal and hence more inclined to sell. As a result, the bidder's profit and the takeover probability increase.

Social vs. Private Optimality   The above extensions of the Grossman and Hart (1980a) framework all 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 that compel bidders to purchase all shares, like the mandatory bid rule or the coattail provision, replicate the one share - one vote structure and may therefore frustrate too many value-increasing takeovers.

The socially optimal structure differs in general from the privately preferred one, because target shareholders neither internalize takeover costs nor the bidder's private benefits. 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 $x^B \geqslant x^I$. From a social perspective, takeovers should not succeed unless $nx^B + Z^B - K \geqslant nx^I + Z^I$. Clearly, these two conditions need not coincide.

This 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. Being self-interested, owners and initial shareholders choose the security-voting structure that maximizes their expected takeover returns, while the socially efficient rule takes the bidder's cost and private benefits into account.

Minority Blocks   The presence of a minority blockholder who merely decides to tender or retain her shares does not alter the takeover outcome in the framework with exogenous security and private benefits (e.g., Grossman and Hart, 1980a). Even if the blockholder were known to tender her shares, a successful bid still requires that enough small shareholders tender. Hence, the bid price must match the post-takeover security benefits as in case of the fully dispersed ownership. A minority block matters in the single-bidder setting only if the number of tendered shares is an

upward-sloping function of the bid price (Burkart et al., 2006). This feature obtains when target shareholders have heterogenous reservation prices (Stulz, 1988) or when the post-takeover security benefits increase with the bidder's final stake due to increasingly inefficient private benefit extraction (Burkart et al., 1998). In either case, the presence of an opposing minority blockholder increases the equilibrium bid price and makes takeovers less likely. As in the absence of a minority (voting) block, non-voting shares promote takeover activity. They reduce the fraction of cash flow rights that a successful bidder needs to acquire. This in turn lowers the takeover costs when reservation prices are heterogeneous or increase post-takeover private benefits when extraction is endogenous.

A stake owned by the bidder prior to the tender offer constitutes a source of gains, thereby mitigating the free-rider problem (Shleifer and Vishny, 1986b; Chowdhry and Jegadeesh, 1994). This effect aside, a toehold does not alter the previous results. In particular, to the extent that the toehold is not sufficient to render the bid profitable under one share - one vote, deviations may still promote takeover activity.

A.2 Bidding Contest

To analyze the role of the security-voting structure in bidding contests, we assume that an outside bidder B competes against 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. As before, the target firm has n outstanding shares which all carry the same security benefits but 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 than I, i.e.,

$$nx^B + Z^B \geqslant nx^I + Z^I. \tag{1}$$

Hence, the efficient outcome is that B wins the control contest. Following Grossman and Hart (1988) and Harris and Raviv (1988), we examine which security-voting structures ensure this outcome.

Reservation Prices 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. We refer to these amounts as the competitors' reservation prices. The bidding outcome will be efficient only if B's reservation price is higher than I's:

$$n_v x^B + Z^B \geqslant n_v x^I + Z^I. \tag{2}$$

It is easy to verify that B wins irrespective of n_v when she has larger private benefits. If B has both higher security and higher private benefits ($x^B \geqslant x^I$, $Z^B \geqslant Z^I$), she wins the contest irrespective of n_v. This also holds when B has lower security benefits but higher private benefits ($x^B < x^I$, $Z^B \geqslant Z^I$). In this case, B wins when $n_v = 1$ because $Z^B > Z^I$ and wins when $n_v = n$ because she is the more efficient party ($n x^B + Z^B \geqslant n x^I + Z^I$). As both sides of the inequality are linear in n_v, B's willingness to pay must be higher for all values of n_v. Thus, the security-voting structure is irrelevant for the outcome whenever the more efficient party has also larger private benefits.

In the opposite case ($Z^B < Z^I$), a dual-class structures can, however, lead to an inefficient outcome. When n_v is sufficiently low, I may have a higher reservation price than B. By contrast, the one share - one vote structure ($n_v = n$) always ensures the efficient outcome as condition (2) then coincides with the efficiency condition (1). Thus, one share - one vote is socially optimal as dual-class structures bear the risk that the less efficient party wins the contest (Grossman and Hart, 1988).

Control Premium When a party values control primarily because of her private benefits, she is willing to pay a control premium per share. To see this, divide condition (2) by n_v to obtain the price that a party is willing to pay per voting share: $x^B + (Z^B / n_v) \geqslant x^I + (Z^I / n_v)$. Each party is prepared to pay a premium (Z / n_v) in excess of her security benefits. Three factors account for the potential inefficiency of dual-class structures. First, the party with the larger private benefits is

prepared to pay a higher premium (relative to her security benefits). Second, the control premium per share increases when there are fewer voting shares. For a sufficiently low fraction of voting shares, the difference in the control premia may thus be larger than the difference in security benefits, and I may thus offer a higher per share price than B. Third, the voting shareholders' tendering decision ignores the potential loss incurred by non-voting shareholders. 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   The analysis of the case of bidding competition leads to the conclusion that the one share - one vote is socially optimal in the sense that it always allocates control to the bidder with the highest overall value.[13] The difference to the single bidder case arises because the losing bidder's reservation price as opposed to the free-rider condition is the relevant constraint for the bid price.

As in the single bidder case, target shareholders may prefer a socially suboptimal structure. As already pointed out by Grossman and Hart (1988), deviations from one share - one vote allow shareholders to extract a higher control premium.[14] To understand this, consider the case when $x^B > x^I$ and $Z^B > Z^I$. In this constellation, B always wins and pays I's reservation price. For any given dual-class structure, the value of all non-voting shares is $(n - n_v) x^B$ whereas the total price paid for the voting shares is $n_v x^I + Z^I$. It is easy to see that total shareholder wealth decreases in n_v as $x^B > x^I$. Shareholders gain from realizing B's security benefits and can do so by letting the parties compete over fewer shares as the total bid price always includes the value of I's private benefits.

When the security-voting structure is chosen before the parties' characteristics are known, deviations come with the risk of inefficient outcomes. That notwithstanding, Sercu and Vinaimont (2006) show through simulations that one share - one vote almost never maximizes shareholder wealth. That is, shareholders prefer to introduce non-voting shares.

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[13]While this 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.

[14]Bergström 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.

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 $n_v x^I - (1 - \alpha^I) n_v p^B + Z^I \geqslant \alpha^I n_v p^B$, or equivalently, $x^I + (Z^I/n_v) \geqslant p^B$. 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 do not affect either 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 bidder'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]

In conclusion, the theoretical literature on tender offers suggests that the optimal security-voting structure depends on a variety of factors, notably the extent of competition and the (assumed) correlation between the parties' private benefits and security benefits. Thus, the claim that one share - one vote – or any other specific structure – is generally most conducive to an efficient control allocation of widely held firms is not justified. Moreover, target shareholders' preferred structure diverges from the socially optimal structure. In the single bidder case, shareholders prefer other structures because they do not internalize the bidders' private costs and benefits. In the competition case, they favour dual-class structures to extract higher control premia.

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[15] When 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.

B 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. Yet, many dual-class firms have a controlling minority shareholder. In this case, a control transfer can only take place with her consent and is therefore best viewed as the outcome of a bilateral negotiation between incumbent and new controlling shareholder.

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, i.e., 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. As it turns out, this situation is very similar to the bidding competition between B and I, and the party that values control more highly will eventually gain (keep) it.

A control transfer is efficient if $nx^B + Z^B \geqslant nx^I + Z^I$, i.e., 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 is higher than that of I:

$$\alpha n_v x^B + Z^B \geqslant \alpha n_v x^I + Z^I. \tag{3}$$

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 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

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[16]In 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)

vote ensured an efficient takeover outcome in the competition case, 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.

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 αn_v 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 αn_v 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. That is, one share - one vote 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 through an initial public offering (IPO) can increase the total proceeds from a control sale. 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

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[17]If 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.

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). However, it should be noted that deviations that increase the expected proceeds of firm founders may encourage entrepreneurial activity.

Mandatory bid rules and coattail provisions, which force the bidder to extend the same offer to controlling and minority 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. The redistribution from bidder to small shareholders increases the cost of a control transfer, thereby reducing takeover activity and entrenching existing control structures. This is a mixed blessing: While it prevents all value-decreasing bids, it also deters more value-increasing bids. This deterrence effect is more pronounced for dual-class structures because the control premium per share tends to be higher.

IV Ownership Concentration and Security-Voting Structure

Control transfer models typically take the firm's assets as given and examines how the distribution of cash flow and voting rights affects the allocation of control over these assets. Another 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 the corporate decisions such as investment or dividend policies through two distinct channels. On the one hand, the ownership structure determines the extent to which shareholders actively participate in corporate decision-making. We review these direct effects in this section. On the other hand, the ownership and control structure affects the extent to which control is contestable, which in turn has repercussions for a broad range of corporate decisions. We discuss these indirect or ex ante effects of the takeover threat in the next section (section V).

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. The shareholders can limit divergences from their interest by providing appropriate incentives or by monitoring the manager's actions. To use the latter mechanism, shareholders must reserve the right to overrule 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, i.e., an effective control over decisions, only if it is duly exercised (Aghion and Tirole, 1997). However, shareholders tend to refrain from doing so unless they possess the relevant information. Small shareholders, in particular, lack the incentives to collect information and oversee managers. Abstracting from the possibility of a takeover, the allocation of votes among dispersed shareholders is therefore immaterial.

By contrast, an investor owning a substantial fraction of cash flow rights has an incentive 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 either through monitoring or through the alignment of interests.

A   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 in the next section. Here we assume that the blockholder is an outsider whose interests are perfectly aligned with those of the other shareholders.

Models of shareholder monitoring typically abstract from the role of voting rights and assume that the blockholder has the ability or power to correct managerial decisions.[19] This assumption

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[18]Both 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.)

[19]A 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.

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. For instance, a blockholder's proposal may need to be backed by sufficiently many votes, say a simple majority, forcing her to mobilize extra support if she owns too few 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; Hagelin 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. Furthermore, investors may simply not be sufficiently wealthy to purchase or own substantial blocks in large corporations.

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

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[20]Throughout the article, 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.

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 $s \geqslant 0.5$. 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., $dZ \geqslant c(s)$. 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 votes ($s^* \geqslant 0.5$) 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.

B   Inside Blockholder and Extraction

As small shareholders abstain from monitoring, an inside blockholder 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 actions, the insider underprovides such effort relative to the first-best level, because she bears all the effort 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. That is, it becomes 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.

The alignment effect operates solely through the insider's cash flow rights, while the vote allocation does not matter as long as the remaining shares are dispersed. As in the case of the outside blockholder, the irrelevance of the voting rights allocation relies on the assumption that other shareholders remain passive. A role for votes emerges when corporate decisions that benefit primarily the insider require shareholder approval. In this case, the inside blockholder may need to bribe a sufficient number of minority shareholders to support her, 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.[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 is against their own interest.

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, $\alpha(s) \in [0, 1]$

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[21] Otherwise, 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.

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

denotes the fraction of the private benefits that I retains, where $\alpha_s > 0$ for $s < 0.5$ and $\alpha(s) = 1$ for $s \geqslant 0.5$. 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 $\alpha(s)\phi(z) + d(V - z)$. Because $\phi(z)$ is concave in z, the solution is given by the first-order condition

$$\phi_z(z) = d/\alpha(s). \tag{4}$$

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 as 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(r) 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.

Bennedsen and Nielsen (2006) combine the preceding insights in a single framework in which votes have a distinct impact on the efficacy of monitoring and extraction. 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. In the above examples, an increase in s reduces the cost $c(s)$ of overruling the management but increases the share $\alpha(s)$ of private benefits accruing to the blockholder. Or putting it more generally, empowering the blockholder mitigates the agency conflict between managers and shareholders while aggravating the conflict between large and small shareholders. Hence, the effect of a mandatory one share - one vote rule that disempowers block-

owners is ambiguous: Although it protects small shareholders against private benefit extraction by the large shareholder, it leaves the manager with more discretion and hence the ability to extract (more) private benefits.

V   Contestable Control and Security-Voting Structure

Decisions and actions of corporate insiders are often not challenged by existing shareholders, in particular when their stakes are small. Another potentially effective constraint on the insiders' behavior is the market for corporate control (Manne, 1965). Apart from facilitating actual control changes, the mere possibility of a takeover can have a disciplinary effect (Grossman and Hart, 1980b; Scharfstein, 1988). The fear of being ousted after a takeover may induce insiders to abstain from self-serving actions that lower firm value. As the security-voting structure influences the extent to which control is contestable, it also matters for decisions taken in anticipation of a (hostile) takeover threat. In addition, (regulatory) restrictions on the security-voting structure limit the insiders' ability to preserve control which in turn may affect the choice of ownership structure and the decision to go public. In what follows, we examine the effects that the security-voting structure has through its impact on control contestability.

A   Alignment and Control Contestability

Control contestability and partial ownership concentration are alternative mechanisms to mitigate the conflict between insiders and (outside) shareholders. 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 give the insider more cash flow rights (more alignment) but also more votes (more entrenchment). For instance, under the one share - one vote structure, every increase in cash flow rights is matched by a proportional increase in voting rights.[23]

Separating votes from cash flow rights changes the interplay between the two mechanisms. If the insider holds more votes than cash flow rights she undermines both mechanisms, thereby increasing her incentives to engage in self-dealings. That is, leveraging the insider's voting power aggravates

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[23]The 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).

the agency conflict because she is better protected from a takeover and is less aligned with the other shareholders (Bebchuk et al., 2000; Claessens et al., 2002; Gompers et al., 2006; Masulis et al., 2007). As the subsequent example illustrates, the vote allocation could in principle also be used to achieve the opposite, i.e., 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 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 $s \geqslant 0.5$. That is, I can block takeovers more easily when she owns more votes, and is insulated from the takeover threat when she 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 return in case of a takeover. As $\phi(z)$ is concave in z, the solution is given by the first-order condition

$$\phi_z(z) = d/\theta(s). \tag{5}$$

This condition coincides with condition (4), 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.

Contrary to the above argument, insiders who hold a substantial financial interest but no (or less) votes do not seem prevalent. Instead, firms are either run by insiders who hold large equity stakes and are largely insulated from hostile takeovers, or widely held and run by professional managers, who are much more vulnerable to hostile takeovers but also less aligned. In spite of stock option plans and the like, compensation packages for top executives typically dwindle in comparison to the equity stakes of most large owners. Moreover, controlling shareholders often own non-voting shares (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.

Given these alternatives in practice, the relevant question seems to be whether firms are more efficiently run by contestable professional managers, who can be fired, or large entrenched owners, who are more aligned. The fact that recent corporate governance scandals occurred both in dispersedly held firms (e.g., Enron) as well as in firms with dominant owners (e.g., Parmalat) indicates that this question has no obvious answer.

B   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. On the one hand, actual takeovers may destroy or redistribute rather than create value. Like other governance mechanisms, they are not free of agency problems, and can be a manifestation as much as a cure of agency problems. For instance, takeovers may be driven by managerial overconfidence (Roll, 1986; Malmendier and Tate, 2004) or empire-building motives (Jensen, 1986), rather than by value improvements.

On the other hand, the mere threat of a takeover may distort insiders' behavior rather than induce them to promote 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. 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 takeovers less attractive (Pagano and Volpin, 2005).

Third, the takeover threat may discourage investments in firm-specific human capital which 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 more general skills that increase their value in the external labor market (Shleifer and Summers, 1988).

Finally, the takeover pressure may induce insiders to behave myopically and sacrifice long-term profitability to boost short-term earnings (Stein, 1988; Chemmanur and Jiao, 2006). For instance, a takeover threat may hinder firms from pursuing long-term R&D strategies.

The common theme of the above arguments is that some protection from takeovers may preserve or promote insiders' incentives to increase firm value. Thus, control contestability can have both negative and positive effects on corporate decisions, 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. The total firm value $V(e)$ is now an increasing function of the 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 $Z^I = \phi V(e)$.[24]

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 $V(e)$ ($\theta_s \leqslant 0$ and $\theta_V \leqslant 0$).

Given the above assumptions, I chooses effort e to maximize her expected pay-off

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

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[24]This simplifies the argument but ignores that I may extract more when she owns less cash flow rights. Given 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 isolates the trade-off between the disciplinary and the initiative effect of the takeover threat.

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 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

$$1 - (\theta + \theta_V V) = 1/\phi V_e. \tag{6}$$

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 ($s \geqslant 0.5$) 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 must fear a hostile bid. That is, the initiative effect dominates the disciplinary effect, and minimizing contestability provides the strongest incentives to create value. By contrast, if $\theta < |\theta_V V|$ the takeover threat disciplines the insider, i.e., induces him to work harder.

To analyze the question further, we assume partial contestability ($s < 0.5$) and taking the partial derivative of the left-hand side of (6) with respect to s yields

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

When this expression is positive, i.e., $(\theta_s + \theta_{Vs} V)$ is negative, the left-hand side of (6) 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 $\theta_{Vs}V$ is also negative if $\theta_{Vs} < 0$. 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 $\theta_{Vs} > 0$, 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.

C   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 equivalently, must relinquish more control when selling cash flow rights to outsiders. Paradoxically, this means that one share - one vote can both discourage and promote ownership concentration. In the first case, large owners relinquish control because it is too expensive; in the second case, they are reluctant to float shares for fear of losing control.

The very existence of a controlling shareholder implies that her opportunity costs of holding a non-diversified portfolio do not exceed her private benefits, or more precisely the sum of private benefits and (potential) value improvement of her equity stake due to her presence. 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 in two ways. She may reduce her voting power rather than to acquire more cash flow rights, because her overall benefits are insufficient to cover the additional costs. The loss in voting power raises the takeover probability, which in turn reduces her expected private benefits and hence reinforces her incentives to dissolve the block.[25] The resulting ownership deconcentration, while mitigating the conflict among shareholders, is bound to leave more discretion to the manager.

Alternatively, the value of her private benefits may induce the blockholder to retain her controlling position despite one share - one vote. In this case, the incumbent blockholder is reluctant to float shares lest the large private benefits will attract outside bidders, forcing her either to surrender control or to repurchase the floated shares at a control premium (Bebchuk, 1999). When dispersed ownership is, in this sense, inherently unstable, one share - one vote makes inevitable con-

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[25] In 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.

trolling shareholder structures (socially) more costly by e.g., constraining the incumbent's wealth diversification.[26] Moreover, if a firm depends on outside equity but can only raise funds by issuing voting shares which dilute the incumbent's control, the latter may prefer to forgo valuable investments (Attari and Banerjee, 2004; Banerjee, 2005; Kihlstrom and Wachter, 2005). By contrast, a dual-class structure would enable her both to shed risk and to raise new equity without compromising control. Accordingly, restricting the security-voting structure to break-up controlling minority shareholder structures may not achieve its objective but instead limit risk-sharing, market liquidity or firm growth. Conversely, direct measures to reduce private benefits may endogenously lead to less ownership concentration and fewer deviations from one share - one vote.

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.[27] Whether stricter regulations merely 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).

The last point suggests that a mandatory one share - one vote rule decreases the number of firms 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).

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[26] Bodnaruk et al. (2005) provide evidence that diversification gains are an important rationale for going public.

[27] For instance, it is sometimes claimed that successful dual-class firms, like Warren Buffet's Berkshire-Hathaway Inc. or Google Inc., may have remained private without a grip on control.

VI 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 rights 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 benevolence 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.[28] Moreover, voting on a removal is similar to (directly) voting on an acquisition offer, a mechanism proposed by Bebchuk and Hart (2001) to overcome coordination problems in takeovers. 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

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[28]While voting restrictions partly explain the low level of hostile takeovers in Germany, the 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).

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.[29] 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 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.[30] In other cases, they accrue to corporate insiders. For instance, priority shares in the Netherlands are usually sold to foundations that are controlled by management-friendly parties or even the company directors themselves. This endows the board with substantial powers, notably to appoint its own members.

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[29] Supportive 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).

[30] Government 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).

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.

Depositary Certificates Another effective entrenchment device are depositary 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 depositary certificates. In order to vote, certificate holders must request a voting proxy from the foundation. Otherwise, the foundation will exercise the voting rights.[31] 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.[32] 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 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

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[31] Another 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*.

[32] The 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.

dual-class firm, as it forces the bidder to offer a control premium also to small shareholders (section III.B). Thus, the mandatory bid rule reinforces the entrenchment effect of double voting shares.

Double voting shares are defended as protecting firms from myopic investors, 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) and during the 1980s against corporate raiders (Jensen, 1988). In theory, different planning horizons are irrelevant for corporate decisions in perfect capital markets but matter e.g., when information asymmetries or limits to arbitrage are more severe for long-term assets (Stein, 1988; Shleifer and Vishny, 1990). However, there is little evidence of myopia in markets and short-termism on part of institutional investors (Abarbanell and Bernard, 2000; Bushee, 1998).

Lock-in mechanisms are functionally similar to anti-takeover charter amendments.[33] Whether these are beneficial or detrimental for shareholders is debated. The arguments largely replicate those put forward in the controversy about the benefits and costs of contestable control (as described in sections V.A and V.B). 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,

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[33] By 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).

priority shares that empower corporate insiders, and depositary certificates hinder outside monitoring. 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.

VII   Policy Implications

Since the security-voting structure influences a firm's control allocation and the incentives of those entrusted with managing the firm, the question arises whether its choice should be regulated and, in particular, whether one share - one vote should be mandated. In the public debate, two popular arguments in support of one share - one vote are shareholder democracy and minority shareholder protection.

One share - one vote has been promoted on the grounds that it constitutes the natural counterpart of the democratic principle of equal suffrage in the corporate context. Yet, the parallel between these two concepts is rather vague, if not inappropriate (Dunlavy, 2006; Manne, 2007). Not only does the political one person - one vote rule more naturally translate into a one shareholder - one vote rule but it even appears to suggest that voting rights should be extended to other stakeholders of the firm. By contrast, one share - one vote implies that (only) shareholders receive voting rights in proportion to their economic ownership of the firm; whereas citizens' voting rights are neither proportional to their tax payments nor to their share in the public benefits provided by the government (Allaire, 2006).[34] Irrespective of these differences, it is a priori unclear whether corporate governance and political governance should adhere to the same principles, as the two systems operate under different premises. For instance, a government has (the legal monopoly over) police powers, i.e. the use of physical measures to coerce individuals to compel compliance with its statutes, but corporations do not (Jensen and Meckling, 1983). Also, shareholdings can usually be traded on secondary markets whereas (at least legally) citizenship cannot (Rodrigues, 2006).

The second popular argument is that one share - one vote protects small shareholders against (excessive) private benefit extraction by controlling minority shareholders (sections IV.B and V.A).

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[34]James Madison (1865) raises the question whether voting rights should be given to every citizen or just to those who own (economic) property: "In a just and free government...the rights both of property and of persons ought to be effectually guarded. Will the former be so in the case of a universal and equal suffrage? Will the latter be so in the case of a suffrage confined to the holders of property?"

The existence of private benefits of control is widely documented (e.g., Doidge, 2004; Dyck and Zingales, 2004; Nenova, 2003; Zingales, 1995b), and there is also some evidence that dual-class firms create less shareholder wealth, i.e., have on average a lower market valuation (e.g., Claessens et al., 2002; Cronqvist and Nilsson, 2003). Yet, even if such a market valuation discount existed, this would not imply that dual-class firms allocate resources inefficiently. Efficiency is measured by total firm value, i.e. the sum of security benefits and private benefits, and the evidence as to whether or not private benefit extraction by controlling shareholders reduces total firm value is inconclusive (Adams and Ferreira, 2007). Moreover, it should be noted that private benefits can be beneficial, even if their extraction dissipates value. For instance, they may mitigate the free-rider problem in takeovers or increase the proceeds from selling a firm, thereby rewarding entrepreneurial activity (sections III.A.1 and III.B).

Irrespective of efficiency considerations, policy-makers may be concerned about protecting minority shareholders if the latter systematically underestimate (the consequences of) private benefit extraction.[35] Although they may sometimes do so (Ehrhardt and Nowak, 2003), the overall evidence strongly suggests that the extent of private benefit extraction is correctly anticipated. That is, stock returns of dual-class firms are not lower than those of single-class firms (e.g., Core et al., 2006; Cremer and Nair, 2005; Gompers et al., 2006; Smart et al., 2006).

Alternatively, one may argue that firms in which controlling shareholders are likely to extract private benefits are more financially constrained, i.e. have more difficulties raising sufficient amounts of outside (equity) capital. For instance, Giannetti and Simonov (2006) document that investors shy away from firms that they associate with poor corporate governance, including dual-class firms. For this reason, firms that deviate from one share - one vote may have to forego profitable investments and experience lower growth. From a theoretical perspective, this argument neglects 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 suggest 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

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[35] The 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, reporting and advertising).

public is free to choose a security-voting structure that alleviates financial constraints.

However, regulation may be justified when agency problems lead shareholders to approve structures that are against their best interest, e.g., because of managerial influence over the decision process, or because of coordination problems (Gordon, 1988; Neeman, 1999).[36] Dominant shareholders, in particular, may take advantage of this 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 lead to financial constraints that cannot be contracted away (Becht et al., 2003). One possible policy response is to mandate a shareholder vote over any proposed change in the security-voting structure that would weaken the voting rights of the existing shareholders. In the US, such changes are currently outright prohibited by the NYSE, the American Stock Exchange and NASDAQ (Ferrarini, 2006).

As just discussed, neither shareholder democracy nor minority shareholder protection are compelling theoretical reasons to ban dual-class structures in general. Another argument in favour of regulation is that the security-voting structure preferred by (target) shareholders or firm founders diverges from the socially optimal structure. For instance, when several bidders compete for a target firm, one share - one vote is socially optimal but target shareholders tend to prefer a dual-class share structure to extract more rents from the winning bidder (section III.A.2). In this case, mandating one share - one vote would increase efficiency.

While this argument supports the use of mandatory rules, theory suggests that the (socially) optimal security-voting structure is likely to depend on firm specifics and the wider corporate governance context. In particular, deviations can promote takeover activity in dispersedly held firms (section III.A.1). Thus, no single structure – including one share - one vote – is in general optimal, which weakens the case for mandating a specific structure. Hence, a standardized and narrowly defined rule may exacerbate rather than mitigate inefficiencies, or may distort the relative competitiveness of different firms. It may further lack the flexibility required to adapt to changes in the corporate environment. More sophisticated rules or case-by-case decisions, on the other hand, may require information that is difficult or even impossible to obtain for a regulator. Regulatory

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[36] For 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 III.A.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).

discretion is also susceptible to political capture, which biases the rules towards the interests of those groups which have most to lose and are most easily organized.[37]

Theory suggests that the consequences of mandating one share - one vote, in particular whether or not it improves the control allocation, are unclear for dispersedly held firms. By comparison, the theoretical predictions are clear-cut for firms with controlling owners: One share - one vote is most conducive to an efficient control allocation (section III.B). Therefore, one may conclude that the decision to mandate one share - one vote should be taken in view of the effects it has on firms with controlling minority shareholders, not least because many dual-class firms have such an ownership structure. Accordingly, the rationale for mandating one share - one vote ought to be based on the perceived gains from weakening controlling minority shareholders and promoting control contestability. From a theoretical perspective, it is, however, unclear whether these gains would indeed materialize.

First, while actual takeovers allow more efficient owners and managers to gain control, takeovers - like other governance mechanisms such as active owners - are not free of agency problems. For instance, takeovers may be driven by managerial motives (empire building), rather than by value improvements. Similarly, the takeover threat disciplines managerial behavior but also exacerbates agency problems, when managers primarily take actions to protect their position. Mandating one share - one vote may even discourage entrepreneurs from undertaking investments or going public for fear of losing their grip on control when raising outside equity.

Second, one share - one vote increases the cost of accumulating votes and weakens the influence of minority blockholders, which may discourage active ownership. While this mitigates the conflict among shareholders, it also strengthens the position of managers, thereby aggravating the manager-shareholder conflict. Whether contestable managers or entrenched owners are more prone to run firms efficiently or to act in the small shareholders' interest is debatable (Bolton and von Thadden, 1998). Managers are more vulnerable to hostile takeovers, but have a much smaller stake in the firm. Hence, a prerequisite for a consistent argument in favour of one share - one vote must be the assessment that the costs of entrenchment outweigh the benefits of alignment. Or in other words, the policy must be based on the confidence that managers are sufficiently disciplined by other governance mechanisms, such as legal protection, strong boards or a well-functioning takeover market

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[37]For instance, Romano (1987) and Bertrand and Mullainathan (1999) argue that regulations are likely to reflect primarily the interests of managers because they have greater lobbying power than dispersed shareholders.

(Shleifer and Vishny, 1997). However, concentrated ownership structures tend to be prevalent in countries in which other governance mechanisms are weaker.[38] This suggests that improvements in the general corporate governance environment should precede any intervention directly aimed at discouraging blockownership (Berglöf and Burkart, 2003).

Even if a specific security-voting structure were unambiguously optimal, mandating this structure raises some intricate issues. First, should holders of disproportionate voting rights be compensated in stock unifications, and if yes what scheme should be used? Unifications are essentially a sale of voting power from superior vote to inferior vote shareholders. While voluntary unifications imply mutually beneficial terms of trade, 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.[39] Therefore, any specific procedure is likely to be biased in favour of one party at the expense of the other, thus leading to ambiguous wealth effects (Bergström and Rydqvist, 1990; Bigelli et al., 2007; Hauser and Lauterbach, 2004). Neither can this redistributional conflict be removed by selling the entire firm in a bidding contest among single-class (shell) companies. 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.

Second, shareholders may evade (the spirit of) one share - one vote by resorting to alternative means of separating cash flow and voting rights. For instance, a prohibition of differential voting rights may cause firms to shift from dual-class share structures to pyramids (Bebchuk and Hart, 2002). Alternatively, shareholders may use derivative transactions to dispose of their cash flow rights or to borrow votes. On the one hand, this may be less desirable as pyramids and derivative transaction seem more opaque. In addition, pyramids create less liquid markets for the cash flow rights of the firm (Becht, 1999). On the other hand, discouraging these forms of deviations, while in

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[38] This 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.

[39] The 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.

principle possible, may impair their other important functions. As mentioned in the introduction, conglomerate structures may create internal markets that substitute for missing institutions and external markets plagued by frictions (Khanna and Yafeh, 2006). Similarly, derivative transactions improve risk-sharing among shareholders, speculative price discovery and market liquidity.

The above reservations against mandating one share - one vote do not imply that there should be no limitations on the extent or methods of deviating from the proportionality principle. Even if no single structure ought to be mandated, some harmonization across different jurisdictions is desirable if this increases market transparency or if regulatory competition impairs the emergence of socially optimal rules (Bebchuk and Ferrell, 1999; Monks and Minow, 1995). For instance, states that compete to attract incorporations or want to keep national champions under domestic control may bias their legislation in favor of corporate insiders. In any case, many national differences seem to be largely a matter of formality: All types of shares with differential voting rights serve the common purpose of separating cash flow rights and voting rights.

In addition, regulating dual-class recapitalizations or other midstream changes in the security-voting structure that dilute the voting rights of existing shareholders may help overcome commitment problems. For instance, one could allow dual-class recapitalizations only when they do not weaken the voting rights of existing shareholder groups. This would enable dominant shareholders to raise additional funds without having to surrender control, while preventing any consolidation of control at the expense of existing shareholders.

Finally, the verdict in the case of voting and ownership ceilings, priority shares that empower corporate insiders, and depositary certificates is less ambiguous. These lock-in mechanisms 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.

VIII   Concluding Remarks

The impact of deviations from one share - one vote on the outcome of takeover bids crucially depends on the context, notably on the ownership structure. For dispersedly held firms, no specific security-

voting structure is in general most conducive to an efficient control allocation. When several bidders compete, one share - one vote always allocates control to the most efficient bidder. In the absence of bidding competition, non-voting shares mitigate the free-rider problem, thereby promoting takeover activity. In either case, the socially optimal structure diverges from the structure that target shareholders prefer.

Outside takeovers, there appears to be no role for the security-voting structure in widely held firms. In the presence of an outside blockholder, leveraging her voting power can enhance the efficacy of monitoring. The verdict for lock-in mechanisms, such as depositary certificates, voting restrictions and priority shares, is less ambiguous. They insulate managers from both takeovers and effective shareholder monitoring.

For firms with a controlling shareholder, one share - one vote promotes value-increasing control transfers and deters value-decreasing control transfers more effectively than any other structure, but does not ensure an efficient control allocation in general. Furthermore, concentrated voting power protects the insider from the disciplinary effect of hostile takeovers, and the small equity stake simultaneously provides little alignment with the minority shareholders. Hence, she has the power and the incentives to extract private benefits at the expense of the security benefits (share value).

Even so, private benefit extraction is not a compelling argument for restricting contractual freedom, unless there would be good reasons to believe that investors fail to anticipate the insider's opportunistic behavior. A more sound argument for regulatory intervention is the divergence between socially and privately optimal security-voting structures. Most importantly, entrepreneurs have a preference for controlling minority structures, even though they hinder an efficient reallocation of control. Accordingly, the rationale for mandating one share - one vote must be to weaken controlling shareholders, thereby increasing control contestability and promoting value-increasing takeovers. However, to evaluate the merits of this policy, one 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.

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