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A RENT-PROTECTION THEORY OF  
CORPORATE OWNERSHIP AND CONTROL

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Ownership and Control  
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### **ABSTRACT**

This paper develops a rent-protection theory of corporate ownership structure - and in particular, of the choice between concentrated and dispersed ownership of corporate shares and votes. The paper analyzes the decision of a company's initial owner whether to maintain a lock on control when the company goes public. This decision is shown to be very much influenced by the size that private benefits of control are expected to have. Most importantly, when private benefits of control are large - and when control is thus valuable enough - leaving control up for grabs would attract attempts by rivals to grab control and thereby capture these private benefits; in such circumstances, to preclude a control grab, the initial owner might elect to maintain a lock on control. Furthermore, when private benefits of control are large, maintaining a lock on control would enable the company's initial shareholders to capture a larger fraction of the surplus from value-producing transfers of control. Both results suggest that, in countries in which private benefits of control are large, publicly traded companies will tend to have a controlling shareholder. It is also shown that separation of cash flow rights and voting rights will tend to be used in conjunction with a controlling shareholder structure but not with a dispersed ownership structure. Finally, the paper analyzes why companies might make control partially contestable, as many US companies currently do by adopting antitakeover arrangements. The results of the paper are consistent with the available evidence, can explain the observed patterns of corporate ownership, and yield testable predictions for future empirical work. The analysis also implies that a corporate law system that effectively limits private benefits of control can produce more efficient choices of ownership structure.

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## I. INTRODUCTION

This paper develops a rent-protection theory of corporate ownership structure – and in particular, of the choice between dispersed and concentrated ownership of corporate shares and votes. The proposed theory shows how the size of private benefits of control influences the choice of ownership structure. When private benefits of control are large, and when control is thus valuable enough, leaving control up for grabs would attract attempts to grab control by rivals seeking to capture these private benefits. In such circumstances, to preclude a control grab, founders of companies that take them public will tend to maintain a lock on control. The theory can explain the observed patterns of corporate ownership around the world and within countries, is consistent with the existing evidence, and yields many testable predictions for future work. Furthermore, the theory has policy implications for public policy toward corporate governance and ownership structure.

Corporate structures that have and do not have a controlling shareholder are different in critical ways. In companies with dispersed shareholdings, control is "contestable" in that a rival can seek to wrest control from the incumbent against its will. In contrast, when a company has a controlling shareholder, control is not contestable but is rather "locked" -- control of the company cannot be obtained against the incumbent's will but only through negotiations with the incumbent. This basic choice, between structures in which control is and is not contestable, is the one on which this paper seeks to shed light.

A common observation, and one that has been receiving growing attention by researchers (see, e.g., the survey by Shleifer and Vishny (1997)), is that the incidence of concentrated and dispersed ownership varies greatly across countries around the world. This is the case even among countries in a similar stage of economic development. Whereas dispersed ownership is the dominant form in the United States and the United Kingdom, control blocks are dominant in the countries of continental Europe.<sup>1</sup>

LaPorta, Lopez-de-Silanes, and Shleifer (1999) have recently completed an important empirical study comparing corporate ownership structure around the world. One finding of their research is that there is a connection between the presence of controlling shareholders and the strength of the legal rules protecting public investors: Controlling shareholders are common when investor protection is weak. Another finding is that, in countries in which

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<sup>1</sup> See, e.g., Becht and Roel (1999), Bianchi, Bianco, and Enriques (1997), Bloch and Kremp (1997), Franks and Mayers (1997), and Zingales (1994).

controlling shareholders are common, such controllers often maintain control while retaining substantially less than a majority of the cash flow rights; this is done through the use of stock pyramids, cross-holdings, and dual-class stock. The theory developed in this paper sheds light on both of these findings.

The model developed in this paper considers an owner of a company who initially owns all of its shares and now takes the company public. The owner makes a choice between (i) a controlling shareholder structure (CS) in which control is uncontestable, and (ii) a structure with dispersed ownership and without controlling shareholder (NCS) in which control is contestable. This choice of structure might affect the future cash flows to shareholders and the private benefits of control to the company's manager -- and thus also the sum of these two, which is the total value that will be produced by the corporation.<sup>2</sup>

Sections II and III model this choice, first using a very simple setup (Section II) and then a more general one (Section III). They show how, when private benefits of control are large, fear of a control grab might lead the owner to maintain a lock on control and choose a CS structure. While being more efficient is a necessary condition for an NCS structure to be chosen, it turns out not to be a sufficient condition. The reason for this is that setting an NCS structure does not ensure that the company remain in an NCS structure. A rival might seek to wrest control by acquiring a controlling block through market purchases or a takeover bid. When private benefits of control are large enough – and when control is thus valuable enough – an initial setting of an NCS structure will create a very tempting target for potential grabbers of control. Under such circumstances, an initial setting of an NCS structure will not be a stable equilibrium; the initial setting will likely revert eventually to a CS structure following the acquisition of a control block by a rival manager or, in a defensive move to prevent such an acquisition, by the incumbent manager. And when an NCS structure can be expected to unravel in this way, it would not be chosen to begin with. Thus, when private benefits of control are large, owners might choose a CS structure, notwithstanding some efficiency advantages that an NCS structure could have, in order to maintain a lock on control.

Section IV extends the basic analysis of the preceding sections. While Sections II and III assume that the owner is going to choose a one-share, one-vote structure, Section IV

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<sup>2</sup>A companion paper (Bebchuk (1999)), which is described in Section VII, analyzes post-IPO choices between CS and NCS structures. The results of that paper reinforce the conclusions of this paper concerning the connection between large private benefits of control and CS structures.

allows for the possibility of separating voting rights from cash flow rights through the use of stock pyramids, dual-class stock, and cross-holdings. It is shown that separation of cash flow rights will generally not be used in conjunction with an NCS structure. While the well-known models of Grossman and Hart (1988) and Harris and Raviv (1988) focus on the situation of two classes of stock with dispersed ownership in both, this situation is indeed quite rare (see Nenova (1999)), and the results of Section IV can help explaining why this is the case.<sup>3</sup> It is also shown that, as is consistent with the evidence, separation of cash flow rights from votes might often be used in conjunction with CS structures. When the size of control benefits makes it desirable to maintain a lock on control, separating votes from cash flow rights might enable the owner to maintain such a lock without incurring large risk-bearing costs or liquidity costs; in such cases, CS structures with separation of votes and cash flows might be used despite some significant efficiency drawbacks that they have.

Section V develops another extension of the basic analysis. While the preceding Sections assume that all managers and controllers are alike, Section V allows for the possibility that managers that can produce higher value might arrive – and that a transfer of control might thus produce some efficiency gains. Introducing this consideration turns out to strengthen the identified connection between large private control benefits and CS structures. When the levels of private benefits of control are large, an initial choice of a CS structure would enable the company's initial shareholders (whose interests are internalized by the initial owner) to capture a larger fraction of the surplus created by a value-increasing transfer of control.

The identified connection between corporate ownership structures and the size of private control benefits can explain the different routes pursued by founders and initial owners of companies in different countries. In the United States, founders of companies that take them public commonly choose a one-share, one-vote structure, avoid using pyramids or cross-holdings, and pursue a route that relinquishes, at least over time, their grip on control (see, e.g., Bukspan, 1995). The reason why American controllers act in this way under the proposed theory is that, in the United States, private benefits of control are relatively small. Consequently, when an NCS structure is more efficient, the fear of leaving control up for grabs will generally not deter a US founder from choosing such a structure. In contrast, in many other countries in which private benefits of control are large, say, Italy, company

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<sup>3</sup> The explanations given by Grossman-Hart (1988) and Harris-Raviv (1988) for this phenomenon focus on the possibility of differences between incumbents and rival managers. Our model shows that separation of cash flow rights and votes will be unlikely to be used in NCS structures even in the basic case in which alternative managers are expected to be similar in terms of the cash flows and

founders elect to lock control in their hands when going public (see, e.g., Bianchi, Bianco, and Enriques (1997)). To this end, controllers in many other countries often set up structures that enable them to maintain a grip on control (see, e.g., Holmen and Högfeltd (1999)) – even if the structures needed to maintain this lock on control involve substantial costs due to reduced incentives or increased tax payments.

Section VI discusses more fully the positive implications of the proposed theory. In addition to its implications for the variance in use of CS and NCS structures in different countries, the theory also has implications for differences among companies within the same country. The theory can also help explain why countries with larger levels of private control benefits have fewer public companies. Finally, the theory also explains why CS structures with radical separation between votes and cash flows is not used in NCS structures. The implications of the theory are shown to be consistent with the existing empirical evidence and to yield many testable predictions for future empirical work.

Section VII discusses other theories concerning the connection between legal rules and ownership structures. Because legal rules might affect such structures through more than one channel, the proposed rent-protection theory can be complementary to these other theories. It is explained, however, that there are aspects of existing ownership patterns which other theories do not explain and which the proposed theory can explain.

Section VIII discusses policy implications. The analysis identifies an important benefit that a country can derive from creating a corporate law system that imposes effective constraints on the extraction of private benefits of control. The analysis thus adds to the strength of the case for having such a system.

Finally, before Section X's conclusion, Section IX pursues another important extension of the analysis. Much of the paper's analysis focuses on the two "pure" cases in which control is completely contestable or completely uncontestable. But there are also cases of "partial" contestability – in which the incumbent managers, while not having a complete lock on control, are partially protected from replacement against their will. Partial contestability can arise when the incumbent manager has a large plurality of the corporate votes and/or is protected by an antitakeover arrangement. Indeed, in recent years, many American public companies have set up partially contestable structures by adopting various antitakeover measures (Coates (1998), Daines and Klausner (1998) and Field (1999)). Section VIII therefore provides an analysis of the functions that partial contestability can

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private benefits produced under their control.

play. This analysis can explain why antitakeover provisions are common in IPOs and provides testable predictions concerning the types of companies that will be most likely to adopt such measures.

## II. A SIMPLE MODEL OF THE CHOICE BETWEEN CS AND NCS

We will start our analysis by considering a simple model that will be used to isolate, in a simple setup, the potential value of maintaining a lock on control. We will gradually drop the model's simplifying assumptions and show that its conclusions hold more generally.

The sequence of events in the model is as follows. At  $T=0$ , an owner-manager of a company, denoted by  $I$ , takes it public and chooses its ownership structure. Subsequent events will determine whether  $I$  will remain the company's manager. At  $T=1$ , rival managers might emerge, which might or might not lead to a change in the manager's identity and/or the ownership structure. Finally, at  $T=2$ , the company operates and all value is realized and distributed. Our assumptions about each of the stages are detailed below.

### A. The Going Public at $T=0$

The initial owner  $I$  initially owns all shares of the company. At  $T=0$ ,  $I$  sells some of his shares in the firm to the public but remains as the company's manager.

The public investors, being diversified, are assumed to be risk-neutral. As is conventional, it is assumed that the market for shares is perfectly competitive, that public investors thus pay for the shares exactly the value of what they will get, and that  $I$  therefore internalizes fully the impact that its ownership structure choices will have on the public investors buying shares in the IPO.<sup>4</sup>

Prior to taking the company public, the owner chooses its ownership structure. Specifically, the owner makes a choice between (i) a controlling shareholder structure (CS), and (ii) a structure without a controlling shareholder (NCS). The critical way in which CS

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<sup>4</sup> While the model considers explicitly the situation in which the owner sells some of his shares in the firm and pockets the proceeds, it also covers the situation in which the company issues shares and puts the proceeds in its coffers. The reason for this is that the situation in which the company issues shares for a capital  $K$  is equivalent to a situation in which the owner first borrows  $K$ , puts  $K$  in the company, and then sells shares that he has for an amount  $K$  and covers his loan.

and NCS structures differ from each other concerns whether corporate control is contestable or uncontestable.

What defines a (pure) CS structure is that control is not contestable but is rather locked in the hands of the controller-manager. The most common way to establish a CS structure -- and the one that we assume *I* will use if CS is chosen -- is to have *I* own half or more of the corporate votes. However, note that, as will be discussed in detail when antitakeover arrangements are considered, any arrangement that locks control in the hands of *I* will amount to a CS structure. Thus, for example, a charter provision that gives *I* the power to manage the company forever or that makes *I*'s ouster prohibitively costly to entertain would amount to establishing a CS structure.

What defines a (pure) NCS structure is that control is completely contestable. Thus, an NCS structure implies that corporate votes are sufficiently divided among shareholders unaffiliated with *I*, and there are no anti-takeover arrangements that give *I* an advantage over rivals in a contest over control.

The discussion above makes it clear that, in addition to the pure cases of complete contestability and uncontestability, there is a continuum of cases in between in which control is partly contestable. For example, when *I* does not have a majority of the votes, control might only be partially contestable if *I* still owns a substantial block of votes. Alternatively, when *I* does not have such a significant block, control might still only be partially contestable if there is an antitakeover arrangement (say, a poison pill) that, while not precluding a hostile takeover, makes it more difficult. Initially, to gain understanding of what is at stake, we will focus on the choice between complete contestability (pure NCS) and complete uncontestability (pure CS). Section VIII will extend the analysis to consider the intermediate cases of partial contestability.

Another simplifying assumption that we will make initially, and will drop later on, is that *I* will not separate cash flow rights from votes. This assumption will be relaxed in Section IV, which will extend the analysis to allow for the possibility of separating votes and cash flow rights through dual-class stock, stock pyramids, and cross-holdings. For now, however, it is assumed that the owner sets a one-share, one-vote structure and sells to the public the same fraction of the cash flow rights and the voting rights.

Given that the structure is one-share, one-vote, adopting a CS structure means that the owner retains half or more of the company's shares. For now (this, again, will be relaxed later), let us assume that in the event that CS is chosen *I* will keep exactly half of the shares.



In contrast, adopting an NCS structure (with complete contestability) would involve the owner's selling all of the company's shares at  $T=0$  and staying as a "professional manager." If the company remains under NCS at  $T=2$ , it is expected that  $I$  (or whichever manager will serve then) will then get some executive compensation that will provide him with incentives.<sup>5</sup>

#### B. The Possible Change in Control at $T=1$

Immediately following the company's going public, market trading commences and a stock market price is set. At  $T=1$ , an alternative manager  $N$ , and possibly more than one alternative manager, emerge and might seek to replace  $I$ . At this stage, we shall assume that all managers are identical -- in that, if they end up managing the firm, they will all produce the same cash flows and private benefits under any ownership structure. Section V will drop this assumption and allow for the possibility that a rival which could produce higher cash flows or private benefits might emerge.

How a rival might be able to replace  $I$  will depend on whether CS or NCS was initially set at  $T=0$ . If CS was chosen at  $T=0$ , and if  $I$  thus has a lock on control, then control cannot be wrested by purchasing shares from public investors; the only way to replace  $I$  is by concluding an agreement with  $I$  to purchase its controlling position. Note that, since all managers are for now assumed to be identical, there will be no reason for a control transfer to be negotiated if CS is set at  $T=0$ ; for the value of the control block will be the same under all buyers. Thus, in the basic model, if CS is initially chosen,  $I$  will certainly remain as the manager at  $T=2$ .

In contrast, if NCS was initially chosen at  $T=0$ , then the rival  $N$  might seek to gain control by purchasing a majority of the company's shares through a takeover bid (or, alternatively, open-market purchases). If a rival makes a bid, the incumbent manager and other rivals might choose to over-bid. As will be explained, the conclusions of the analysis will be the same under a sequence in which the arrival of  $N$  is observed by  $I$  and  $I$  has the option to be the first to make a bid with  $N$  (or other rivals) having the opportunity then to

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<sup>5</sup>The executive compensation scheme can be set by the owner when the company goes public. However, for the company to be under a pure NCS, this scheme must provide the manager with payment only in the event that he will actually work at  $T=2$ . A scheme that would provide  $I$  with some payment at  $T=2$  regardless of whether  $I$  remains as manager would create a "golden parachute" that would have an antitakeover effect and thus would imply that the corporate control would not be completely contestable. See the discussion of antitakeover arrangements later on.

over-bid. The cost of making a bid is  $C_T$ .

### C. The $T=2$ Realization of Value at $T=2$

Finally, at  $T = 2$ , the company will operate. At the end of its operations, and before the curtain goes down, all value will be realized and distributed, with cash flows going to shareholders and private benefits going to whoever, whether  $I$  or  $N$ , is the manager at  $T=2$ .

As will be discussed later on, there is a large literature that examines various efficiency effects of the ownership structure choice. To focus on the factor that this paper identifies as influencing ownership structure choices, we shall initially abstract from these other effects by assuming that cash flows and private benefits will be the same at  $T=2$  under both CS and NCS. Section III will drop this assumption and analyze the identified factor in the context of a more general model in which cash flows and private benefits might depend on the choice between CS and NCS.

Specifically, it will be assumed in this basic model that, under either CS or NCS, the private benefit to whoever is the manager at  $T=2$  will be  $B$ .<sup>6</sup> (Section III will allow for  $B$  to be different under CS and NCS.) The private benefit  $B$  that the manager at  $T=2$  will get includes all those elements of value that will flow to the manager by virtue of its control. These benefits include benefits from self-dealing transactions, taking corporate opportunities, trading on inside information, taking excessive executive compensation or perks, and so forth.

Note that  $B$  is likely to be a function of the country's legal system -- including not only its rules and doctrines but also its systems of implementation and enforcement. For example, legal regimes differ considerably in the extent to which they constrain profits from self-dealing or taking of corporate opportunities.<sup>7</sup> The term lax corporate system shall refer throughout to a system that enables the extraction of large private benefits of control.

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<sup>6</sup> Assuming that  $B$  is not a certain amount but rather a random variable would complicate notations but would not change the conclusions of the analysis.

<sup>7</sup>See, e.g., Enriques (1998) for a comparative analysis of the law governing self-dealing transactions, indicating that the regulation of self-dealing has more bite in the U.S. and the UK than in other countries. For a general analysis of the variance among countries in the constraints on controllers' ability to extract private benefits, see LaPorta, Lopez-de-Silanes, Shleifer, and Vishny (1999).

To be sure, it might be suggested that, even if a country has a lax corporate system,  $I$  could at  $T=0$  set a low level of  $B$  by adopting appropriate charter provisions. But there are substantial limits on the extent to which charter provisions can substitute for an effective corporate system (Bebchuk and Roe (1999)). A substantial reduction of private benefits might require an effective system for interpreting, implementing, and enforcing corporate arrangements, and such a system might not be possible to be provided by charter provisions.<sup>8</sup>

The extraction of private benefits  $B$  might lead to efficiency costs. In such a case, the extraction of private benefits would lower total value to below what it would otherwise be.<sup>9</sup> The analysis throughout allows for both the possibility in which the extraction is a pure transfer and the possibility that extraction dissipates some value.

As to cash flows at  $T=2$ , they will be assumed to be  $Y + \varepsilon$ , where  $\varepsilon$  is a zero-mean noise with a normal distribution and variance  $R$ . Again, for now we assume that  $Y$  is the same under both CS and NCS. Section III will allow for  $Y$  to depend on the choice of ownership structure.

The only efficiency effect that the choice between CS and NCS has in this simple model is on risk-bearing costs. Unlike the diversified public investors,  $I$  is assumed to be risk-averse, which means that holding a block under CS imposes some risk-bearing costs on  $I$ .<sup>10</sup> Without loss of generality, and to make a convenient notation, we shall assume that  $I$  has the exponential utility function used by Holmstrom and Milgrom (1987), and that the value (certainty equivalent) it attaches to a normally distributed random variable  $X$  is thus equal to  $E(X) - \mu \text{Var}(X)$ , where  $\mu$  is a parameter reflecting  $I$ 's degree of risk aversion. This implies that the value to  $I$  of getting half of the firm's cash flow is  $Y/2 - (1/2)^2 \mu \text{Var}(\varepsilon) = Y/2 - \mu R/4$ .

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<sup>8</sup> Alternatively, it might be suggested that the owner could set  $B$  at the level of another country by incorporating in that country. But such incorporation might involve regulatory and tax costs, which is why most companies around the world do not resort to it. Finally, it is assumed that, while reputational mechanisms might help, they cannot, say, enable an Italian company to commit to the same  $B$  as, say, an American company.

<sup>9</sup>The possibility that larger private benefits involve more inefficiency costs is discussed by Bebchuk (1994) and Burkhardt, Gromp, and Panunzi (1998).

<sup>10</sup> The assumption that it is costly to hold large fraction of cash flow rights can be motivated either on the basis of risk-aversion costs -- as we do here and is done by Admati, Pfkeiderer, and Zechner (1994) -- or alternatively on the basis of liquidity costs, a la Bolton and von Thadden (1998).

Let us assume for a moment that, after going public, neither the ownership structure nor the manager could be expected to change. In such a case, in our simple model,  $I$  will choose an NCS structure to save the risk-bearing costs involved in a CS structure. For in such a case,  $I$  could sell all the shares to public investors for  $Y$ , get  $B$  at  $T=2$ , and thus end up with a total value of

$$V_{\text{NCS}} = Y + B.$$

In contrast, if  $I$  chooses a CS structure and thus sells only half of the shares,  $I$  will get  $Y/2$  for half of the shares, retain cash flow rights with a value to  $I$  of  $Y/2 - \mu R/4$ , and capture  $B$  at  $T=2$ , thus ending up with a total value of

$$V_{\text{CS}} = Y/2 + (Y/2 - \mu R/4) + B = Y + B - \mu R/4 < V_{\text{NCS}}.$$

Thus, if  $I$  were to assume that there would be no change in management or ownership structure at  $T=1$ , then  $I$  would always choose NCS in this simple model. However, an initial choice of NCS does not imply that an NCS structure will be retained through  $T=2$ . With an NCS structure, a rival might seek to wrest control at  $T=1$ . As a result, as we shall see below, there are circumstances under which  $I$  can expect that an initial choice of an NCS structure will not be maintained at  $T=1$ .

#### D. The Conditions under which an NCS structure Cannot be Maintained

*Proposition 1:* An NCS structure chosen at  $T=0$  will not be maintained at  $T=1$  if and only if

$$(1) \quad (Y/2 - \mu R/4) + B - C_T > Y/2.$$

*Remark:* The intuition for the proposition is as follows. When inequality (1) holds, there can exist no equilibrium in which an NCS structure is maintained. For if an NCS structure were maintained, then the value that half of its shares will have to public investors will be  $Y/2$ . In contrast, the value of a 50% control block under a CS structure will be  $Y/2 - \mu R/4 + B$ . Thus, when condition (1) holds, putting together half of the shares trading on the market will create a block that exceeds the current capitalization of the shares under NCS by more than the transaction costs involved in a bid. Because the shares are worth less when dispersed than when put together, their being dispersed under NCS would not be a stable equilibrium. An NCS structure, if it were to be chosen, would revert to a CS structure when  $N$  acquires, or in a defensive move  $I$  acquires, a control block.

*Proof:* Suppose that the above condition is satisfied, and let us show that the company will revert to CS structure following the acquisition of a block of half of the shares by  $N$  or  $I$ .

Facing a bid for half of their shares, and assuming that no higher bid is made, the shareholders will tender their shares if the bid price  $P$  offered for half of the shares satisfies  $P > Y/2$ . As to a potential bidder, a 50% control block would have a value  $Y/2 - \mu R/4 + B$  and would involve transaction costs of  $C_T$ . Thus, assuming the bid is going to succeed, a bid at  $P$  would be made if and only if  $P$  satisfies  $P < Y/2 - \mu R/4 + B - C_T$ . Thus, assuming that a bid at  $P$  is not going to be superseded by a higher bid, a bid that would both attract shares and not lose money would exist if and only if condition (1) is satisfied.

Which price  $P$  will be offered by  $N$  will depend on whether  $N$  faces the possibility of a competing bid by  $I$  (or by some other rival). If a competing bid is not possible (because  $I$  is cash constrained and no other rivals are there),  $N$  will bid only  $Y/2$ , the lowest price needed to attract tenders. But if  $N$  faces the possibility of a competing bid because  $I$  is not cash constrained (or, alternatively, because there are other rivals), then  $N$  will bid  $Y/2 - \mu R/4 + B - C_T$ , which is the lowest price that others will not over-bid.

Finally, note that the conclusions will be the same if it is assumed that  $I$  gets the first chance to bid. In this case, to preempt a bid from  $N$ ,  $I$  will make a bid for half of the shares for a price of  $Y/2 - \mu R/4 + B - C_T$  and acquire a control block.

Thus, we can conclude that, whether or not  $N$  faces the possibility of a competing bid (and whether  $N$  or  $I$  can move first), if condition (1) holds, an initial choice of NCS will not be maintained. The difference between the two scenarios, the one with competing bids and the one without them, is only with respect to the price at which the control block will be bought. •

*Remark:* The proof proceeded by assuming that, if  $N$  is to obtain a control block, it will be done through a tender offer. But the result does not depend on the economy having a developed takeover market or mature takeover procedures. The conclusion will be the same if rivals have to use open-market purchases to accumulate a controlling block. Here, again, when condition (1) is satisfied, an NCS structure cannot be an equilibrium. If it were, the stock market capitalization of the shares would be  $Y$ , and  $N$  would profit from accumulating through open-market purchases at this price a 50% block. Also, again, if  $I$  gets to move first,  $I$  itself might acquire a control block through open-market purchases. But one way or the

other, an equilibrium with an NCS structure cannot exist, because the market price of  $Y$  in such a structure will attract  $N$  to grab control.

#### E. Anticipated Unraveling and the Initial Choice

*Proposition 2:* A CS structure will be chosen at  $T=0$  if and only if condition (1) holds.

*Remark:* The intuition behind the result is as follows. When the unraveling condition of Proposition 1 holds, it would be pointless – indeed counterproductive – for the owner to set initially an NCS structure: the company is destined to end up in CS anyway. Setting NCS initially would just imply that the company would end up in CS anyway. But it would do so in a way that would leave  $I$  with less value (compared with setting CS to begin with) because some value will be spent on transaction costs (and possibly also on profits of the rival). When the unraveling condition holds, control is simply too valuable to be left up for grabs. If it were so left, it would be grabbed by a rival or (defensively) by the incumbent. So the owner will do better by setting CS directly rather than using a circuitous route that would involve transaction costs (and in addition might enable a rival to take a cut).

*Proof:* If condition (1) is met, then, by Proposition 1, even if an NCS were initially set, the company would revert to CS at  $T=1$ . Thus, the total value that would be produced at  $T=2$  would still be  $V_{CS}$ . But  $I$  and the initial shareholders (whose interests  $I$  internalizes) would be able to capture less than  $V_{CS}$ . How much less would depend on whether  $N$  faces the possibility of a competing bid. If  $N$  does not face such a bid, and purchases a control block for  $Y/2$ , then  $I$  and the initial shareholders would capture  $V_{CS}$  minus the profit of the rival (which would be  $B - C_T - \mu R/4$ ). If  $N$  does face the possibility of a competing bid, then the rival would make no profit, and  $I$  and the initial shareholders would capture  $V_{CS} - C_T$ . In contrast, an initial setting of CS would provide  $I$  and the initial shareholders with a value of  $V_{CS}$ . Thus, if condition (1) in the proposition is satisfied,  $I$  will choose a CS structure. •

*Remark:* A brief comment is due on the implausible case in which  $C_T = 0$ . In this case, when condition (1) is satisfied, an NCS structure chosen at  $T=0$  will not be maintained at  $T=1$ . However, in this case,  $I$  will be indifferent between choosing an NCS and CS as long as  $N$  faces competition at  $T=1$ . In such a case, an initial choice of NCS will costlessly revert to CS at  $T=1$ . Consequently, there will be no loss from going to CS directly at  $T=0$  or through reversion from NCS at  $T=1$ . The important point will remain, it will quickly revert to CS and operate in it at  $T=2$ .

## F. The Importance of the Size of Private Benefits of Control

As Proposition 2 indicates, the larger  $B$ , the more likely is  $I$  to decide to maintain a lock on control.

*Corollary:* A CS structure will be chosen if and only if  $B$  is sufficiently large or, specifically, if and only if

$$B > \mu R/4 + C_T.$$

Thus, in the situation considered here, if the company operates in a low- $B$  environment (country or industry),  $I$  will elect to avoid risk-bearing costs by choosing NCS without fear that its choice will attract a control grab. To illustrate, consider companies going public in the US, where the evidence indicates (see Barclay and Holderness (1989)) that private benefits are relatively small. To get the benefits of diversification, founders might well elect to give up a lock on control.

In contrast, if the company operates in a high- $B$  environment (country or industry), the fear of a potential control grab would lead  $I$  to retain a lock on control and forego the saving in risk-bearing costs that an NCS structure would enable. To illustrate, consider companies going public in Italy, where the evidence indicates private benefits are relatively large (see Zingales (1994)). The founders of such companies who take them public might elect to leave control up for grabs because it is too valuable.

## G. Why Not Establish an NCS with a Prohibition on a Takeover ?

It might be asked why the owner will not establish an NCS structure with a prohibition on takeovers. An arrangement might be established that prohibits the acquisition of a control block, or makes it conditional on  $I$ 's consent. With such an arrangement, so the argument goes, an NCS structure will be maintained until  $T=2$ , and  $I$  will thus capture a value of  $V_{NCS}$ .

Now the first thing to note is that, with such an arrangement, the adopted structure should actually be regarded not as an NCS structure but rather as a particular kind of a CS structure. For anything that gives  $I$  a lock on control makes the structure a CS structure.

It might be further asked, however, whether this type of CS structure might not be the best one for  $I$  to adopt. In the simple model of this section it might indeed be the best,

because it would combine a lock on control with low holding of cash flow rights (and thus small risk-bearing costs by  $I$ ). Another way to combine a lock on control with a low holding of cash flow rights, which will be discussed later on, is to separate cash flow rights from votes and to give  $I$  a majority of the corporate votes but only a small fraction of the cash flow rights. In the simple model of this section, such CS structures would not have an efficiency disadvantage compared with an NCS structure. But once we allow for ownership structure to affect incentives, as we do in subsequent sections, such CS structures might have an efficiency disadvantage compared with an NCS structure. The reason is that, when the manager has little or no cash flow rights, it is important for incentive reasons to have the threat of ouster, which exists under an NCS structure but not under the considered types of CS structures. Thus, once we allow such incentive effects, as we will do in the next two sections, the total value produced under such CS structures might be less than that of an NCS structure. But, as will be shown, such structures (or some other CS structures) might still be adopted if the magnitude of private control benefits makes it important to keep a lock on control.<sup>11</sup>

### III. A MORE GENERAL MODEL

Let us now extend the analysis of the simple model and allow for the ownership structure to affect  $Y$  and  $B$ . For now (until section IV) let us continue to assume that  $I$  will choose a one-share, one-vote structure. However, we shall allow  $Y$  and  $B$  to depend on whether CS or NCS is chosen.

Specifically, if NCS is chosen and maintained, let us assume that the expected value of cash flows will be  $Y_{\text{NCS}}$  (the cash flows being  $Y_{\text{NCS}}$  plus the random, zero-mean disturbance  $\varepsilon$ ) and private benefits of control will be  $B_{\text{NCS}}$ . Let  $V_{\text{NCS}} = Y_{\text{NCS}} + B_{\text{NCS}}$  denote the total value that the company will produce operating under NCS.

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<sup>11</sup> Another possible arrangement that might be considered is a “golden parachute” under which  $I$  is promised to get an amount  $B$  if it is replaced. Such an arrangement creates a situation of partial contestability: it does not completely prevent a hostile takeover but only makes it more costly ( $B$  will be taken from the firm’s cash flow if a rival takes control but not if the incumbent continues). In the simple model of this section, such an arrangement of partial contestability would always get the maximum total value of  $Y + B$ . However, once incentive effects are introduced, as will be done later, such a golden parachute arrangement might create a lower total value than NCS because it will reduce the incentive of the incumbent to perform well. Antitakeover arrangements will be discussed in detail in Section IX.



If a CS structure is chosen, let us denote by  $\alpha \geq 0.5$  the fraction of the shares that  $I$  chooses to retain. Assuming that the company operates under such a CS structure at  $T=2$ , the expected value of cash flow will be  $Y_{CS}(\alpha)$  (the cash flows being  $Y_{CS}(\alpha)$  plus the random zero-mean disturbance  $\epsilon$ ); and the private benefits of control will be  $B_{CS}(\alpha)$ . Continuing to make the same assumption as before concerning  $I$ 's risk-aversion, the value to  $I$  of a control block under such a structure is  $Y_{CS}(\alpha) - \alpha^2 \mu R + B_{CS}(\alpha)$ .

Let  $V_{CS}(\alpha) = Y_{CS}(\alpha) - \alpha^2 \mu R + B_{CS}(\alpha)$  denote the total value of a CS structure with the controller holding a fraction  $\alpha$ . Let  $\alpha^*$  denote that value of  $\alpha$  in the range  $(0.5, 1)$  which maximizes the value of  $V_{CS}$ . Thus,  $V_{CS}(\alpha^*)$  is the highest total value that can be produced under a CS structure.

Either  $V_{NCS}$  or  $V_{CS}(\alpha^*)$  might be higher. Compared with a CS structure, an NCS structure might have both advantages and disadvantages which have been already subject to much study by the literature. Compared with NCS, potential advantages of CS include: (i) the controller's holding a large fraction of cash flow rights might provide it with good incentives (Jensen and Meckling (1976), Burkhart, Gromb, and Panunzi (1998)); (ii) the controller's not facing the threat of an ouster might prevent it from being pressured to distort its choices between short-term and long-term projects (see, e.g., Stein (1989) and Bebchuk and Stole (1993)); and (iii) the controller's secure position might give it better incentives to make investments that increase the controller's firm-specific human capital or its private benefits of control (Burkhart, Gromb, and Panunzi (1997), Pagano and Roel (1998)). Compared with NCS structure, potential disadvantages of CS include: (i)  $I$ 's security in its job might (the freedom from the threat of ouster) might also have an adverse effect on its decisions regarding effort and private benefits (Scharfstein (1998), Morck, Shleifer and Vishny (1988), Fluck (1998)), (ii)  $I$ 's large fraction of cash flow rights might involve significant risk-bearing costs and liquidity costs (Admati, Pfleiderer and Zechner (1994), Bolston and von Thadden (1998)), and (iii)  $I$ 's large fraction of cash flow rights might reduce liquidity and make the market price a less informative signal of value (Holmstrom and Tirole (1993)). This list of effects is not meant to be exhaustive.

The literature, which has focused on how  $V_{CS}$  and  $V_{NCS}$  compare, thus suggests that sometimes  $V_{CS}(\alpha^*)$  is higher and sometimes  $V_{NCS}$  is higher. Our main point will be that the choice between NCS and CS will not be determined solely by how  $V_{NCS}$  and  $V_{CS}(\alpha^*)$  compare with each other. Rather, it will also matter how large private benefits are as an element of total value.

*Proposition 3:* A necessary condition for an NCS structure to be chosen is that  $V_{NCS} > V_{CS}(\alpha^*)$ .

*Remark:* The intuition for this result is as follows. If the condition does not hold, and  $V_{CS}(\alpha^*)$  is the highest value that the company can produce,  $I$  will be able to capture this value by setting a CS structure with  $\alpha^*$ .

*Proof:* See the Appendix.

*Proposition 4:* A sufficient condition for an initial choice of an NCS structure not to be maintained at  $T=1$  is that

$$(2) \quad \alpha Y_{CS}(\alpha) - \alpha^2 \mu R + B_{CS}(\alpha) - C_T > \alpha \max(Y_{NCS}, Y_{CS}(\alpha)) \text{ for some } \alpha \geq 0.5.$$

*Remarks:* (1) The intuition for this proposition is as follows. If condition (2) is satisfied, then there can exist no equilibrium in which NCS is maintained at  $T=1$ . If NCS were to be maintained, then shares would have a value of  $Y_{NCS}$ . But then putting together shares constituting a fraction  $\alpha$  of all the shares would create a block with a value of  $\alpha Y_{CS}(\alpha) - \alpha^2 \mu R + B_{CS}(\alpha)$  which exceeds the existing capitalization of these shares plus the transaction costs involved in a bid. For the reasons explained in the Remark following Proposition 1, this would mean that an NCS structure would not be an equilibrium. (2) For reasons similar to those discussed in the context of the simple model, the conclusions will be similar if  $N$  has to resort to open-market purchases to obtain a control block.

*Proof:* See the Appendix.

*Proposition 5:* A necessary condition for an NCS structure to be chosen at  $T=0$  is that

$$(3) \quad \alpha Y_{CS}(\alpha) - \alpha^2 \mu R + B_{CS}(\alpha) - C_T < \alpha \max(Y_{NCS}, Y_{CS}(\alpha)) \text{ for all } \alpha > 0.5.$$

*Remarks:* The intuition behind this result is similar to the intuition behind the result in Proposition 2. When the unraveling condition of Proposition 4 holds, it would be pointless -- indeed counterproductive -- to set initially an NCS structure. Given that the company is destined to end up in CS anyway. Setting NCS initially would just involve extra transaction costs (and possibly letting a rival walk away with a profit) and thus would leave  $I$  with less value.

*Proof:* See the Appendix.

Thus far we have established that an NCS structure might not be maintained at  $T=1$  and, in such circumstances, will not be chosen at  $T=0$  to begin with. We now turn to note that such circumstances might occur even when  $V_{NCS}$  exceeds  $V_{CS}(\alpha^*)$ . To see this, we can rearrange the unraveling condition (2), and after some algebraic rearrangement, we get the following result.

*Proposition 6:* Even if  $V_{NCS} > V_{CS}(\alpha^*)$ , an NCS structure will be unstable and a CS structure will be chosen if for some  $\theta \geq 0.5$ .

$$(4) \quad [(1-\alpha)/\alpha] B_{CS}(\alpha) + B_{NCS} > [V_{NCS} - V_{CS}(\theta)] - \theta(1-\theta)\mu R - C_T/\alpha^* \quad ; \text{ and}$$

$$B_{CS}(\theta) > \theta^2\mu R + C_T.$$

A corollary of this result is that a CS structure will be chosen if the condition in the proposition holds for  $\alpha=\alpha^*$ . Thus, even if  $V_{NCS} > V_{CS}(\alpha^*)$ , a CS structure (with  $\alpha^*$ ) will be chosen if

$$(5) \quad [(1-\alpha^*)/\alpha] B_{CS}(\alpha^*) + B_{NCS} > [V_{NCS} - V_{CS}(\theta^*)] - \theta^*(1-\theta^*)\mu R - C_T/\alpha^* \quad ; \text{ and}$$

$$B_{CS}(\theta^*) > \theta^{*2}\mu R + C_T.$$

An important implication of this result concerns the impact of legal rules and the size of private benefits of control. The larger  $B_{CS}$  and  $B_{NCS}$ , and the larger the right-hand side, and the bigger the likelihood that CS will be chosen because NCS would not be stable.

#### IV. SEPARATING VOTES FROM CASH FLOW RIGHTS

Until now we have assumed that the company will have a one-share, one-vote structure -- that is, that cash flow and voting rights will go hand in hand, and that to have a majority of votes it will be necessary to have a majority of the cash flow rights. But cash flow rights and voting rights can be separated. This can be done, and is often done, by using arrangements such as dual class, stock pyramids, and cross holdings. Indeed, with an appropriate design of such arrangements, it is generally possible to have a lock on control with as few cash flow rights as is desired (see Bebchuk, Kraakman, and Triantis (1999)).

For concreteness, and without loss of generality, we will assume that the controller will create two classes of shares. Class 1 will have a fraction  $\gamma$  of the cash flow rights and all the voting rights. Class 2 will have the remainder of the cash flow rights and no voting rights. (The class with no voting rights can be created not only by issuing shares with formally lower voting rights, but also by creating a pyramidal structure and issuing shares in subsidiaries.) This general formulation includes one-share, one-vote as a special case ( $\gamma = 1$ ) and the case in which votes and cash flow rights are separated ( $\gamma < 1$ ).

The owner now must make two choices. The owner will choose  $\gamma$ . The owner also will choose between CS and NCS, with the contestability of control now depending on the ownership of the shares in class 1 (the class with voting rights). A pure CS structure would involve  $I$ 's holding at least half of the shares in class 1 (and thus half of the votes), whereas a pure NCS structure would involve  $I$ 's selling all the shares in Class 1.

For simplicity, the analysis below assumes that moving  $\gamma$  below 1 does not entail tax or transaction costs. In many countries, however, some common forms of separating cash flow rights from voting rights, such as stock pyramids and cross-holdings, reduce cash flows to shareholders, as cash flows are taxed more than once. I will therefore comment from time to time on how the presence of such costs affects the conclusions.

#### A. The effect on NCS Structures

*Proposition 7:* If an NCS will not be stable for  $\gamma=1$  (that is, with one-share, one-vote), then an NCS structure will also be unstable for any  $\gamma < 1$ . Furthermore, if an NCS will be stable for  $\gamma=1$ , an NCS structure with a given  $\gamma < 1$  might still be unstable.

*Remark:* The intuition for this result is that separating votes from cash flow rights makes control grabs easier, by enabling the grabber to put together a block with half or more of the votes while buying a smaller fraction of the cash flow rights. Therefore, using such separation in an NCS structure cannot make the structure more stable and might make it less so.

*Proof:* To gain control of the votes, a potential buyer of control must focus on purchasing shares in class 1, which are the ones with voting rights. Since the shares in class 1 have a fraction  $\gamma$  of the cash flow rights. Thus, to acquire control, a buyer must buy a fraction  $\alpha$  of the cash flow rights that is equal to  $0.5\gamma$  or more. Proceeding in the same way as we did in the proof of propositions 3 and 4, it is possible to establish that a sufficient condition for an

initial choice of an NCS structure not to be maintained at  $T=1$ , and thus not to be chosen to begin with, is that

$$\alpha Y_{CS}(\alpha) - \mu R + B_{CS}(\alpha) - C_T > \alpha \max(Y_{NCS}, Y_{CS}(\alpha)) \text{ for some } \alpha \geq 0.5\gamma.$$

And, clearly, moving from  $\gamma=1$  to  $\gamma<1$  can make this condition easier to satisfy and cannot make it harder to satisfy. •

The above result suggests that there is no reason to use  $\gamma<1$  in conjunction with an NCS structure. With an NCS structure, introducing  $\gamma<1$  does not produce benefits in terms of reducing risk-bearing or liquidity costs, because the manager does not hold a large block of cash flow rights in an NCS structure even without separation. And since separation might make things worse in terms of stability, there is no reason to use it.

Note that the well known models of dual-class structures by Grossman-Hart (1988) and Harris-Raviv (1988) focus on the situation in which both classes have dispersed ownership. However, such situations are quite rare: when two classes exist, the shares with superior voting rights are generally concentrated in the hands of a large shareholder (see Nenova (1999)). The result of this proposition sheds light on why this is the case.

## B. The Effect on CS Structures

*Proposition 8:* If a CS structure is to be chosen, then the owner might prefer to do it in conjunction with a separation between votes and cash flow rights. Consequently, allowing owners to separate votes from cash flow rights expands the set of cases in which CS will be chosen.

*Remark:* The intuition behind this result is as follows. When I wants to maintain a lock on control, separation might lead to a higher total value because it would reduce the risk-bearing costs (or liquidity costs) that holding the control block would impose on I. Because allowing separation might sometimes enable holding a lock on control less expensively, it expands the set of cases in which the controllers will choose to maintain such a lock.

*Proof:* Recall that, if I has a lock on control with a fraction  $\alpha$  of the cash flow rights, then the total value that I will capture is

$$V_{CS}(\alpha) = Y_{CS}(\alpha) - \mu R + B_{CS}(\alpha)$$

To have a lock on control,  $\alpha$  must be  $0.5\gamma$  or higher. Without separation, CS would require that  $\alpha$  be 0.5 or higher. But with separation, a CS structure could be accomplished with as small an  $\alpha$  as desired. As before, let  $\alpha^*$  denote that value of  $\alpha$  in the range  $[0.5,1)$  which maximizes the value of  $V_{CS}$ . And let  $\theta^*$  denote that value of  $\alpha$  in the range  $(0.,1)$  which maximizes the value of  $V_{CS}$ . Clearly,  $V_{CS}(\theta^*)$  is at least as high as  $V_{CS}(\alpha^*)$  and might be higher.  $V_{CS}(\theta^*)$  might be higher than  $V_{CS}(\alpha^*)$  because reducing  $\alpha$  reduces the risk-bearing costs  $\alpha^2\mu R$ . (The optimal  $\theta^*$  might also not fall below 0.5, to the extent that reducing  $\alpha$  has a negative effect (due to increasing moral hazard) on  $Y_{CS}(\alpha) + B_{CS}(\alpha)$ , in which case  $V_{CS}(\theta^*)$  will be the same as  $V_{CS}(\delta^*)$ ). If the owner chooses a CS structure, the owner will choose to separate cash flow rights from voting rights whenever  $V_{CS}(\theta^*)$  exceeds  $V_{CS}(\alpha^*)$ .

From the fact that  $V_{CS}(\theta^*)$  might sometimes exceed  $V_{CS}(\delta^*)$ , it follows that allowing separation between cash flow rights and voting rights might expand the set of cases in which CS will be chosen. •

This result is consistent with the existing patterns of ownership. LaPorta, Lopez-de-Silanes, and Shleifer (1999) report that, in countries in which CS companies are dominant, they are often characterized by substantial separation between cash flow rights and voting rights. In particular, they find that CS firms commonly use pyramidal structures.

## V. DIFFERENT MANAGERS

Thus far we have assumed that all managers are alike, which implies that there can be no efficiency reason for a transfer of control. Under this assumption, an initial choice of CS would not lead to a control transfer, but an initial choice of NCS, leaving control up for grabs, might lead to such a transfer. We now turn to the possibility that a rival that would be able to produce greater total value might arrive. In this case, a transfer of control could create a surplus. To study this issue, we will consider two scenarios -- one in which the superior rival has a higher  $Y$ , and one in which the superior rival has higher  $B$ . With respect to both cases, the question facing the owner choosing between CS and NCS is which structure will provide the initial shareholders with a larger fraction of the surplus created by a control transfer<sup>12</sup>. As will be seen, when private benefits are large, this consideration will favor a choice of CS, which will strengthen the tilt toward CS that large private benefits produce.

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<sup>12</sup> Zingales (1995), Bebchuk and Zingales (1996), and Israel (1992) examine how choices of initial structure affect the division of surplus in value-increasing transfers of control. But these papers have

To abstract from transaction costs issues, we shall assume that both a tender offer under NCS and a purchase of a control block under CS involve the same transaction costs of  $C_T$ . We shall also assume that these transaction costs  $C_T$  are not large enough to prevent efficient control transfers under either CS or NCS.

#### A. Rival with Higher $Y$

Suppose that it is expected that, at  $T=1$ , a new manager that can increase  $Y$  by  $\Delta Y$  will arrive. And suppose that, at  $T=0$ , it is only known what the distribution of  $\Delta Y$  will be. When such a superior manager emerges, control will be transferred to the new manager under either CS or NCS. But the initial choice of ownership structure will affect the fraction of the surplus  $\Delta Y$  that the rival will be able to make and the fraction that will be captured by  $I$  and the initial shareholders (whose interests are internalized by the owner at  $T=0$ ).<sup>13</sup>

##### 1. Initial Choice of CS

If the initial choice is CS, then a transfer of control will take place through negotiations between  $I$  and the new controller  $N$ . Applying the model of Bebchuk (1994) for sale of control blocks, and assuming equal bargaining power,  $I$  and  $N$  will split the appreciation in the value of the control block created by moving the control block from  $I$  to  $N$ . Consequently,  $N$  will capture a profit of  $\frac{1}{2}(\alpha\Delta Y - C_T)$ , and  $I$  and the other initial shareholders will end up with the rest of the surplus ( $(1-\alpha)\Delta Y - C_T$ ).

##### 2. Initial Choice of NCS

Here we need to distinguish, again, between the case in which the incumbent  $I$  can counter-bid and the case in which  $I$  cannot. If the incumbent cannot counter-bid, then  $N$  will bid  $\alpha[Y_{CS}(\alpha) + \Delta Y]$ , and  $N$  will thus make a profit of  $B_{CS} - \alpha^2\mu R - C_T$ . If the incumbent can

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not identified the sharp effect – which is the focus of the analysis below -- that large private benefits have on the choice between CS and NCS structures. As in the above models, it will be assumed that, if a superior rival appears, there will be only one such rival. Otherwise, if two or more identically superior rivals appear, competition among them will leave them with no surplus.

<sup>13</sup> The analysis below assumes that, under CS, the controller has a fraction  $\alpha$  and that, if the initial structure is NCS, the rival will gain control by making a bid for the same fraction  $\alpha$ . The analysis can be extended to the case in which a bid under an NCS structure might be for some other fraction. This possibility can be shown to strengthen further the advantage of a CS structure that the analysis below identifies.

counter-bid, then  $N$  will bid  $\max(Y_{CS}(\alpha) - \mu R + B_{CS}(\alpha) - C_T, [Y_{CS}(\alpha) + \Delta Y])$ , since the incumbent will be willing to bid up to  $Y_{CS}(\alpha) - \mu R + B_{CS}(\alpha) - C_T$ . Thus, the new manager  $N$  will capture a profit of  $\min[\Delta Y, B_{CS}(\alpha) - \mu R - C_T]$ . And  $I$  and the initial shareholders will thus end up with the rest of the surplus  $(Y - C_T)$ .

### 3. Comparison

*Proposition 9:* If a new rival with a superior  $Y$  is expected to emerge, a sufficient condition for a CS structure to produce, in the event of a transfer to the rival, a higher expected value for  $I$  and the company's other initial shareholders is that

$$(6) \quad B_{CS}(\alpha) - \mu R - C_T > E(\Delta Y - C_T)/2.$$

*Proof:* The right-hand side is equal to the profit of the new manager under CS. Under NCS, there are two possibilities. Either  $N$  will gain  $B_{CS}(\alpha) - \mu R - C_T$ , which by the condition exceeds the right-hand side; or  $N$  will gain  $\frac{1}{2}(\Delta Y - C_T)$  which by definition exceeds the right-hand side. •

The implication of this result is that, if the corporate system is sufficiently lax, and if  $B_{CS}(\alpha)$  is consequently sufficiently large, the possibility that a rival with superior  $Y$  will arrive favors a CS Structure.

### B. Rival with Higher $B$

Let us now suppose that, at  $T=1$ , it is expected that the rival  $N$  that will arrive will have the same  $Y$  but a  $B$  that is higher by  $\Delta B$ . Thus, under the new manager  $N$ ,  $V_{CS}(\alpha)$  would be equal to  $V_{CS}(\alpha) + \Delta B$ .

#### 1. Initial Choice of CS

In this case, assuming again that  $I$  and  $N$  have equal bargaining power, they will split between them  $(B - C_T)$ . Consequently,  $N$  will capture a profit of  $\frac{1}{2}(B - C_T)$ .

#### 2. Initial Choice of NCS

Here we need to distinguish, again, between the case in which the incumbent can counter-bid and the case in which the incumbent is too cash constrained to do so. If the



incumbent cannot counter-bid, then  $N$  will bid  $Y_{CS}$  and thus will make a profit of  $B_{CS}(\alpha) + \Delta B - \mu R - C_T$ . If the incumbent can counter-bid, then  $N$  will bid  $Y_{CS}(\alpha) + B_{CS}(\alpha) - \mu R - C_T$ , which is the price that the incumbent will not over-bid; in this case, the rival will be able to make a profit of  $\Delta B$ . Thus, the lowest profit that  $N$  will be able to make under an initial choice of NCS would be  $\min[B, B_{CS}(\alpha) + \Delta B - \mu R - C_T]$ .

### 3. Comparison

The above results indicate that, whereas under CS the rival would make a profit of  $\frac{1}{2}(\Delta B - C_T)$ , under NCS the rival would be able to make a profit of at least  $\min[B, B_{CS}(\alpha) + \Delta B - \mu R - C_T]$  (or more if the incumbent is cash constrained). After some rearrangement, we can state the following result.

*Proposition 10:* If a new rival with a higher  $B$  is expected to emerge at  $T=1$ , a sufficient condition for a CS structure to produce a higher surplus for  $I$  and the initial shareholders is that

$$B_{CS}(\alpha) + \Delta B > \mu R + C_T.$$

In this case again, when private benefits are large enough, a CS structure provides  $I$  and the initial shareholders with more surplus. Thus, this result seems to operate to strengthen the identified connection between large private benefits of control and CS structures.

## VI. POSITIVE IMPLICATIONS

### A. Why Countries Differ in the Incidence of CS and NCS Structures

The model developed above sheds light on the substantial differences in ownership structures across countries. It suggests that CS should be expected to be more common in countries in which private benefits of control are large – and less common in countries such as those in which private benefits are small. Conversely, NCS structures should be expected to be more common in countries in which the levels of private benefits of control are small and less common (or even rare or non-existent) in countries in which such benefits are large.

This prediction of the model is consistent with, and sheds light on, the findings of LaPorta, Lopez-de-Silanes, and Shleifer (1998). As described earlier, they find that CS

structures are more common when legal investor protection, as measured by their index of legal protection, is weak.

As an alternative to the index of legal protection used by LaPorta, Lopez-de-Silanes, and Shleifer (1998), the strength of legal protections can be measured by looking at the premia paid for control blocks. The sizes of these premia can serve as a proxy for private benefits of control. A testable prediction of the proposed model, then, is that CS structures will be more common in countries in which such premia are high.

## B. Why Countries Differ in the Incidence of Publicly Traded Companies

The analysis implies that, when private benefits of control are large, and NCS structures are consequently unstable, fewer companies will go public. When NCS is an option, an owner will go public when either  $V_{NCS}$  or  $V_{CS}$  exceeds the value of complete ownership  $V_{CO}$ . However, when NCS is not an option, the fact that  $V_{NCS}$  would exceed  $V_{CO}$  would not be a reason for going public; going public will take place only when  $V_{CS}$  exceeds  $V_{CO}$ .

This prediction is consistent with the observed patterns of ownership. To illustrate, the US and UK, in which private benefits are relatively limited and NCS structures are common, have relatively larger incidence of publicly traded companies. In contrast, in Italy, where private benefits of control are relatively large and NCS structures are rare, relatively few companies go public (see Pagano, Panetta and Zingales (1998)). Considering the issue more systematically, LaPorta et al (1997) find that more companies go public, and equity markets are more developed, in countries in which their index of investor protection is high. This prediction of our model is consistent with, and can help explain, this finding.

## C. CS and NCS Structures within a Country

The model has implications not only for the differences across countries but also for the differences among companies within a country. While countries differ greatly in their incidences of CS and NCS companies, in most countries there are some companies of each type. And the model has implications for the partition of companies between CS and NCS structures within each country.

The model indicates that a company is more likely to have a CS structure when the private benefits of control are large. These private benefits of control for a given company depend not only on the country's legal rules but also on company-specific and industry-

specific parameters. Thus, within each country, CS structures should be expected to be more common in industries or circumstances in which private benefits are relatively large.

One factor that might make private control benefits relatively large is the presence of ample opportunities to engage in self-dealing transactions and in the taking of corporate opportunities. Firms in which such opportunities are present are more likely, other things equal, to have a CS structure. The extent to which such opportunities are present might depend on the line of business in which the company operates. Ways to measure this factor might include looking at the control premia paid in acquisitions of CS companies in the same line of business. Another proxy for this factor (at least when the US is studied) is the frequency with which transactions with affiliated parties are disclosed and/or challenged by plaintiff lawyers.<sup>14</sup>

Another factor that can increase the private benefits of the initial owner is the presence of some nonpecuniary benefits from controlling the firm – which might exist when the controller founded the firm, when the firm has been controlled by the owner’s family for a long time, or when control of the firm provides the controller with some prestige and glamour (as is the case with control of sports teams). Thus, other things equal, firms in such situations are more likely to choose a CS structure.

Finally, companies are more likely to choose a CS structure when potential buyers of the company face imperfect competition due to the fact the owner taking the company public has liquidity constraints and/or there are few potential buyers.

#### D. When Votes are Separated from Cash Flow Rights

The model also has implications concerning when votes will be separated from cash flow rights. Votes can be separated from cash flows using several important corporate arrangements – dual-class, stock pyramids, and cross-holdings – and the analysis has implications as to when they will be used.

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<sup>14</sup>One factor that might make private control benefits small is the presence of substantial regulation in the industry. In regulated industries, private benefits might be smaller because the monitoring by regulators, coming in addition to that by plaintiff lawyers, might help to reduce the extraction of private benefits. This prediction is consistent with the evidence that concentration of ownership is higher in regulated industries (see Demsetz and Lehn (1985) who develop a different explanation to this finding).

The analysis suggests that separation between cash flow and voting rights will tend to be used in conjunction with CS structures but not with NCS structures. Such schemes enable, when it is desired, to maintain a lock on control without requiring the controller to bear the cost of holding a large fraction of the cash flow rights. In CS structures, when the owner taking the company public wishes to maintain such a lock, such schemes might therefore serve a useful role. While such arrangements might be costly in terms of agency costs or tax costs, they would still be adopted to establish the lock on control that is desired when control is too valuable to leave up for grabs.

In contrast, in NCS structures, in which the owner is relinquishing a lock on control, creating such separation will not provide such a service to the owner. Quite the contrary, in an NCS structure, creating separation will not only produce no value to the owner but also might have a counterproductive effect – by reducing the cost of holding a controlling block, it will make a control grab easier and might render the NCS structure unstable.

This analysis can explain the actual use of schemes separating votes from cash flows. Separation of cash flow from votes is indeed uncommon in NCS structures. For example, when dual-class is present, ownership of the shares with superior voting rights is often concentrated (see DeAngelo and DeAngelo (1985) and Nenova (1999)). The results of our model can explain why this is the case.

Similarly, our model can shed light on the use of pyramidal structures. Consistent with the model, such structures are rare in the US, in which private control benefits are relatively small and locks on control are not as much in need, and they are common in many countries in which investor protection appears weak (see LaPorta, Lopez-de-Silanes, and Shleifer (1998)). It would be worth subjecting this implication, however, to a more systematic testing. Because pyramids increase agency costs and often also tax costs (see Bebchuk, Kraakman, and Triantis (1998)), they will tend to be used when the consideration of locking control is sufficiently important. Thus, the testable prediction is that, the larger private benefits of control, the more common the use of pyramidal structures.

#### E. CS Structures with Radical Separation between Votes and Cash Flows

Bebchuk, Kraakman, and Triantis (1998) seek to attract attention to the puzzle presented by CS structures in which the controller has a lock on control with a minority and even a small minority of the shares. Compare (i) an NCS structure in which the manager has 5% or 10% of the cash flow rights due to an incentive scheme (a common situation in the US), with (ii) a CS structure in which, because of the presence of stock pyramids, dual-class

and/or cross-holdings, the controller has 5% or 10% of the cash flow rights (a common situation in some countries). The comparison suggests that structure (i) might well be more efficient than (ii). Both structures involve the same risk-bearing costs, and in both the financial incentives arising from the holding of cash flow rights are the same. However, whereas in structure (i) the threat of an ouster might provide the manager with good incentives, in structure (ii) the lock on control shields the manager from any market discipline. Furthermore, in many countries such a CS structure, to the extent that it would involve pyramids or cross-holdings, would also increase tax costs because cash flows will be taxed more than twice. Thus, a CS structure with a very small  $\alpha$  might well produce less total value than an NCS structure<sup>15</sup>. However, such structures exist in many countries and the question is why they arise.

Our model can explain this puzzle. While the considered structures might produce large costs, and in particular larger costs than an NCS structure, they might be chosen in order not to leave control up for grabs. In a country in which private control benefits are large enough, control would not be left for grabs – even if this would entail bearing the incentive costs and possibly also tax costs created by CS structures with a very small  $\alpha$ .

## VII. OTHER THEORIES CONCERNING THE EFFECTS OF RULES

There are other possible explanations concerning how legal rules affect the choice between CS and NCS structures. Now there can be more than one channel through which legal rules might affect this choice, and our rent-protection theory might therefore complement these other theories, adding another factor that might be at work. It is worth noting, however, that there are some aspects of existing ownership patterns that some other theories have difficulty explaining but might be possible to explain using the rent-protection theory.

### A. NCS Structures as Product of Constraints on Financial Institutions

Roe (1990, 1994) has pointed out that the US has legal rules that make the accumulation and holding of large blocks of shares by financial institutions costly and/or difficult. Such rules are not present, or at least not to the same extent, in other countries.

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<sup>15</sup> For a recent empirical investigation indicating that such CS structures might indeed involve substantial costs, see Cronqvist, Högfeldt, and Nilsson (1999).

According to Roe's theory, this difference in rules accounts for some of the differences in ownership structures between the US and other countries.

This is an important insight which can explain why holdings of large blocks by financial institutions are less common in the US than in other countries. But there are some other aspects of existing ownership structure that the theory cannot (nor does it aspire to) explain. In particular, it cannot explain the inter-country differences in terms of the control decisions that individuals and families take. While US law might discourage financial institutions from holding control blocks, the question still remains why founders of American companies that take them public are more willing than their counterparts in other countries to use structures that right away or at least over time relinquish their lock control. In contrast, the rent-protection theory might be able to explain these differences in the way that has been discussed (see Section A).

## B. CS Structures as Instrument for Reducing Agency Costs

Another possible connection between legal rules and ownership structures is based on the idea, going back to Jensen Meckling (1976), that ownership structure might be chosen to minimize the sum of agency costs and diversification costs. The larger the stake that a controller has, the smaller are the agency costs (see Jensen and Meckling (1976), Shleifer and Vishny (1997), and Burkhart, Panunzi and Gromb (1998b)). The connection between this idea and legal rules might go as follows. When the corporate law system is lax, so the story might go, the agency problem might be more severe, and consequently it becomes more important to have the manager hold a very large fraction of the cash flow rights in order to check more hazard in this way.

This is clearly a potentially significant factor at work, and one that might explain some CS structures in which the controller owns a large fraction of the cash flow rights. However, since in this theory the advantage of a CS structure is in discouraging moral hazard by providing the controller with most of the cash flow rights, this story cannot explain those CS structures in which the controller has a small fraction of the cash flow rights. As already noted, an important finding of Laporta, Lopez-de-Silanes, and Shleifer (1999) is that CS structures are often ones in which the controller has a small fraction of the cash flow rights and retains its control through the use of dual-class or stock pyramids.

Indeed, considering that countries with weak investor protection commonly have CS structures in which the controller has only a small fraction of the cash flow rights, agency costs considerations not only have difficulty explaining these structures, they actually make

their existence more puzzling. As already noted, when a manager has a small fraction of the cash flow rights, its holdings by itself would not provide it with good incentives to avoid inefficient extraction of control benefits. Thus, the threat of ouster might be quite relevant to the manager's incentives, and a lock on control might thus increase agency costs, with the problem perhaps even more severe in countries with permissive rules that do not effectively constrain the manager.

In contrast, the proposed rent-protection theory can explain, as already noted, the CS structures in which the controller has only a small fraction of the cash flow rights are common in countries with large private benefits of control. The theory does not attempt to show that such structures do not have efficiency disadvantages which they seem to have at first glance. Rather, it suggests that such structures arise not because of their efficiency virtues but rather, despite their efficiency disadvantages, because control is too valuable to leave up for grabs. In such cases, initial owners would prefer to bear the costs that such structures would involve than to relinquish their lock on control.

### C. CS Structures as Product of Agency Costs

Finally, it is worth noting that a companion paper analyzes a link between private benefits and CS structures that reinforces the one identified in this paper. Whereas this paper analyzes choices of ownership structure made at the IPO stage, Bebchuk (1999) analyzes decisions made following the initial offering. Following an IPO, even companies that ultimately have an NCS structure often start with a controlling shareholder (or a controlling group). In such cases, the controlling shareholders will decide over time, when more capital is raised, whether or not to relinquish their lock on control. And it can be shown that, when private benefits of control are large, controllers have in the post-IPO stage another reason to avoid moving to an NCS in addition to the one identified in this paper.

The additional factor that is present with respect to post-IPO choices between CS and NCS is the external effect that such choices are likely to have on the existing public investors. Whereas the initial owner in an IPO internalizes all the effect of the CS vs. NCS choice, a controller making such a choice after an IPO will not internalize fully the decision's effects. This introduces an agency problem. In particular, in considering whether to maintain CS by selling cash flow rights without votes when extra capital is raised, the controller will take into account that, whereas the tax costs and incentive costs produced by separating cash flow rights from votes would be partly borne by the existing public investors, he will fully capture the extra private benefits that a lock on control might produce. Therefore, in countries in which private benefits are large, controllers will be more reluctant to relinquish

their grip on control when raising extra capital for their publicly traded companies and will tend to sell cash flow rights with no (or disproportionately small) voting rights.

Note that this analysis also reinforces the empirical predictions of the present paper. They reinforce each other in providing an explanation for the aspect of existing ownership patterns that was already emphasized – that frequency in many countries of CS structures in which the controller has a small fraction of the cash flow rights.

## VIII. POLICY IMPLICATIONS

### A. The Choices of Ownership Structure for Firms Going Public

We have found that, in countries in which private benefits of entrenched control are large, NCS structures might not be chosen even if they could theoretically produce higher value. That is, in such countries, ownership choices will be distorted in favor of CS. At first glance, it might be suggested that it would be desirable for such countries to prohibit or discourage the use of CS structures. And there are some countries that have taken steps in that direction (Bebchuk, Kraakman, and Triantis (1999)). Many countries restrict the use of dual-class structures. By imposing tax on inter-company dividends, many countries impose a significant tax penalty on the use of pyramids and cross-holdings. And indeed, concerns about pyramidal structures have led to heated public debates in some countries about whether the law should impose further limitations on their use.

Notwithstanding the problems identified in this paper, however, restricting or discouraging the choice of CS structures might not be a desirable policy approach. To be sure, given that a company goes public, ownership choice might be distorted in favor of CS. But if the use of CS structures were prohibited or discouraged, this would not imply that companies would choose to go public with an NCS structure. They might instead choose to remain closely held and avoid going public altogether. For if private benefits of control are large, and if the law requires an NCS structure for publicly traded companies, then going public might be discouraged even when it could provide some efficiency benefits.

### B. The Level of Private Benefits of Control

The main policy implications of the analysis concern a basic question for corporate policy – to what extent should the corporate system seek to reduce the private benefits of controllers. Creating a corporate law system that can effectively reduce private benefits of



control is costly. It requires not only appropriate rules but, more importantly and more costly, an elaborate and effective system of enforcement and implementation and therefore the creation of an appropriate professional and institutional infrastructure. So it is important to identify the limits on private benefits that would be important for a corporate law system to impose.

The analysis of this paper has shown that, even if the extraction of private benefits of control is itself only a pure transfer, that is, even if such extraction does not by itself produce any efficiency costs, large private benefits of control can indirectly create large efficiency effects by distorting ownership choices. Thus, a corporate policy that lowers private benefits of control would bring us closer to efficient choices of ownership structure.

To be sure, our analysis does not imply that it would be desirable to reduce private benefits of control all the way to zero. To begin with, it might not be possible to reduce  $B$  without costly constraints on managers' choices. Furthermore, when the pressure of blockholders can improve incentives, having some private benefits of control might be necessary to induce them to hold a block and forego some benefits of diversification. But the analysis does identify an important cost of large private benefits of control and one that should be taken into account in designing corporate policy.

## IX. PARTIAL CONTESTABILITY AND ANTITAKEOVER ARRANGEMENTS

The analysis has thus far focussed on two “pure” structures – CS, in which a controller has a complete lock on control, and NCS, in which control is completely contestable with no impediments to attempts by rivals to gain control. We now turn to examine the cases of partial contestability that lie on the continuum between complete contestability and uncontestability. Partial contestability can arise from the manager having a significant fraction but less than a majority of the voting rights (see Burkhardt, Gromb, and Panunzi (1999)); we leave the analysis of this type of partial contestability to future research. Here we analyze the other main way for adopting partial contestability – by adopting antitakeover arrangements that impede but do not rule out a hostile takeover.

Partial contestability arising from antitakeover arrangements is often adopted by US companies. Indeed, Coates (1998), Daines and Klausner (1998), and Field (1999) document that companies going public in the US commonly have charters with various antitakeover provisions. This section shows that the model developed in this paper can explain why companies might choose partial contestability and antitakeover arrangements. Also, in some

countries and in some states in the US, antitakeover arrangements are adopted by law, and the model can identify the effect that such legal rules would have on the incidence of CS structures. Below we start by discussing the general objectives that antitakeover arrangements can serve, and we then turn to consider the main types of antitakeover arrangements currently in use.

#### A. Possible Objectives of Antitakeover Arrangements

The analysis of this paper suggests two objectives that antitakeover arrangements, and the partial contestability that they establish, might pursue. First, antitakeover arrangements might seek to prevent attempts to gain control by non-superior rivals. The analysis has shown that, in the absence of any antitakeover arrangements, leaving control completely up for grabs in an NCS structure might attract an acquisition attempt by a non-superior rival seeking to capture the private benefits of control. Because transfers to a non-superior rival cannot increase the total value (including private benefits) captured by  $I$  and the initial shareholders, preventing such transfers would be desirable. And, as explained below, antitakeover arrangements might make it more difficult for a non-superior rival to gain control profitably.

Second, antitakeover arrangements might seek to reduce the increase the fraction of the surplus captured by  $I$  and the initial shareholders in value-increasing transfers. From  $I$ 's perspective, it is desirable that, in the event of a control transfer to a superior rival, the initial shareholders (including  $I$ ) will capture as large a fraction as possible of the surplus created by the transfer. And, as explained below, some antitakeover arrangements might be able to serve this objective.

Finally, before proceedings to consider specific types of antitakeover arrangements, it should be noted that, while antitakeover arrangements might serve these two objectives, they also, compared with a pure NCS, produce costs. First, antitakeover arrangements, and the limits on contestability that they establish, might reduce the disciplinary force exerted by the takeover threat in a pure NCS structure. Second, whereas all value-increasing transfers to superior rivals will take place under NCS, antitakeover arrangements might prevent some value-increasing transfers.

#### B. Requiring Full Acquisitions

The analysis of Sections II and III assumed that a rival seeking a control block was free to choose what fraction of the shares he will purchase. Some antitakeover arrangement, however, might seek to make control grabs more difficult by prohibiting partial bids and

requiring that a bidder seeking control offer to purchase all the shares of the company. As is shown below, such an arrangement can prevent some – but not all -- attempts to gain control by non-superior rivals.

To see this, recall (see proposition 3) that, in the absence of a full acquisition requirement, a sufficient condition for an NCS structure to unravel at  $T=1$  is that

$$Y_{CS}(\alpha) - \mu R + B_{CS}(\alpha) - C_T > \alpha \max(Y_{NCS}, Y_{CS}(\alpha)) \text{ for all } \alpha \geq 0.5.$$

But this conclusion was based on the assumption that a rival would be able to bid for any  $\alpha$  that he will choose. With a full acquisition requirement, the above conditions would have to hold for  $\alpha=1$  and not just for some  $\alpha \geq 0.5$ . This implies that having a full acquisition requirement would narrow – though it would not eliminate – the set of circumstances in which the initial owner could be concerned about a control grab by a non-superior rival. Specifically, denoting by  $V_{CO}$  the total value that will flow from a complete ownership structure in which the manager owns all the shares, an NCS structure with a full acquisition requirement will not be maintained if

$$(8) \quad V_{NCS} < V_{CO} + B_{NCS} - C_T.$$

Note that in some countries (for example, the UK and some countries in continental Europe), and in some states in the US, a full acquisition requirement is adopted by law. Comparing the above condition to the condition in proposition 4, we see that, a country's introducing a full acquisition requirement by law would decrease the fraction of publicly traded companies that use a CS structure. Even for countries with such a requirement, however, having a potentially higher value might not be a sufficient condition for an NCS structure to be chosen over a CS structure. Also, among countries with a full acquisition requirement, CS structures should be more common in those in which legal rules are lax and  $B_{NCS}$  is consequently large.

### C. Voting Requirements

Another antitakeover arrangement that might make control grabs more difficult involves requiring that an acquisition of control receive a vote of approval from the target's shareholders. With such a voting requirement, a bid offering  $P$  for a fraction  $\alpha$  of the shares would be able to succeed only if acceptance of the bid makes the shareholders collectively

better – that is, only if  $P + (1-\alpha)Y_{CS}(\alpha) > Y_{NCS}$ . From this it follows that the condition for an NCS structure to unravel will no longer be the one in proposition 3 but rather that

$$Y_{CS}(\alpha) - \mu R + B_{CS}(\alpha) - C_T > \alpha \max(Y_{NCS} - (1-\alpha)Y_{CS}(\alpha), Y_{CS}(\alpha)) \text{ for some } \alpha \geq 0.5.$$

Thus, a voting requirement also would narrow – though not eliminate – the set of circumstances in which the initial owner could be concerned about a control grab by a non-superior rival. Specifically, it can be shown that an NCS structure will not be maintained if (8) is satisfied.

Note that in some countries, and in some states in the US, a voting requirement is imposed by law. A testable prediction of the model is that introducing a voting requirement would increase the fraction of companies that do not choose a CS structure. However, even for countries with such a requirement, having a potentially higher value might not be sufficient for an NCS structure to be chosen over a CS structure. Also, among countries with a voting requirement, CS structures should be more common in those in which the corporate law system is lax and  $B_{NCS}$  is consequently large.

#### D. Arrangements that Increase the Costs of Bidding

Some antitakeover arrangements, such as ones that impose a delay on bidders by preventing shareholders from acting by written consent or calling special meetings, operate to increase  $C_T$ , the transaction costs associated with a takeover. Now recall that an NCS structure will not be maintained due to a control grab when

$$Y_{CS}(\alpha) - \mu R + B_{CS}(\alpha) - C_T > \alpha \max(Y_{NCS}, Y_{CS}(\alpha)) \text{ for some } \alpha > 0.5.$$

Thus, any arrangement that increases  $C_T$  diminishes the concern from a control grab, and it therefore renders the partially contestable structure that includes this arrangement more stable.

It is worth noting, however, the potential drawbacks of an arrangement increasing  $C_T$ . By making a takeover more difficult, it reduces the positive effects of the takeover threat on incentives. Furthermore, while such an arrangement works well with respect to the prospect of control grabs by non-superior rivals, it does not work well at all with respect to the prospect of a value-increasing transfer. It reduces the likelihood of such a transfer without increasing the surplus that the initial shareholders will capture in the event that such transfer takes place.

## E. Arrangements that Give Managers some Veto Power

Perhaps the most important type of antitakeover arrangements are those that gives the manager some partial veto power over a takeover. These include staggered boards which give the manager power to delay substantially the taking over of a control by a rival that has a majority of the corporate votes. Also, when the charter does not prohibit poison pills, the incumbent will be able to establish a pill which, until a court orders its redemption, gives the incumbent the power to stop a bid.

To begin with, note that if these arrangements gave managers a complete veto power, then they would make the structure a CS one. But such arrangements do not give the managers a complete veto power and thus establish just a partially contestable structure.

Such arrangements can serve two goals. First, they might well prevent control grabs by non-superior rivals. Second, such arrangements might increase the surplus captured by the initial shareholders in value-increasing transfers. To see how they do this, consider a case in which the managers have a complete veto power. In such a case, the bidder will have to offer such a price (or price accompanied with a side payment to the managers) that will make not only the shareholders but also the incumbent better off, which means that non-superior rivals will not entertain the thought of grabbing control. And the need to offer a price that makes it worthwhile to the managers to accept would reduce the surplus captured by the buyer in a value-increasing transfer. With partial veto power, these objectives might be attained to an extent that depends on the strength of the veto power.

Note again that such arrangements, like all arrangements establishing partial contestability, serve these two objectives only at some cost. They weaken the incentive effect that the threat of a takeover has on the incumbent, and they might prevent some beneficial value-increasing transfers. The size of these costs will also depend on the strength of the manager's veto power. And the optimal charter will set the veto power at the level that optimally trades off the considered benefits and costs.

## F. Testable Predictions

The above analysis yields testable predictions concerning the type of companies that will be most likely to include antitakeover provisions in their IPO charters. First, companies in which private benefits of control are large should be more likely to adopt antitakeover arrangements. The size of private benefits of control might depend on industry-specific and

company-specific parameters, and Section VI. C. already noted some proxies to use in identifying differences in private benefits among industries and companies.

To start with, antitakeover arrangements should be more common in an industry in which, when control blocks are purchased, control premia are high. Also, relying on the earlier analysis, an industry in which private benefits are large is likely not have more CS structures. Accordingly, in lines of business in which CS structures are more common, those companies that go public without a controlling shareholder will be more likely to include antitakeover arrangements in their charter.

An important type of private benefits is the opportunity to engage in self-dealing and in taking of corporate opportunities. Accordingly, in lines of business in which such opportunities are common -- as measured by, say, the frequency of disclosures on transactions with affiliated parties or the frequency of plaintiff litigation -- antitakeover arrangements can be expected to be more common.

Private benefits might be also nonpecuniary. Control might provide larger such benefits to the controller when the controller founded the firm, when control of the firm has always resided with the controller's family, or when control of the firm provides the controller with prestige. Thus, other things equal, antitakeover charter arrangements should be more common in such situations.

Second, the analysis has shown that the identified problems are more severe in companies in which the incumbent is cash constrained. When the incumbent is cash constrained, it is easier (and more profitable) for a non-superior rival to take over when control is left up for grabs. Also, an inability of the incumbent to counter-bid increases the fraction of the surplus that a superior rival would be able to capture in an efficient control transfer. Thus, companies in which the initial owner is cash constrained are more likely to adopt antitakeover arrangements.

Third, antitakeover arrangements that give managers some veto power are more likely to be adopted when the likelihood that a superior manager will arrive is small. In these cases, the benefit of preventing any attempt to gain control by a non-superior rival is large relative to the cost of potentially impeding a superior rival that is unlikely to emerge.

## X. CONCLUSION

This paper has developed a rent-protection theory of corporate ownership structures. It has identified the way in which large private benefits of control shape choices of ownership structure. When private benefits of control are large, founders of companies that take them public will be reluctant to leave control up for grabs. When control is valuable, leaving it up for grabs will invite attempts to grab it and will not constitute an equilibrium. Furthermore, when private benefits are large, maintaining a lock on control can enable the initial shareholders to increase the fraction of surplus that they would be able to capture in a surplus-creating transfer of control.

The developed model has implications for other important dimensions of the initial ownership structure. It shows that separation between cash flow rights and voting rights will tend to be used in conjunction with CS structures but not with NCS structures. It also identifies why owners might choose to adopt structures in which control is partially contestable, say, by adopting antitakeover charter provisions.

The theory developed in this paper is consistent with, and sheds light on, the existing evidence on ownership structures. The theory can explain some of the puzzling features of existing structures, such as the common presence in some countries of CS structures with considerable separation between votes and cash flow rights. The theory also provides future empirical work with many testable predictions concerning differences across countries and among companies in the same country. Finally, because it has identified how large private benefits of control distort choices of ownership structure, the theory has identified an important consideration that corporate policy should take into account.

## APPENDIX

*Proof of Proposition 3:* Suppose that  $V_{CS}(\alpha^*)$  exceeds  $V_{NCS}$ . In this case, the maximum total value is  $V_{CS}(\alpha^*)$ , and  $I$  would be able to obtain this value by setting at  $T=0$  a CS structure with  $\alpha^*$ . To see this note first that, given our assumption that all managers are alike, then, if a CS structure is set at  $T=0$ , there will be no change in control at  $T=1$ . The change in control would require an agreement between  $I$  and a rival, and, since they are identical, the value of the controlling position would be the same for both of them. Thus, there would be no reason for the transaction to take place. Given the above, by setting a CS structure,  $I$  will capture a total value of  $V_{CS}(\alpha^*)$ .

In contrast, if  $I$  sets a NCS structure at  $T=0$ , then either this NCS structure would be retained at  $T=1$ , in which case the total value that would be captured by the initial shareholders (and thus in turn by  $I$ ) would be  $V_{NCS} < V_{CS}(\alpha^*)$ ; or the company would revert to a CS structure at  $T=1$ . But given that the takeover bid needed for this would involve a cost of  $C_T$ , the maximum total value that  $I$  would be able to get is  $V_{CS}(\alpha^*) - C_T$ . Thus, whether an NCS structure set initially is expected to remain or revert to CS, an initial choice of the less efficient structure NCS will result in a lower payoff to  $I$ .

*Proof of Proposition 4:* Suppose that condition (2) is satisfied for some  $\mu \geq 0.5$ . Then the company will not remain NCS because the rival will have an incentive to make a bid for shares constituting a fraction  $\alpha$  of the shares.

To see this, examine whether a rival would find it profitable to acquire a control block of some given  $\alpha \geq 0.5$ . The value of such a control block will be  $\alpha Y_{CS}(\alpha) - \mu R + B_{CS}(\alpha)$ . The question, then, is whether the rival will be able to purchase such a block at a cost not exceeding this value.

Facing a bid for a fraction  $\alpha$  of the shares (and assuming that no higher bid is made), the shareholders will tender their shares if the bid price  $P$  offered for these shares satisfies

$$P > \alpha \max(Y_{NCS}, Y_{CS}(\alpha)).$$



The reason for this is that, whatever the outcome of the bid, the company's shareholders cannot expect to get more than  $\max(Y_{NCS}, Y_{CS}(\alpha))$ . Thus, offering a bid price equal to the per share value of this amount will be sufficient to ensure that the bid succeed.<sup>16</sup>

Given that the bid would involve transaction costs of  $C_T$ , a sufficient condition for a takeover bid offering  $P$  for a fraction  $\alpha$  to be profitable and to take place is that

$$\alpha Y_{CS}(\alpha) - \alpha^2 \mu R + B_{CS}(\alpha) - C_T > P.$$

Thus, a price  $P$  that would attract shareholders to the offer and still be profitable to the bidder would exist as long as

$$\alpha Y_{CS}(\alpha) - \alpha^2 \mu R + B_{CS}(\alpha) - C_T > \alpha \max(Y_{NCS}, Y_{CS}(\alpha)).$$

Which price  $P$  will be offered by  $N$  will depend on whether  $N$  faces the possibility of a competing bid by  $I$  (or by some other rival). If a competing bid is not possible (because  $I$  is cash constrained and no other rivals are there),  $N$  will bid only  $\alpha \max(Y_{NCS}, Y_{CS}(\alpha))$ , the lowest price needed to attract tenders. But if  $N$  faces the possibility of a competing bid because  $I$  is not cash constrained (or, alternatively, because there are other rivals),  $N$  will bid  $\alpha Y_{CS}(\alpha) - \alpha^2 \mu R + B_{CS}(\alpha) - C_T$ , which is the lowest price that others will not over-bid. Alternatively, to preempt a bid from rivals, the incumbent will have to pay a price equal to that amount.

Thus, we can conclude that, whether or not  $N$  faces the possibility of a competing bid, if the condition in the proposition holds for some  $\alpha \geq 0.5$ , an initial choice of NCS will not be maintained. It will unravel as the rival (or, to preempt a rival, the incumbent) obtains a controlling block. Control will be too valuable to be left lying out there. The difference between the two scenarios, one with competing bids and one without, is only with respect to the price at which the control block will be bought. •

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<sup>16</sup> Note that, when  $Y_{NCS}$  exceeds  $Y_{CS}(\alpha)$ , a bid at the above price will definitely win but a lower bid might also succeed. For in such a case,  $N$  might be able to acquire the block for less than  $\alpha Y_{NCS}$ . In the case of a bid exceeding  $Y_{CS}(\alpha)$  but below  $Y_{NCS}$ , there are two equilibrium outcomes. In the "good" equilibrium, shareholders will reject the bid. In the "bad" equilibrium, they will surrender to a pressure to tender and accept the bid (see Bebchuk (1985)). Given that we are interested in sufficient conditions for a bid to succeed, let us focus on the "more demanding" good equilibrium. Even if the good equilibrium is assumed always to take place (as Grossman and Hart (1980) assume), a price of  $\max(Y_{CS}(\alpha), Y_{NCS})$  will be sufficient.

*Proof of Proposition 5:* We have seen that, if condition (2) is not met for some  $\alpha \geq 0.5$ , then, by Proposition 4, even if an NCS were initially set, the company would revert to CS at  $T=1$ . The total value that would be produced at  $T=2$  would still be  $V_{CS}$ . But whereas an initial setting of CS at the optimal level would imply that the initial shareholders (and in turn  $I$ ) would be able to capture  $V_{CS}$  in full, an initial choice of NCS would imply that the initial shareholders (and thus  $I$ ) would be able to capture less than  $V_{CS}$ . How much less would depend on whether  $N$  faces the possibility of a competing bid. If  $N$  does not face such a bid, then the initial shareholders would capture  $V_{CS} - C_T$  minus the profit of the rival. If  $N$  does face the possibility of a competing bid, then the rival would make no profit, but the initial shareholders would still be able to capture only  $V_{CS} - C_T$  rather than  $V_{CS}$ .

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