Minority Blocks and Takeover Premia

by

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This paper analyses takeovers of companies owned by atomistic shareholders and by one minority blockholder, all of whom can only decide to tender or retain their shares. As private-benefit extraction is inefficient, the posttakeover share value increases with the bidder's shareholdings. In a successful takeover, the blockholder tenders all his shares and the small shareholders tender the amount needed so that the posttakeover share value matches the bid price. Compared to a fully dispersed target company, the bidder may have to offer a higher price either to win the blockholder's support or to attract enough shares from small shareholders. (JEL: G 34)

1 *Introduction*

Takeovers are considered an important check on managers of large public corporations; they allow the removal of managers who are not acting in the shareholders' best interest. In addition, the mere threat of a takeover disciplines managers. Since Manne [1965] laid out the theoretical foundations for the study of takeovers, their effectiveness as a disciplinary mechanism has been questioned on different grounds, such as agency problems within the acquiring firm or expropriation of the target firm's stakeholders. Grossman and Hart [1980] and Bradley [1980] show that managers who pursue self-serving actions need not be vulnerable to takeovers, even though – or, more accurately, precisely because – ownership is widely dispersed. Being too small to affect the outcome, each shareholder tenders only if the bid price at least matches the posttakeover share value. The only way for the acquirer to succeed in face of this free-rider problem is to offer a price so high that he does not earn a profit. Consequently, he has no incentive to launch a bid, and inefficient managers face no risk of being ousted.

Their analysis of the free-rider problem is the starting point of a large theoretical literature exploring the dynamics of the tender offer process in various settings.

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A prominent theme in this literature is the role of the initial ownership structure, in particular the effect of blockholders. Numerous papers analyse takeovers where either a bidder or the incumbent management owns an initial stake. The role of blockholders as tendering shareholders has so far received little attention in the theoretical literature. The present paper aims to explore this dimension of blockownership in takeovers. To this end we analyse takeovers of firms owned by a majority of atomistic shareholders and one minority blockholder who does not counterbid but merely decides whether to tender or retain his shares. Our central result is that the presence of such a *passive* minority blockholder can force the bidder to offer a higher premium than in the case of a fully dispersed target.

How the presence of a minority blockholder who merely decides to tender or retain his shares affects the takeover outcome is also an empirically relevant question. Outside the U.S. and U.K., widely dispersed ownership is not the prevalent organizational form, even for the largest listed corporations (*e.g.*, LA PORTA, LOPEZ-DE-SILANES, AND SHLEIFER [1999]). But even in the U.S. and U.K., many listed firms have a shareholder owning 5% or 10% of the firm's shares.[1] Faced with a takeover attempt, target blockholders often choose not to launch a counterbid because they lack the financial resources or the managerial capabilities to run the firm. Furthermore, institutional investors, such as pension funds, are forbidden to launch tender offers.

In many existing takeover models, the presence of a passive minority blockholder does not alter the outcome. (There are a few exceptions that we discuss later in the paper.) In our model, it does, because the blockholder's tendering decision interacts with those of the small shareholders. The source of this interdependence is a posttakeover incentive problem on the part of the successful bidder. As in BURKART, GROMB, AND PANUNZI [1998], the successful bidder can decide to divert part of the revenues generated under his control as private benefits. Such extraction is, however, associated with a convex deadweight loss. That is, the extraction of private benefits is inefficient and exhibits decreasing returns to scale. As the bidder owns more shares, he internalizes more of this inefficiency and therefore extracts less private benefits, which implies a higher posttakeover share value.

The positive relationship between posttakeover share value and bidder's final holding implies that the small shareholder's supply in the tender offer depends on the bid price and the number of shares tendered by the blockholder. As the bid price increases, the posttakeover share value that leaves small shareholders indifferent between tendering and retaining their shares also increases, and so must the fraction of tendered shares. If small shareholders anticipate that the blockholder will tender more shares, they will tender fewer shares to make the posttakeover share value match the bid price.

[1] GADOUM, LANG, AND YOUNG [2005] report that 59% of listed U.S. firms have a blockholder owning (directly or indirectly) at least 10% of the firm's shares. For a representative sample of listed U.S. corporations HOLDERNESS [2005] finds that 93% of the firms have shareholders who own at least 5% of the company's shares.

Relative to the small shareholders, the blockholder has stronger incentives to tender his shares, provided that the bid succeeds. Tendering additional shares increases the bidder's final stake. This in turn reduces the bidder's incentives to extract private benefits, thereby increasing the value of the large shareholder's remaining shares. Because this incentive persists whenever the bid price equals the posttakeover share value, the blockholder must tender his entire block in equilibrium.

Selling all shares makes the minority blockholder potentially decisive for the outcome, as the bidder's optimal strategy is to attract as few shares as necessary to gain control. The small shareholders' free-rider behaviour prevents the bidder from making a profit on the shares acquired in the tender offer. Hence, the bidder's only source of profit is the private benefits, which are decreasing in his final holding. The blockholder, being decisive, can in turn matter because he also takes the value of his block under the incumbent management into account when deciding whether to tender. By contrast, small shareholders only compare bid price and posttakeover share value.

We compare the tender-offer outcomes in the presence and in the absence of a minority blockholder. Within our framework, the optimal tender offer for a fully dispersed target is such that the bid price matches the posttakeover share value when 50% of the shares are tendered (BURKART, GROMB, AND PANUNZI [1998]). Any higher offer would attract more shares, thereby reducing the bidder's private benefits, while any lower offer would fail.[2] The presence of a blockholder matters if the per-share value of his minority block exceeds the posttakeover share value when 50% of the shares are tendered. This possibility can arise for two reasons.

First, the blockholder may enjoy private benefits such that the per-share value of his block exceeds the posttakeover share value when 50% of the shares are tendered. Therefore, the bidder has to increase the bid price either until the blockholder favours the offer as he is compensated for the forgone private benefits, or until the offer attracts enough shares (50%) from the small shareholders, making its success independent of the blockholder's decision. In either case, the higher bid price increases the fraction of shares tendered and thereby reduces the bidder's takeover gains. When these smaller gains are not sufficient to cover the takeover cost, the bidder refrains from undertaking a tender offer. Thus, whenever the presence of a minority blockholder leads to a higher bid price, it also reduces the likelihood of a takeover.

Second, a bid matching the posttakeover share value when 50% of the shares are tendered may be below the share value under the incumbent management.[3] The increase in the bid price due to the blockholder's resistance may deter value-decreasing bidders, who may find it too costly to take over the firm. When a value-decreasing bidder is not deterred, the price increase reduces or even eliminates the

[2] We focus here on equilibrium outcomes in which the tender offer succeeds. Failure of a conditional tender offer can always be supported as a Nash equilibrium outcome, irrespective of the bid price and the presence of a minority blockholder.

[3] In the case of a fully dispersed target, a value-decreasing bid can succeed against the collective interest of the shareholders because tendering can be individually rational as a hedge against the unfavourable minority position (BEBCHUK [1988]).

decrease in security benefits he brings about. Thus, minority blockholders offer protection – albeit not complete – against value-decreasing bidders.

The paper is organized as follows. Section 2 outlines the model. Section 3 shows when, how, and to what extent a minority blockholder affects the tender offer's outcome. Section 4 discusses the case of value-decreasing bidders. Section 5 reviews the related literature, and section 6 concludes.

2 *Model*

Consider a firm with an incumbent blockholder (henceforth called the incumbent, I) owning a fraction $\alpha < 50\%$ of shares, the remaining $1 - \alpha$ being dispersed among many small shareholders. The firm is approached by a potential acquirer (henceforth called the rival, R) who owns no shares. To gain control R has to make a public tender offer in which he attracts at least $1/2$ of the shares, which each carry one vote. The shareholders can respond to R's offer by either tendering (part of) their shares or retaining them. There are no further options or choices available to any player. In particular, none of the existing shareholders nor any other party can launch a counterbid. Similarly, R cannot purchase shares on the open market or offer to purchase I's block. These restrictions are not meant to make the model more realistic but to focus our analysis on the effect that the distribution of target ownership has on the tender offer's outcome.

Initially, a risk-neutral manager (M) is in charge of running the firm. If the takeover does not materialize, M remains in control. For simplicity, we abstract from any agency problems between M and the shareholders. Thus, M neither needs to be induced to exert some productive effort nor needs to be prevented from extracting a rent. Accordingly, there is no need to offer M any salary, or equivalently, M's compensation, including possible private benefits that he might receive in a richer model, is normalized to zero. Under M's control, shareholders obtain security benefits v_I per share.

We allow for the possibility that I enjoys private benefits. Some of the most compelling evidence of private benefits comes from studies documenting that (minority) blocks trade at a considerable premium relative to the share value after the announcement of the block trade (NENOVA [2003]; DYCK AND ZINGALES [2004]). These benefits can come from different sources. They may take the form of transactions with related parties, expropriation of corporate opportunities, or excessive consultant fees, all at the expense of the small shareholders. Alternatively, they may be the power and prestige that is associated with the control over a firm and the influence it may give over social and political events. Such *amenity potential* does not dilute the small shareholders' claims (DEMSETZ AND LEHN [1985]).

Our interest is in the possible effect of I's private benefits on the takeover outcome, rather than in their source.[4] Therefore, we assume that I obtains private benefits

[4] BURKART AND PANUNZI [2006] and BURKART, PANUNZI, AND SHLEIFER [2003] provide explicit models of private-benefit extraction both by the manager and by

$\Lambda \geq 0$. This reduced-form specification allows us to encompass different degrees of conflicts between insiders and small shareholders. For $\Lambda = 0$, I and the small shareholders have congruent interests. As Λ increases, their interests diverge and I behaves increasingly like an insider with little equity interest. Sufficiently large values of Λ are best viewed as I managing the firm himself. We denote the total per-share value of I's block as $\upsilon = v_I + \Lambda/\alpha$.

The sequence of events in the tender offer unfolds as follows.

In stage 1, R makes a take-it-or-leave-it, conditional, unrestricted tender offer; he submits a price b at which he has to buy all tendered shares, provided that he receives at least $1/2$ the shares. In addition, R must pay a cost $c > 0$, reflecting the expenses of searching for a suitable target and preparing the bid.[5]

In stage 2, the shareholders simultaneously and noncooperatively decide whether to tender. While I is aware that his decision may affect the outcome, small shareholders are assumed to be homogeneous and atomistic: they do not perceive themselves as pivotal for the outcome of the tender offer. Denote by $\gamma \in [0, \alpha]$ the fraction of shares tendered by I, and by $\eta \in [0, 1 - \alpha]$ that tendered by the small shareholders.

In stage 3, if less than $1/2$ of the shares are tendered, the offer fails and the status quo prevails. Otherwise, R gains control and holds $\beta \geq 1/2$ of the shares. In that case, R decides how to allocate the firm's resources: they may be used to generate security benefits, which accrue to all shareholders, or private benefits, which only R enjoys. This noncontractible decision is modeled as R's choice of $\phi \in [0, 1]$ such that security benefits are $(1 - \phi)v_R$ while private benefits are $[\phi - l(\phi)]v_R$. The function $l(\phi)$ represents the deadweight loss associated with private-benefit extraction.

ASSUMPTION 1 *The loss function $l(\cdot)$ is strictly increasing and convex on* $[0, 1]$*, with $l(0) = 0$, $l'(0) = 0$, and $l'(1) > 1$.*

As in BURKART, GROMB, AND PANUNZI [1998] and SHLEIFER AND WOLFENZON [2002], the extraction of private benefits is inefficient and its marginal return decreases. In addition, private-benefit extraction affects all shares equally.

3 Tender Offers and Minority Blockholders

The tender-offer game is analysed by backward induction: share values in the case of a successful takeover, the equilibrium outcome for a given bid, and the resulting optimal bidding strategy are derived in turn. Finally, the tender-offer outcomes in the presence of a minority blockholder are compared with the outcomes when target ownership is fully dispersed.

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a coalition of manager and blockholder. Endogenous private-benefit extraction by I in collusion with M would not alter our qualitative results.

[5] As the takeover outcome is certain in our setting, it is irrelevant whether the costs accrue before or after the takeover (in stage 1 or 3).

3.1 Resource Allocation and Shareholder Wealth

Consider first the case where the takeover bid succeeds and R owns a fraction $\beta \geq 1/2$ of shares. R is entitled to a fraction β of the cash flow and can decide the fraction of resources, ϕ, allocated to his exclusive benefits. As the extraction of private benefits entails a deadweight loss $l(\phi)$, R chooses ϕ to maximize his payoff

$$\beta(1-\phi)\upsilon_R + [\phi - l(\phi)]\upsilon_R.$$

Denote by ϕ^β the solution to the first-order condition $1-\beta = l'(\phi)$. Assumption 1 ensures that ϕ^β is interior and decreases with increasing shareholding β. When choosing ϕ, the bidder inefficiently reduces the value of both his and the minority shares. As β increases, the bidder internalizes more of the inefficiency and extracts less private benefits, which in turn leads to higher security benefits.

LEMMA 1 *As β increases, R's private benefits $[\phi^\beta - l(\phi^\beta)]\upsilon_R$ decrease and the posttakeover share value $(1-\phi^\beta)\upsilon_R$ increases.*

If the takeover fails ($\beta < 1/2$), M continues to run the firm. The small-shareholder wealth is υ_I, and I's block is worth $\upsilon \geq \upsilon_I$ per share. We will refer to a (successful) bid as *value-increasing* if it results in R holding β such that

$$(1-\phi^\beta)\upsilon_R \geq \upsilon_I.$$

For the time being, we restrict attention to parameter constellations such that any successful bid is value-increasing:

ASSUMPTION 2 $(1-\phi^{1/2})\upsilon_R \geq \upsilon_I$.

We will relax this assumption in section 4, where we discuss the case of potentially value-decreasing bids.

3.2 Tendering and Bid Price

We now derive the tendering behaviour of shareholders, large and small, for a given bid price. In the rational-expectations equilibrium outcomes, each shareholder forms expectations $\widehat{\alpha}$ and $\widehat{\eta}$ about the fraction tendered by I and by the small shareholders, and hence about the bidder's final shareholding, *i.e.*, $\hat{\beta} = \widehat{\alpha} + \widehat{\eta}$. In equilibrium, these expectations must coincide with the actual outcome.

As we will see, two equilibrium outcomes can arise for some bids: one in which the bid succeeds and one in which it fails. In such instances, we select (somewhat arbitrarily) the outcome with the higher payoff for the small shareholders. We refer to the equilibrium outcome selected in this manner as the *dominant equilibrium outcome*.[6]

To describe the equilibrium outcome as a function of the bid price, we define

$$b^* \equiv \max\left\{(1-\phi^{1/2})\upsilon_R\ ;\ \ \min\left\{\upsilon\ \ ;\ \ (1-\phi^{1/2+\alpha})\upsilon_R\right\}\right\}.$$

[6] An alternative might be to select the equilibrium with the highest payoff for I. We discuss this alternative towards the end of this section.

PROPOSITION 1 *For all bids b, there exists a single dominant rational-expectations equilibrium outcome:*

(i) For $b < b^*$, the bid fails.

(ii) For $b \in [b^*, v_R]$, the bid succeeds. (a) The blockholder tenders all his shares ($\gamma = \alpha$). (b) The small shareholders tender a fraction η of shares such that $b = (1 - \phi^{\alpha+\eta})v_R$.

(iii) For $b > v_R$, the bid succeeds and all shares are tendered.

In the remainder of this subsection we derive the proposition.

LEMMA 2 *For all bids b, failure is a rational-expectations equilibrium outcome.*

With conditional offers and atomistic shareholders, failure of the tender offer is always an equilibrium, irrespective of the offered bid price. Suppose that no shares are tendered. A nontendering shareholder has then no incentive to tender, as the offer would still fail: an individual atomistic shareholder's decision cannot alter the tender offer's outcome, and the blockholder is too small to reverse the outcome on his own.[7]

We now determine for each bid whether success can also be an equilibrium outcome and, if so, whether it dominates failure from the small shareholders' perspective. We begin with two features that all successful bids have in common.

LEMMA 3 *In any equilibrium in which the bid succeeds, it must be that $b \geq (1 - \phi^{\beta})v_R$.*

Given that small shareholders own more than 50% of the shares, a bid cannot succeed unless it induces (some of) them to tender. If the bid price is below the posttakeover share value, no atomistic shareholder will tender. This implies that the well-known free-riding condition must always be satisfied for a takeover to succeed. That is, the bid must not be below the posttakeover share value, which we have shown to be $(1 - \phi^{\beta})v_R$ (Lemma 1).

The second feature of any successful bid concerns I's tendering behaviour, which is specific to the setting with endogenous private-benefit extraction and central to our paper.

LEMMA 4 *In any equilibrium in which the bid succeeds, it must be that I sells his entire block.*

PROOF If R's bid succeeds, I's payoff is $\pi_I = \gamma b + (\alpha - \gamma)(1 - \phi^{\gamma+\eta})v_R$. Since $b - (1 - \phi^{\gamma+\eta})v_R \geq 0$ (Lemma 3) and $\partial\phi^{\gamma+\eta}/\partial\gamma < 0$ (Lemma 1),

$$\frac{\partial \pi_I}{\partial \gamma} = b - (1 - \phi^{\gamma+\eta})v_R + (\alpha - \gamma)\frac{\partial\left[(1 - \phi^{\gamma+\eta})v_R\right]}{\partial \gamma} > 0.$$

Therefore, $\gamma = \alpha$ is optimal for I. *Q.E.D.*

[7] While unconditional offers typically avoid problems of multiple equilibrium outcomes, they lead to problems of nonexistence of equilibrium (BAGNOLI AND LIPMAN [1988]).

If I were to own some shares following a successful bid, he would have an incentive to tender additional shares. On the one hand, he would make a nonnegative profit on these tendered shares [$b \geq (1-\phi^{\beta})v_R$ by Lemma 3]. On the other hand, the shares that he would retain would increase in value because the additional tendered shares increase R's shareholdings β, leading to a higher posttakeover share value (Lemma 1).

Lemma 4 bears some resemblance to the result of HOLMSTRÖM AND NALEBUFF [1992] that investors holding more shares have greater incentives to tender. In their model with a finite number of shareholders, a blockholder increases the chance of success by tendering some shares, thereby increasing the (expected) value of his retained shares. This additional gain from tendering decreases as the number of retained shares becomes smaller. As a result, a blockholder will only tender part of his shareholdings in equilibrium. In the present model, the posttakeover incentive problem on the part of the bidder leads the blockholder to sell all his shares in equilibrium.[8]

LEMMA 5 *For all bids $b < b^*$, failure is the only rational expectations equilibrium outcome.*

PROOF First, a successful bid with $b < (1-\phi^{1/2})v_R$ would imply $\beta < 1/2$ (Lemma 3), a contradiction. Second, suppose that a bid with $b < \min\{\upsilon; (1-\phi^{1/2+\alpha})v_R\}$ succeeds. In this case I's payoff when tendering is αb. If I retained his shares instead, the bid would fail. Indeed, $\beta < 1/2+\alpha$ (Lemma 3) and $\eta = \beta - \alpha$ (Lemma 4) imply $\eta < 1/2$. As I's payoff in that case is $\alpha\upsilon > \alpha b$, he is better off retaining his shares, which is a contradiction (Lemma 4). *Q.E.D.*

Given that $b^* = \max\{(1-\phi^{1/2})v_R\ ;\ \min\{\upsilon\ ;\ (1-\phi^{1/2+\alpha})v_R\}\}$, two cases need to be distinguished. First, if a bid $b < b^* = (1-\phi^{1/2})v_R$ were to succeed, shareholders would rationally anticipate 50% or more of the shares to be tendered. With R's shareholding β exceeding 50%, the posttakeover share value would exceed $(1-\phi^{1/2})v_R$, and *a fortiori* exceed the bid price b. Anticipating this, small shareholders would all refrain from tendering. Since together they hold more than 50% of the shares, the bid would fail. This contradicts the premise of success being an equilibrium outcome.

Second, suppose that a bid $b < b^* = \min\{\upsilon; (1-\phi^{1/2+\alpha})v_R\}$ were anticipated to succeed.[9] In that case, I would expect to suffer a loss on all the shares he tendered, as $b < \upsilon$. Due to the small shareholders' free-riding behaviour, the anticipated posttakeover share value would not exceed b, and I would also realize a loss on the retained shares. Hence, I would prefer the offer to fail. Since $b < (1-\phi^{1/2+\alpha})v_R$, R's posttakeover shareholding must be less than $1/2+\alpha$. Moreover, as I must

[8] According to CADSBY AND MAYNES [1998], partial tendering strategies are the norm in experiments but are rarely observed in the real world, where shareholders choose to tender either all or none of their shares.

[9] Since $(1-\phi^{1/2})v_R < (1-\phi^{1/2+\alpha})v_R$, this case arises if and only if $\upsilon \geq (1-\phi^{1/2})v_R$.

be anticipated to tender all his shares (Lemma 4), small shareholders must be anticipated to tender less than 50% of the shares. This renders I pivotal to the bid's success. Since he suffers a loss in the successful bid, he will not tender, thereby breaking success as an equilibrium outcome.

In conclusion, a bid has to satisfy the restrictions imposed by the large and the small shareholders' tendering behaviour in order to succeed. On the one hand, the bid must satisfy the free-rider condition $b = (1 - \phi^{\beta})v_R$ in order to induce enough small shareholders to tender their shares. On the other hand, a bid must either be favoured by I ($b \geq v$) or avoid depending on I's approval by attracting the necessary majority (50%) of shares from the small shareholders ($b \geq (1 - \phi^{1/2+\alpha})v_R$). Otherwise, I is both decisive for the outcome and in favour of the *status quo*, and will consequently let the bid fail by retaining his block. Bids below b^* violate (at least) one of these constraints and therefore cannot succeed in a rational-expectations equilibrium.

It only remains to prove parts (ii) and (iii) of Proposition 1.

LEMMA 6 *For all bids $b \in [b^*, v_R]$, the combination $\gamma = \alpha$ and $b = (1 - \phi^{\alpha+\eta})v_R$ is the only equilibrium outcome in which the bid succeeds. From the small shareholders' perspective, this outcome dominates failure.*

The rational-expectations equilibrium with $b \in [b^*, v_R]$ requires that $\beta = \hat{\beta}$ and that shareholders be *ex ante* indifferent between tendering and retaining their shares. The latter condition implies that the bid has to be equal to the expected posttakeover share value. Suppose, to the contrary, that either $b > (1 - \phi^{\hat{\beta}})v$ or $b < (1 - \phi^{\hat{\beta}})v$. In the former case nontendering shareholders would be better off accepting the offer, while in the latter case tendering shareholders would be better off retaining their shares. Together with the result that I must tender all his shares, *i.e.*, $\widehat{\gamma} = \alpha$ (Lemma 4), this implies that the only rational expectation consistent with success is $\widehat{\eta}$ such that $b = (1 - \phi^{\alpha+\widehat{\eta}})v_R$. This is indeed an equilibrium outcome, as small shareholders with these expectations are indifferent between tendering and retaining their shares. So tendering a fraction $\widehat{\eta}$ is (weakly) optimal.

As regards I's tendering behaviour, two non-mutually-exclusive cases must be considered.

Case 1: $b \geq (1 - \phi^{1/2+\alpha})v_R$. In that case, R's anticipated posttakeover shareholdings $\widehat{\beta}$ must exceed $1/2 + \alpha$, and so the small shareholders must be anticipated to tender $\widehat{\eta} \geq 1/2$. These expectations imply that I is not pivotal for the outcome. The offer would succeed even if I were to retain all his shares. Hence, I anticipates that the offer will succeed and his payoff will be

$$\pi_I = \gamma b + (\alpha - \gamma)(1 - \phi^{\gamma+\widehat{\eta}})v_R.$$

As this payoff increases with γ (Lemma 4), the proposed outcome is indeed an equilibrium outcome. Moreover, it dominates failure from the small shareholders' perspective. Their payoff is $(1 - \phi^{1/2+\alpha})v_R$, which by Assumption 2 exceeds the share value under the incumbent management.

Case 2: $b \geq v$. In that case, I is also better off when the offer succeeds. Irrespective of whether he is pivotal ($\eta < 1/2$) or not, I will find it optimal to tender all his shares, since for all $\gamma < \alpha$ we have $b > (1 - \phi^{\gamma+\widehat{\eta}})v_R$. Again this equilibrium dominates failure from the small shareholders' perspective, because $b \geq \upsilon \geq v_I$.

LEMMA 7 *For all bids $b > v_R$, all shares are tendered in the only equilibrium outcome in which the bid succeeds. From the small shareholders' perspective, this outcome dominates failure.*

If shareholders anticipate that an offer $b > v_R$ will succeed, they will all tender, because the posttakeover value is strictly below the bid price, *i.e.*, for all β, $(1 - \phi^{\beta})v_R \leq v_R < b$. Hence, the only potential rational expectation is $\widehat{\beta} = 1$. Since $\widehat{\beta} = 1$ implies that the bid succeeds, $\beta = 1$ is the only equilibrium outcome in case of success. It also dominates failure, the only other equilibrium outcome, because $b > v_R > (1 - \phi^{1/2})v_R \geq v_I$, the small shareholders' payoff in case of failure.

Before moving on, it is worth pointing out that only the equilibrium outcome of stage 2 has been determined, not the small shareholders' equilibrium strategies. For instance, the equilibrium outcome obtains when small shareholders behave symmetrically, each tendering his shares with probability η and retaining them with $1 - \eta$. Provided that the law of large numbers holds, exactly a fraction η of shares held by the small shareholders is tendered in equilibrium.

3.3 Optimal Bid

We turn now to the analysis of R's optimal bid.

PROPOSITION 2 *If R makes a tender offer in equilibrium, he bids b^*.*

PROOF We know $b \geq b^*$. R's payoff from a successful takeover is $\pi_R = \beta[(1 - \phi^{\beta})v_R - b] + [\phi^{\beta} - l(\phi^{\beta})]v_R - c$. For $b \in [b^*, v_R]$, we have $b = (1 - \phi^{\beta})v_R$ (Lemma 3), so that $\pi_R = [\phi^{\beta} - l(\phi^{\beta})]v_R - c \geq -c$, which is decreasing in β (Lemma 1) and therefore in b. Finally, $b > v_R$ is suboptimal, as it implies $\beta = 1$ (Proposition 1), $\phi^{\beta} = 0$, and ultimately $\pi_R < -c$. *Q.E.D.*

Because of the free-rider problem, R cannot make a gain on the tendered shares, and the private benefits are his only source of profit. Since private-benefit extraction entails a convex deadweight loss, a larger stake after the takeover leads to smaller private benefits and smaller takeover gains. We have established that the equilibrium supply of shares in successful offers increases with the bid price (Proposition 1). Therefore, R finds it optimal to bid the lowest price ensuring success, *i.e.*, to set $b = b^*$.

3.4 The Effect of a Blockholder

In the case of a fully dispersed ownership ($\alpha = 0$), R aims at attracting exactly 1/2 of the shares, the minimum amount required to obtain control. The posttakeover share value is then equal to $(1 - \phi^{1/2})v_R$, and this is also the bid that R must offer to induce shareholders to tender half of their shares (BURKART, GROMB, AND PANUNZI [1998]).

PROPOSITION 3 *Relative to the case of a fully dispersed ownership ($\alpha = 0$), the presence of a minority blockholder affects the equilibrium outcome as follows:*

(i) For $\upsilon \leq (1 - \phi^{1/2})v_R$, the blockholder has no influence on the outcome.

(ii) For $\upsilon > (1 - \phi^{1/2})v_R$, the presence of a blockholder implies: (a) a higher bid price and posttakeover share value in case of a takeover; (b) a lower takeover probability.

PROOF For $\alpha = 0$, we have $b^* = \max\{(1 - \phi^{1/2})v_R; \min\{\upsilon; (1 - \phi^{1/2})v_R\}\} = (1 - \phi^{1/2})v_R$. For $\upsilon \leq (1 - \phi^{1/2})v_R$, we have $b^* = \max\{(1 - \phi^{1/2})v_R; \upsilon\} = (1 - \phi^{1/2})v_R$. Hence, I has no influence. For $\upsilon > (1 - \phi^{1/2})v_R$, we have $b^* = \max\{(1 - \phi^{1/2})v_R; \min\{\upsilon; (1 - \phi^{1/2+\alpha})v_R\}\} > (1 - \phi^{1/2})v_R$. Compared to the case with $\alpha = 0$, this leads to a larger β and hence to a higher posttakeover share value (Lemma 1). The associated lower profits for R in turn imply a lower probability of a takeover. *Q.E.D.*

A bid matching the posttakeover share value when 50% of the shares are tendered ($b = (1 - \phi^{1/2})v_R$) also succeeds in the presence of I if this value exceeds the per-share value of the block under the incumbent management ($(1 - \phi^{1/2})v_R > \upsilon$). Given that all bids are value-increasing (Assumption 2), this case obtains when I enjoys no or little private benefit. Large and small shareholders benefit alike from the takeover. The bid succeeds with I selling his entire block α and small shareholders tendering $50\% - \alpha$ of the shares. Although I's tendering decision is decisive, his presence does not affect the takeover outcome: the bidder offers the same bid price to acquire the same fraction of shares (50%) as he does when the target is fully dispersed.

The presence of I matters if, due to (substantial) private benefits, the per-share value of his block exceeds the posttakeover share value when 50% of the shares are tendered. In this case an offer can only succeed if the blockholder either prefers success to failure or is not decisive. This constraint requires the bidder to increase the bid price until either the blockholder favours the offer or the offer attracts enough shares (50%) from the small shareholders. A larger minority stake and larger private benefits increase the bid premium that a bidder has to offer to succeed. From the small shareholders' perspective, such blockholder resistance comes with the benefit of higher takeover premia but also with the cost of a reduced takeover likelihood.[10]

Recall that we select the outcome with the highest payoff for the small shareholders. An alternative criterion would be to select the outcome that maximizes the blockholder's payoff. Under this alternative criterion, our main results would still

[10] The empirical research on the effects of managerial and outside blockownership offers conflicting findings. For instance, STULZ, WALKLING, AND SONG [1990] document that institutional ownership affects the target's gain negatively, conflicting with the findings of GASPAR, MASSA, AND MATOS [2005]. MIKKELSON AND PARTCH [1989] and SONG AND WALKLING [1993] show that targets have lower managerial ownership than nontargets; AMBROSE AND MEGGINSON [1992] find that neither managerial ownership nor institutional holdings are related to takeover likelihood.

hold. Specifically, Propositions 1–3 would hold with $b^* \equiv \max\{(1-\phi^{1/2})v_R;\ \upsilon\}$. The difference would be that the bid must be attractive to the blockholder in order to succeed. Attracting 50% of the shares from the small shareholders would no longer be sufficient. Moreover, our selection criterion is biased against the blockholder having an influence on the tender offer's outcome. Finally, consider the case $\upsilon > v_R$. For $b \in (v_R, \upsilon)$, the alternative criterion would have the undesirable property of selecting the failure equilibrium outcome, in which at least some small shareholders play a dominated strategy.

To recapitulate the intuition of a passive minority blockholder's role, consider the three reasons why the blockholder has a different tendering strategy from the small shareholders'.

First, to the extent that I enjoys private benefits $\Lambda > 0$ under M's control, he values the *status quo* more highly than the small shareholders. Consequently, there may be bids whose success is in the collective interest of the small shareholders but not in I's interest.

Second, I can be pivotal in some circumstances: whenever the fraction of shares tendered by small shareholders, η, falls in the range $[1/2-\alpha, 1/2)$. In those cases – when deciding whether to tender his shares – I compares their value under R's control not only with the bid price but also with their current value $\upsilon = v_I + \Lambda/\alpha$. The pretakeover share value can thus have an effect on the success of the tender offer, contrary to the case where ownership is fully dispersed.

Third, conditional on the bid being successful, I has a higher willingness to tender than small shareholders. In fact, I tenders all his shares in any successful bid, because he internalizes the appreciation of the untendered shares due to the increase in R's final stake. As small shareholders base their decision to tender on the posttakeover share value, which in turn depends on the fraction of shares tendered, I's tendering decision affects their tendering decision. It is therefore impossible for R to simply bypass I and attract 50% of the shares from small shareholders.[11] To win control, the bidder must induce both the blockholder and (a fraction of) the small shareholders to tender. Because of I's reluctance to tender, R is forced to increase the price offered in order to be successful.

4 *(Potentially) Value-Decreasing Bidders*

So far, we have abstracted from value-decreasing offers, which have received some attention in the literature. The main issue is that an equilibrium outcome might exist in which such an offer succeeds even though all shareholders would fare better if it failed. The reason is that facing a value-decreasing bid, dispersed shareholders may confront a pressure-to-tender problem: tendering may be individually rational to avoid being in a less favourable minority position (see, *e.g.*, BEBCHUK [1988]).

[11] As we discuss in section 5, this is possible if posttakeover share value and private benefits are exogenous, rendering the presence of a passive minority blockholder immaterial for the outcome of the tender offer.

In this section, we show how the presence of a passive minority blockholder can mitigate this problem.[12]

Analysing this issue in the context of our model requires making a couple of adjustments. First, we need to relax Assumption 2 to consider the possibility that bids below the *status quo* share value succeed, *i.e.*, $(1-\phi^{1/2})v_R < v_I$. Second, pressure-to-tender equilibria are Pareto-dominated by failure, and are therefore eliminated by our selection criterion. In the rest of this section, we consider these equilibrium outcomes. Technically, this amounts to selecting success as the equilibrium outcome for all $b \geq b^*$.

The arguments we have developed do not rely on Assumption 2, except those relating to equilibrium selection. Therefore, most results hold unchanged: Failure is an equilibrium outcome for all bid prices (Lemma 2), and for $b \geq b^*$, another equilibrium outcome exists in which the bid succeeds (Proposition 1). As before, the raider finds it optimal to bid $b = b^*$ to attract the minimum number of shares ensuring success and maximize private benefits (Proposition 2).

From our previous analysis it is immediate that the presence of a minority blockholder forces a (potentially) value-decreasing bidder to raise his bid. Given that success is selected as the equilibrium for all bids $b \geq b^*$, it follows that $b^* = (1-\phi^{1/2})v$ is the optimal offer of a value-decreasing bidder in the absence of a blockholder. As in Proposition 3, the blockholder matters if the per-share value of his minority block ($\upsilon \geq v_I$) exceeds the posttakeover share value when 50% of the shares are tendered. This always holds in the case of a value-decreasing bidder, who is defined by $(1-\phi^{1/2})v_R < v_I$. To succeed, the bidder must therefore increase the bid price until the blockholder favours the offer ($b = \upsilon$) or the offer attracts 50% of shares from dispersed shareholders ($b = (1-\phi^{1/2+\alpha})v_R$), whichever comes first.

The higher bid price translates into a greater supply of shares in equilibrium. The larger stake in turn induces the bidder to internalize more of the change in security benefits that he brings about. This has several effects. First, a bidder who would decrease security benefits but enjoy large private benefits might find it too costly to take over the firm (*deterrence effect*). Second, when a bidder is not deterred, a larger stake reduces the decrease in security benefits that he brings about (*improvement effect*). This reduction might possibly be so large as to become a value improvement (*redemption effect*). All three effects increase shareholder wealth. While this increase is augmented by the blockholder's private benefits prior to the takeover, it does not rely on such benefits. Indeed, $b^* > (1-\phi^{1/2})v_R$ even if $\upsilon = v_I$ (which is equivalent to $\Lambda = 0$).

[12] One might wonder how likely such value-decreasing bids are. Two remarks may be in order. First, while value-decreasing offers seem unlikely with cash bids, they may be more realistic when the means of payment include stocks or other harder-to-value financial assets. Second, although our analysis assumes a single bidder, it extends unchanged to the case of a second bidder without private benefits (see GROSSMAN AND HART [1988]). There, a value-decreasing offer is not necessarily below the no-takeover share value, but must be below the share value following a takeover by the rival, which may be harder to value.

5 Relation to the Literature

The present paper belongs to the takeover literature that considers targets with less than fully dispersed ownership structures. One strand shows that tender offers can be profitable when the target has a finite number of shareholders (BAGNOLI AND LIPMAN [1988]; HOLMSTRÖM AND NALEBUFF [1992]). Each shareholder takes into account that his decision may be pivotal, rather than negligible, for the outcome. Hence, he is willing to tender at a price below the posttakeover share value, leaving the bidder some profits. Another strand of this literature argues that a bidder who owns a stake in the target prior to the bid can earn a profit even if the target's ownership is otherwise fully dispersed (GROSSMAN AND HART [1980]; SHLEIFER AND VISHNY [1986]; CHOWDHRY AND JEGADEESH [1994]). While the bidder does not make a profit on the shares acquired in the tender offer, he collects the value improvement of his initial stake.[13] A pretakeover stake can also affect the bidder's behaviour in bidding contests, *e.g.*, make him bid more aggressively (BURKART [1995]; SINGH [1998]; BULOW, HUANG, AND KLEMPERER [1999]).

A third strand shows that blockownership by incumbent management can be important for the outcome of a takeover. When the incumbent has a majority of the votes, a control transfer can only occur with his consent. Transactions of majority (voting) blocks necessarily benefit buyer and seller, but may have a positive or negative impact on small shareholders (KAHAN [1993]; BEBCHUK [1994]). When the incumbent owns a large minority block,[14] control can be transferred either through a (hostile) tender offer or through a block trade. BURKART, GROMB, AND PANUNZI [2000] show that both incumbent and new controlling party prefer to trade the block, because it excludes the small shareholders from a larger share of the takeover gains. STULZ [1988] considers an incumbent manager who owns a block of voting shares and values control so highly that he never tenders. The supply of the remaining dispersed shares is upward sloping because small shareholders have heterogeneous opportunity costs of tendering. As the managerial block increases, the bidder needs to offer a higher premium in order to attract the required larger fraction of the dispersed shares. FERREIRA, ORNELAS, AND TURNER [2005] show that large managerial blockownership can preclude efficient control transfers. In their complete-contract framework, asymmetric information about managerial talent coupled with inefficient extraction of private benefits generates resistance to control changes. As the managerial block increases, the surplus generated by a control transfer decreases, thereby reducing the rents available to induce managers not to resist.

Many of these (and other) takeover models assume that the posttakeover minority share value and the private benefits of control are exogenous. This assumption

[13] KYLE AND VILA [1991] show that noise trading allows the bidder to acquire an initial stake on the open market at favourable prices so that a takeover can become profitable.

[14] Control over a firm does not necessarily require a majority of votes. In particular, when the remaining shares are dispersed, a minority block may be sufficient. For instance, neither the Ford nor the Wallenberg families own a majority of votes.

implies that the presence of a passive minority blockholder is immaterial for the tender-offer outcome. In order to succeed, the bidder must induce enough small shareholders to tender. Because of the free-rider problem, small shareholders tender only if the bid price at least matches the posttakeover share value, which is given and independent of the bidder's final shareholdings. The blockholder's tendering decision is irrelevant, as he is not decisive, owning a nonblocking minority stake.

For the presence of a passive minority blockholder to matter, one must depart from the standard model's property that the supply of shares by small shareholders is perfectly elastic (at the exogenous posttakeover share value). Instead, one needs an upward-sloping supply function. In our model, this property is generated by the endogenous private-benefit extraction. Alternatives include models with atomistic but heterogeneous shareholders, and models with a finite number of shareholders.

If the small shareholders' opportunity costs of tendering differ due to varying liquidity needs or tax rates, the supply of shares in the tender offer is upward sloping (Stulz [1988]; Stulz, Walkling, and Song [1990]).[15] In such a setting, the presence of minority blockholder can affect the equilibrium bid price. For example, if the blockholder has the highest opportunity cost of tendering, the bid securing a 50% supply of the shares increases. Furthermore, a blockholder opposed to a takeover, *i.e.*, with the highest opportunity cost, never tenders his shares even if the bid succeeds. In the present model, a blockholder who is opposed to the bid always sells his shares if the bid succeeds.

In a setting with a finite number of shareholders, a blockholder's tendering strategy differs from that of the small shareholders.[16] As pointed out in the discussion of Lemma 4, the logic of the model with a finite number of shareholders suggests that large shareholders tender some but not all their shares in equilibrium. Beyond this insight, the influence of a minority blockholder on the takeover outcome is an open question, as this literature has yet to derive a mapping of ownership concentration (block size) into equilibrium bid prices.

6 Concluding Remarks

This paper shows that the presence of a *passive* minority blockholder, who does not counterbid but merely decides whether or not to tender, can lead to a higher bid price. The result is driven by the inefficient extraction of private benefits, which entails that the posttakeover share value increases with the bidder's final holding. The positive relationship implies that the small shareholders' supply in the tender offer increases with the bid price but decreases with increasing number of shares

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[15] An upward-sloping expected-supply curve can also obtain if the shareholders' (common) opportunity costs of tendering are unknown to the bidder (Hirshleifer and Titman [1990]).

[16] Cornelli and Li [2002] assume that arbitrageurs, who own a nonnegligible stake, consider themselves as nonatomistic and are therefore willing to tender at a price below posttakeover share value.

tendered by the blockholder. It also means that the blockholder tenders his entire block in an equilibrium in which the bid succeeds. As a result, the blockholder is potentially decisive for the outcome of the tender offer, which matters if he values the *status quo* highly. In this case, the bidder must offer a higher price either to win the blockholder's support or to attract enough shares from the small investors so that this support is no longer needed. This benefits small shareholders, provided that the takeover is actually launched. Moreover, the presence of a passive minority blockholder represents a partial safeguard against value-decreasing bids.

We conclude by discussing some implications of our model. First, the presence of a large shareholder has a similar effect to that of a supermajority rule: it increases the fraction of shares tendered in equilibrium. Moreover, as it reduces the bidder's profit, a large shareholder acts as an antitakeover device. We should therefore expect the presence of supermajority and antitakeover devices to be inversely correlated with the presence (and size) of a large shareholder. Another interesting feature of our model is that the effect of a blockholder is not necessarily discontinuous at 50%. Suppose that the incumbent blockholder enjoys large private benefits, making him opposed to a control transfer. In order to succeed nonetheless, the bidder needs to attract 50% of the shares from the small shareholders, *i.e.*, bid $b^* = (1 - \phi^{1/2+\alpha})v_R$. As the incumbent's stake increases towards a majority block (50%), the lowest price ensuring success increases towards v_R, a price at which the bidder does not make any profits to recoup the takeover costs. Or putting it differently, little happens in our framework when the incumbent's stake drops somewhat below 50%. Majority blocks and (very) large minority blocks both constitute an insurmountable obstacle to hostile takeovers.

Second, our model considers unrestricted bids as stipulated by the mandatory bid rule (MBR). In the absence of the MBR, the bidder would bid $b = (1 - \phi^{1/2})v_R$ and restrict his offer to 50% of the shares. Such an offer would succeed, as tendering would be a (weakly) dominant strategy. This outcome coincides with that under the MBR but in the absence of a passive minority blockholder. Hence, the effects of such a blockholder, highlighted in section 3, materialize only in a regime with the MBR. Unless tender offers are unrestricted, the presence of a minority blockholder never forces the bidder to offer a higher price. With unrestricted offers, a higher price and the consequent acquisition of more than 50% of the shares may be necessary to simultaneously satisfy the free-rider condition and secure the blockholder's support (or attract enough shares from the small shareholders). Thus, our model implies that the MBR can have a positive effect on target shareholder wealth, whereas it is immaterial in models with exogenous private benefits.

Finally, consider the impact of deviations from the one-share–one-vote rule. For simplicity, assume that there are only two classes of shares – voting and nonvoting – each of them carrying the same fraction of cash-flow rights. The bidder will only make an offer for the voting shares. In the absence of a blockholder, the bidder would try to acquire 50% of the voting shares. In case of success, the bidder would own 25% of the cash-flow rights and would extract higher private benefits than in the one-share–one-vote structure. As private benefits come at the expense of share value, the presence of nonvoting shares decreases the equilibrium bid. A lower bid renders, *ceteris paribus*, the blockholder more resistant to the tender offer. Consequently, deviations from one-share–one-vote magnify the effect of the presence of a minority blockholder on the takeover outcome.

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