Activist Investors as Brokers of Corporate Control

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Abstract

We provide a theory of activist investors as brokers of takeovers where bidders and activists are equally subject to a dual free-rider problem: Neither do shareholders sell their shares unless the price fully reflects the anticipated value improvement of the intervention nor do those who retain their shares contribute to the intervention costs. We show that activism and tender offers represent opposite approaches to this dual problem and derive several sets of results. First, activism can better harness the bidder’s ability to improve target value because it is transitory and because working for control becomes more attractive but paying for control more expensive when potential improvements are larger. Second, activism is Pareto-improving and deepens the market for corporate control along the extensive margin (takeover probability) and the intensive margin (ownership consolidation), raising overall takeover activity but reducing tender offers. Third, pre-campaign coordination on toeholds can mitigate inefficiencies that arise from the limited scope for explicit contracting between bidders and activists. Last, empty voting improves the activists’ incentives and ultimately helps to consolidate ownership in the hands of bidders.

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It is our contention that sizeable profits can be earned by taking large positions in ‘undervalued’ stocks and then attempting to control the destinies of the companies in question by:

a) trying to convince management to liquidate or sell the company to a ‘white knight’;

b) waging a proxy contest;

c) making a tender offer and/or;

d) selling back our position to the company.”

—Excerpt from the “Icahn Manifesto,” 1976

1 Introduction

Hostile takeovers have long been considered the quintessential disciplinary governance mechanism, but a similarly confrontational strategy has lately come to prominence by way of activist hedge funds that buy into poorly run firms and use the threat of hostile tactics, such as proxy fights, to press management into accepting specific proposals to improve shareholder value. This paper integrates these two governance mechanisms in a theoretical framework to highlight the common frictions that they face as well as their differences.

Several observations motivate such a comparison:

i. Hostile bidders and activist hedge funds follow the same blueprint: They identify firms in which the separation of ownership and control has led to poor management, and buy an equity stake to have the influence to resolve agency problems and improve firm value. The key difference is that bidders acquire a majority stake and thereby full control, whereas activists invest in a minority stake and “work” towards obtaining the residual influence needed to achieve their objectives.¹

ii. Activist hedge funds are mired in the same controversies as the “raiders” of the 1980s. Critics question whether their activities are socially valuable and accuse them of chasing short-term gains at the expense of the firms’ long-term interest and necessitating wasteful defensive tactics. Concerns have also been raised over activist strategies that disentangle votes and economic interests. These strategies amount to deviations from the one-share-one-vote rule, which has been debated in the context of takeovers.²

iii. A significant percentage of activist campaigns pursues the sale of the target as their objective. Further, the number of campaigns and returns to

¹Buying (temporarily) into firms with the explicit purpose of shaping corporate decisions distinguishes hedge fund activism from institutional shareholder activism whereby long-term shareholders, such as pension funds, engage managements on occasion (Kahan and Rock, 2007). It is also the reason some observers refer to hedge fund activism as “raider-like” or “offensive” (e.g., Orol, 2008; Cheffins and Armour, 2011).

²On criticism regarding short-termism and adverse effects of disciplinary threats, see e.g., Coffee and Paglia (2014) and Goodwin et al. (2014) for activism, and Stein (1988) and Enríques et al. (2013) for takeovers. For the debate on deviations from the one-share-one-vote rule, see e.g., Hu and Black (2006, 2007, 2008) for activism, and Grossman and Hart (1988) as well as the references in Burkart and Lee (2008) for takeovers.
activism correlate positively with mergers and acquisitions (M&A) activity (Greenwood and Schor, 2009; Becht et al., 2014). The interaction of activism and takeovers has historical roots in the 1980s when targets were “put in play” by activist blockholders, whose credo is summed up in our opening quote, and who together with the raiders are the main antecedents of today’s activist hedge funds (Orol, 2008; Carlisle, 2014).3

iv. Concurrent with the upsurge of hedge fund activism since the mid-1990s in part due to relaxed shareholder communication laws (Sharara and Hoke-Witherspoon, 1993; Bradley et al., 2010; and Fos, 2013), there has been a rise in M&A activity but a decline in tender offers (Betton et al., 2008). A hypothetical link between these patterns is that hedge fund activism is a catalyst for mergers and, by the same token, a substitute for tender offers as a disciplinary takeover mechanism.4

Our theoretical framework compares bidders and activists on equal footing: Both bear private costs to generate a value improvement, and face fully rational, atomistic shareholders in a market without noise traders. Further, the activist’s objective is to broker a sale of the target firm to said bidder, so that tender offers and activism are different means to the same end. This crystallizes the respective comparative advantages by framing our analysis squarely in the market for corporate control. We also restrict all gains to the appreciation of equity stakes, including toeholds, as activist hedge funds extract no private benefits of control.

The first principle this framework lays bare is that activists and bidders face one and the same friction. The lack of coordination among passive shareholders that gives management discretion to act against their interest (Berle and Means, 1932) also subjects any active investor who endeavors to discipline management to a dual free-rider problem: On one hand, passive shareholders free-ride on the investor’s efforts to improve firm value, which mutes incentives. On the other hand, if the investor attempts to resolve this problem by buying more shares, she faces the second manifestation of the free-rider problem, namely that she must pay a price that fully reflects the anticipated equity appreciation (Grossman and Hart, 1980).

We find takeovers and activism to be polar approaches to this dual problem. As is well known, the bidder’s equity gains from a successful bid are limited to the value increase of her toehold as target shareholders extract the full value

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3Chapters 1 and 2 in Orol (2008) describe several links between activism and takeovers in practice. For example, he quotes a CEO who describes activist funds and private equity firms as “co-dependent”: “The [private equity firms] encourage the hedge fund guys to put companies in play and the activists take positions in companies and pressure for auctions enabling private equity firms to get a hold of divisions or entire companies they might otherwise not have been able to.” Another prominent takeover-related activist strategy is called “deal-jumping” whereby activist funds engage firms with already announced merger plans to (block the proposed deal and) bargain or “shop” for higher bids. This latter link is not covered by our analysis.

4Several observers have noted the apparent “substitution” of hedge fund activism for hostile takeovers in the data, and have pointed to legal developments that have made tender offers more difficult but activism easier (e.g., Fos, 2013; Davidoff, 2013).
improvement on the tendered shares through the bid price. Her optimal effort choice, from an \textit{ex ante} perspective, is hence to maximize the value of only the toehold. However, \textit{ex post} she optimally maximizes the value of her majority stake, which includes all tendered shares. That is, a takeover compels the provision of \textit{unrecompensed effort}, and is frustrated when the divergence in \textit{ex ante} and \textit{ex post} incentives is too large.

The activist faces the same free-riding shareholders and so the same problem that acquired shares induce her to provide unrecompensed effort. But activism does not build on majority control. On the contrary, the point of the campaign is to compensate for the lack of it. The activist hence optimally limits her share purchase, balancing the benefit of gaining influence from additional voting rights against the cost of unrecompensed effort. The downside is that the endogenous limit on her stake constrains her effort incentives, and when the value she creates under these incentives is too small, activism is not profitable.

Caught between Scylla and Charybdis by the dual free-rider problem, these strategies thus surrender to opposite evils. Bidders improve incentives by buying large stakes, but thereby accept that they “overwork.” Activists avoid this by buying small stakes, but thereby improve incentives less and “underwork.” The central result of this paper is that, in terms of profitability, these two strategies respond differently to changes in marginal returns to effort: A higher marginal return drives a larger wedge between the bidder’s \textit{ex ante} and \textit{ex post} incentives, but leverages the activist’s limited effort. Consequently, the bidder’s profit from a tender offer decreases in her ability, while the activist’s profit from a campaign increases in both her and the bidder’s ability. Therefore, although activists and bidders face the exact same frictions, campaigns and tender offers are profitable in opposite parameter regions, with some overlap where they coexist as feasible interventions.

Two features of activism are key to its comparative advantage. We refer to the first feature as the \textit{inversion of conditionality}: while bidders buy control to work, activists work to attain control. The nature of the dual free-rider problem is such that when effort is more valuable, buying control is costlier but working for it is more lucrative. The second central feature is that activism is \textit{transitory}. A campaign shifts the dual free-rider problem from the bidder onto the activist. Although this constrains the activist’s stake and effort, these constraints are not inherited by the bidder. Hence, the activist’s optimal response to the dual free-rider problem, unlike the bidder’s, does not distort post-takeover value creation. These features enable activists to be valuable as control brokers, even though they do not escape the free-rider problem and further introduce campaign costs, which represent a social deadweight loss.

When activism emerges, it is Pareto-improving and increases welfare along the extensive and intensive margin. It facilitates takeovers that would otherwise not occur and replaces tender offers with control sales that lead to higher post-takeover (ownership concentration and hence) firm values. Furthermore, there is a supply-demand relationship between the market for corporate control and activism: Exogenous growth in the \textit{demand} for takeovers invites more activism. Conversely, an exogenous reduction in the costs of activism increases the \textit{supply}
of targets, causing a rise in total takeover activity but a simultaneous decline in tender offers.

Building on these results, we further analyze two activist tactics that have attracted critical attention. The first concerns pre-campaign alliances between bidders and activists that walk a thin line between activism and insider trading. The second concerns the unbundling of cash flow and voting rights, which create a misalignment between the economic interest and voting power of activist hedge funds.

As regards the first issue, we show that takeover-driven campaigns rely on implicit incentives between bidders and activists that are susceptible to hold-up problems and thus create scope for cooperation. The gains from such a campaign are allocated through the negotiation in the ensuing control sale. At this time, however, the costs of the campaign are sunk so that the activist may be unable to recoup them if the bidder has too much bargaining power. Nor can they fix the terms beforehand, as any price agreement without the other shareholders is void and contingent side transfers to the activist would violate the equal treatment of target shareholders. This exposes the activist to hold-up risk that can deter the “relationship-specific investment” a campaign constitutes. The bidder can mitigate the problem by “conceding” a toehold to the activist to make the campaign more effective and to reduce her own threat point in the ex post bargaining. In practice this may involve “tipping off” an activist, who then buys a “Trojan Horse” stake in the prospective target to launch a campaign for a control sale. While “insider trading” is inherent to this strategy, our analysis shows that such alliances also serve as a solution to the inefficient lack of explicit contracts between bidders and activists.

The second issue is familiar to the takeover literature. Burkart et al. (1998) show that deviations from one-share-one-vote can facilitate tender offers at the expense of post-takeover incentives. In our model, optimal deviations eliminate unrecompensed effort, which promotes a bid but lowers post-takeover firm value. No such trade-off arises in the case of activism. Although unbundling drives a wedge between the activist’s voting power and economic interest, her economic interest per se may in fact increase. Unlike a bidder who buys a majority stake, the activist weighs gains in influence against losses from unrecompensed effort on the margin. She is hence inclined to buy more cash flow rights if they carry more voting rights. Moreover, since her involvement is temporary, this does not distort post-takeover incentives. As a matter of fact, unbundling by the activist is a means to reunify ownership and control in the hands of the bidder.

Our results on unbundling accentuate the differences between activism and tender offers noted earlier. The defining quality of activism is to exert influence.

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5A highly publicized collaboration involved pharmaceutical company Valeant and the hedge fund Pershing Square. With financial support from Valeant, Pershing Square accumulated a 9.7 percent toehold in Allergan and then pushed for a sale of the company to Valeant. The two parties were indeed sued for insider trading. Allergan was eventually sold to another firm, Actavis, but Valeant and Pershing Square are said to have jointly earned about $2.6 billion on their toeholds from the Actavis deal (see, e.g., De La Merced et al., 2014; and Benoit and Hoffman, 2014).
beyond the control vested in the equity stakes. This is the point of a campaign – and of unbundling. By contrast, tender offers are defined as the acquisition of a majority stake from dispersed shareholders, which is a reversal of the separation of ownership and control. The divergent impact of unbundling therefore resides in the inversion of conditionality.

We conclude the summary of our analysis by noting that it abstracts from freeze-outs, which have been shown to eliminate the free-rider problem in tender offers (Yarrow, 1985; Amihud et al., 2004), but only if the terms are immune to legal uncertainty (Müller and Panunzi, 2004). The analogous assumption for activists is that they, if hypothetically in possession of a majority stake, cannot force other shareholders to sell their shares, at least not without a judicial review that may award damages to minority shareholders. At the same time, we assume that a successful activist campaign induces management to negotiate a merger, or equivalently, that the outcome of a shareholder vote on a negotiated merger in the absence of a controlling owner is binding for all shareholders.

Related literature. TBD.
2 Tender offers

2.1 Model setup

Our tender offer model follows Burkart et al. (1998) but replaces diversion with effort as the post-takeover moral hazard problem. A widely held firm faces a potential acquirer, henceforth the bidder.

*Bidder.*—If the bidder gains control, she generates a value improvement

\[ V(e_b) = \theta_b e_b + \zeta \]

where \( e_b \geq 0 \) is the bidder’s post-takeover effort, \( \theta_b \geq 0 \) a measure of her ability, and \( \zeta \) a value improvement realized irrespective of effort. When exerting effort, the bidder bears private cost

\[ C(e_b) = \frac{c}{2} e_b^2 + \xi \]

where \( c \) parametrizes the marginal cost of effort and \( \xi \) the fixed cost of administering the takeover. All parameters are common knowledge, but effort is unobservable.

*Takeover rules.*—For a successful takeover the bidder must accumulate at least 50 percent of the voting rights, and all shares carry the same number of votes. For now, tender offers are the only admissible mode of takeover. When confronted with a tender offer, the incumbent management is assumed to remain passive. The bidder owns an initial stake (toehold) \( t_b \), which we assume to be less than \(.25\) of all shares (for reasons that will become apparent later).\(^6\)

*Sequence of events.*—The tender offer game unfolds as follows:

- In stage 1, the bidder makes a take-it-or-leave-it, conditional, restricted tender offer \((r_b, p_b)\) where \( r_b \) is the fraction of shares she offers to acquire and \( p_b \) the per-share cash price she offers, subject to her holding a final stake \( s_b \geq 0.5 \) greater or equal than 50 percent.

- In stage 2, the firm’s shareholders noncooperatively decide whether to tender their shares. Shareholders are assumed to be homogeneous and atomistic. They do not perceive themselves as pivotal for the outcome of the tender offer. More specifically, we follow the convention in tender offer models exploring the free-rider problem and assume a mass 1 of outstanding target shares that are (apart from the toehold) dispersed among an infinite number of shareholders whose individual holdings are both equal and indivisible.\(^7\)

- In stage 3, if the fraction of shares tendered is less than \(.5 - t_b\), the takeover fails. Otherwise the bidder gains control, pays the bid price and the fixed cost \( \xi \). Once in control, she decides on her effort \( e_b \).

\(^6\)Independent of our model, this is a generous upper bound in light of current ownership disclosure laws. For example, in the U.S. (UK), a shareholder must disclose her holdings once they exceed 5 percent (3 percent) along with any control intentions.

\(^7\)Relaxing these assumptions weakens Grossman and Hart’s (1980) result that the target shareholders extract all the gains in security benefits on tendered shares (Bagnoli and Lipman, 1988; Holmström and Nalebuff, 1992).
We conclude the model description with a parametric restriction which ensures that the bidder wants to generate value once she is in control. Define 
\[ \Delta_{s_b} \equiv \max_{e_b} s_b V(e_b) - C(e_b) \] 
with the implied firm value and effort costs denoted by \( V_{s_b} \) and \( C_{s_b} \). Then:

**Assumption 1.** \( \Delta_{s_b} > 0 \).

Given this assumption, the only reason a takeover may not take place is the free-rider problem. Note that the assumption also implies that any restricted takeover creates positive surplus: \( V_{s_b} - C_{s_b} > 0 \).

### 2.2 Dual free-rider problem and unrecompensed effort

Once in control, the bidder’s effort maximizes the value of her post-takeover stake net of effort cost, \( s_b V(e_b) - C(e_b) \). Our assumptions on \( V(.) \) and \( C(.) \) ensure that equilibrium effort is uniquely pinned down by the first-order condition \( e_b = \frac{s_b}{e_b} \). Optimal effort increases with the bidder’s productivity and post-takeover stake, and decreases with the marginal cost parameter.

Since shareholders are atomistic, each of them accepts the tender offer at stage 2 if and only if the bid price exceeds the expected post-takeover share value: \( p_b \geq E[V(e_b)] \). When this free-rider condition holds with equality, they are indifferent and may randomize between tendering and retaining their shares. As is common in the literature, we focus on Pareto-dominant equilibria by assuming that shareholders tender unless the price is strictly lower than the expected post-takeover security benefits,\(^8\) so that the bidder acquires \( r_b \) shares with certainty.\(^9\)

Under rational expectations, the free-rider condition then reduces to \( p_b \geq V(e_b) \). Since \( e_b \) increases with \( s_b \) and hence with \( r_b \), this relationship traces out an upward-sloping supply curve: the shareholders’ reservation price increases with the number of shares acquired by the bidder. As in Burkart et al. (1998), the more shares the bidder buys, the more value she is expected to create – which inclines shareholders to hold on to their shares unless the bid price increases.

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\(^8\)Shareholders that expect a conditional offer to fail are indifferent between tendering and retaining. Breaking the indifference in favor of retaining then supports failure as an equilibrium regardless of the price (Burkart et al., 2006). To avoid the co-existence of success and failure as equilibrium outcomes, it is often assumed that indifferent shareholders tender their shares, but this precludes failure as an equilibrium outcome for any conditional bid, and hence implies equilibrium inexistence when the free-rider condition is violated. Our assumption avoids this issue.

\(^9\)If bids were unrestricted, any equilibrium in which the takeover succeeds would feature \( r_b \) (randomly chosen) shareholders tendering such that \( p_b \geq E[V(e_b)] \) is exactly binding. Hence, allowing for restricted offers does not alter the set of equilibria, and spares us the equilibrium assumption that shareholders somehow coordinate on precisely \( r_b \) shares being tendered.
The bidder’s optimization problem at stage 1 is hence

\[
\begin{align*}
\text{maximize} & \quad s_b V(e_b) - C(e_b) - r_bw \\
\text{s.t.} & \quad p_b \geq V(e_b) \\
& \quad r_b \geq 0.5 - t_b \\
& \quad s_b V'(e_b) = C'(e_b) \\
& \quad s_b = t_b + r_b 
\end{align*}
\]

where (2) is the free-rider condition, (3) the majority constraint, (4) the post-takeover incentive constraint, and (5) the bidder’s post-takeover equity stake.

**Lemma 1** (Burkart et al., 1998). *In a successful tender offer, the bidder acquires \(0.5 - t_b\) shares, the smallest fraction needed for control.*

**Proof.** For any \(e_b\) and \(r_b\), the objective function decreases in \(p_b\). Hence, \(p_b\) is optimally set to its lower bound via (2): \(p_b = V(e_b)\). Substituting this into the objective function reduces the latter to \(t_b V(e_b) - C(e_b)\). Further substituting (4) for \(e_b\), and then differentiating with respect to \(r\) yields the derivative \(-\frac{5}{\zeta} \theta_b^2 < 0\). Hence, it is optimal to set \(r_b\) to its lower bound given by (3).

The target shareholders extract the full post-takeover gains on any tendered share through the bid price. This confines the bidder to gains from her toehold while she bears all the effort cost. Yet she sets post-takeover effort in accordance with her total stake, which includes all tendered shares. From an ex ante perspective, the bidder ends up “overworking” – and more so, the more shares she acquires. Hence, she is better off acquiring as few shares as needed to gain control.

Even so, a takeover may not always be profitable for the bidder.

**Proposition 1.** For \(t_b > \frac{c}{\zeta}\), there exists a unique \(\theta_b > 0\) such that tender offers are feasible if and only if \(\theta_b \leq \theta_b\). Otherwise, no tender offer takes place.

**Proof.** By Lemma 1, the bidder optimally acquires \(0.5 - t_b\) shares in a takeover. By (4), her optimal effort is \(\frac{5}{\zeta} \theta_b\), and since (2) is optimally binding, her ex ante profit from a takeover is \(\Pi^b = t_b V\left(\frac{5}{\zeta} \theta_b\right) - C\left(\frac{5}{\zeta} \theta_b\right) = (t_b - .25) \frac{1}{25} \theta_b^2 + t_b \zeta - c\). Given \(t_b < .25\), this quadratic function in \(\theta_b\) has one negative root and one positive root if \(t_b \zeta > c\), with positive value only in between. If \(t_b \zeta \leq c\), it is negative for all \(\theta_b \geq 0\).

For \(t_b < .25\), the bidder captures less than a quarter of the value she creates. In the case of a quadratic optimization program (as here), this is the range where the unrecompensed effort is so high that it poses an obstacle to a takeover: any increase in the bidder’s ex post incentives to create value decreases her ex ante

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\(^{10}\)The takeover literature has identified various sources of bidder gains in tender offers. Our analysis here focuses on toeholds for comparative purposes because they constitute the main source of gains for activists (e.g., Becht et al. 2009; Brav et al. 2010). Brav et al. (2010) report that the median activist toehold in their sample is 6.3%.
profit. As a result, more able bidders fare worse, and may find a bid unprofitable. Indeed, the bidder gains only on her share of the exogenous value improvement, which is why the takeover is frustrated for all $\theta_b$ if $t_b \zeta \leq c$.

There are three fundamental reasons for this market failure. First, the lack of coordination among shareholders causes them to demand a price that reflects the full value improvement generated by the bidder but none of her private costs ((2)). From the bidder’s point of view, the price is thus too high. Second, the inflated price notwithstanding, the bidder has to buy at least $0.5 - t_b$ shares to gain control ((3)). Third, the bidder can at the offer stage not commit to work less than her post-takeover stake incentivizes her to do, nor will the remaining minority shareholders share the effort costs ((4)).

We can also use the optimization constraints (2)-(4) to expose the intuition behind Proposition 1: Because dispersed shareholders free-ride on others’ efforts, anyone’s incentive to improve value is limited by the size of her individual stake ((4)). This problem per se can be solved by concentrating ownership. However, all the gains on shares acquired for this purpose are extracted by the free-riding shareholders, so that anyone seeking a larger stake must provide unrecompensed effort ((2)). We refer to this dilemma – lack of incentives versus unrecompensed effort – as the dual free-rider problem. The specific governance mechanism of a takeover is defined by the acquisition of a majority stake ((3)). It thus mitigates the first problem but exacerbates the second, and more so when the marginal return to effort is high.

**Corollary 1.** $\theta_b$ is increasing in $t_b$ and $c$.

The range of $\theta_b$ for which tender offers are feasible increases with $t_b$ and $c$. A larger toehold $t_b$ increases the bidder’s share in the exogenous value improvement and mitigates the endogenous unrecompensed effort problem by reducing the
number of additional shares the bidder must acquire to gain control. The impact of the marginal cost parameter $c$ is the exact inverse to that of her ability $\theta_b$. A higher $c$ decreases the bidder’s ex post incentives, which reduces unrecompensed effort and hence increases her ex ante profit.

3 Investor activism

3.1 Model extension

Suppose the same widely held firm faces an activist investor, henceforth the activist, in addition to the bidder. For clarity of exposition, we will first analyze the case where tender offers are infeasible ($\theta_b > \theta_b$). This allows us to cleanly uncover why activism can work and to identify the source of its advantage (Section 3.2). Thereafter, we turn to the case where tender offers and activism co-exist as feasible forms of intervention (Section 3.3).

Activist.—The activist intends to campaign for a sale of the firm to the aforementioned bidder. If launched, the campaign succeeds with probability

$$q(e_a) = v_a \theta_a e_a$$

where $e_a \geq 0$ is the activist’s effort, $\theta_a \geq 0$ a measure of her ability, and $v_a$ her equity voting rights. Under one-share-one-vote, $v_a$ equals the activist’s equity stake $s_a$ at the time of the campaign. Although $q(.)$ depends explicitly on voting rights, our reduced-form specification is agnostic as to how a campaign success comes about and does not presume an actual vote. Activists often proceed from informal communication, over consent solicitations or shareholder proposals, to proxy fights depending on the management’s resistance (Gantchev, 2013). The management may be more willing to agree to demands before an escalation if the threat of hostile tactics is larger, which in turn may increase with the activist’s voting power.\textsuperscript{12}

When exerting effort, the activist bears the private cost

$$K(e_a) = \frac{k}{2} e_a^2 + k$$

where $k$ parametrizes the marginal cost of effort and $k$ the fixed cost of a campaign.\textsuperscript{13} All parameters are common knowledge, but effort is observable only to the activist.

\textsuperscript{11}In their sample of 611 activist campaigns with well-specified objectives, Brav et al. (2010) find that 31.3 percent and 21.1 percent were, respectively, successful and partially successful in achieving their objective, leaving 47.6 percent of failed campaigns.

\textsuperscript{12}For example, in 2012, TPG/Axon engaged SandRidge Energy with a consent solicitation, successfully forcing the CEO to resign and capturing four of eleven board seats. In 2013, Relational Investors in cooperation with the institutional investor CalSTRS submitted a Rule 14a-8 shareholder proposal and started a public relations campaign that successfully led to a split-up of Iniken.

\textsuperscript{13}The costs of an activist campaign can be substantial. Using a sample of 1,492 hedge fund campaigns between 2000 and 2007, Gantchev (2013) estimates the average cost of a campaign at $10.5 million, or about one-third of the average gross return.
The activist has accumulated an initial stake $t_a < .25$ prior to disclosing her intent. After the disclosure but before launching a campaign, the activist can purchase additional shares in the open market. Subsequently, we exclude “solutions” in which the activist merely sells her toehold to the bidder, since this would be equivalent to the tender offer game with a larger bidder toehold. To emphasize the point that “doubling the toehold” is not the role of activism, we impose that $t_a + t_b \leq 1$.

**Governance rules.**—If $s_a \geq .5$, the activist can effect a control transfer without any effort, but neither she nor the bidder can freeze out minority shareholders, that is, force them to sell their shares at the same price. This rule protects minority shareholders from potential expropriation by controlling shareholders. If $s_a < .5$, the activist can induce a control sale only by mobilizing additional votes, which requires effort. But in this case, we assume that a majority vote is binding for all shareholders.

**Sequence of events.**—The activism game unfolds as follows:

In stage $-3$, the activist discloses her intent and can purchase $r_a$ shares in the open market at the market price $p_a$. As the target shareholders in a tender offer, open-market traders are homogeneous and atomistic price-takers, who do not perceive themselves as pivotal to the success of a campaign. (Equivalently, we could assume that the activist buys shares from a market maker who takes a short position to accommodate the trade.) To level the playing field, we abstract intentionally from “noise traders” who would otherwise constitute an exogenous source of speculative gains for activists, but not bidders.

In stage $-2$, the activist decides whether to launch a campaign, and if so, pays the fixed cost $k$ and chooses her effort $e_a$.

In stage $-1$, if the campaign fails, the game ends. Otherwise the activist negotiates a sale of the company. We assume for now that the activist has full bargaining power and makes a take-it-or-leave-it offer $(r_m, p_m)$ to the bidder.**14** (We consider alternative settings later.)

In stage 0, if the bidder rejects the activist’s offer, the game ends. Otherwise the bidder gains control, pays the acquisition price and the fixed cost $c$ of administering the takeover, and then decides on her effort $e_b$. If $s_a < .5$, the control sale is pro-rated among all shareholders. If $s_a \geq .5$, minority shareholders are not obliged to sell their shares.

**Judicial standards of review.**—Our model assumes that the legal treatment of control sales depends on whether there is a controlling owner ($s_a \geq .5$) or not ($s_a < .5$). Under Delaware law control sales without a controlling owner fall under the *business judgement rule*, whereby courts do not second-guess well-informed, good-faith board decisions made under a reasonable decision-making process. If the sale process is *initiated* by the board possibly out of self-interest, it may trigger a heightened standard of review, but such *Revlon duties* typically do not apply when the target firm is “put in play,” as e.g., by an activist investor

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**Footnotes:**

14 If the offer is pro-rated among all shareholders, $r_m < 1$ can be interpreted as a restricted cash bid or as a cash-equity bid in which shareholders receive cash plus $1 - r_m$ shares in the post-merger company.
A control sale negotiated under the pressure of a shareholder campaign, as in our model, is hence likely to be upheld.

The sale of a firm whose board is controlled by a majority owner usually falls under the entire fairness doctrine. (This may be especially true if the majority stake was acquired for the purpose of "flipping" the firm to a particular bidder.) In order to protect minority shareholders, entire fairness is a stricter standard that puts the burden of proof on the board to demonstrate that the transaction under review is "inherently fair" to all shareholders. Such transactions are hence more likely to be challenged in court. As Müller and Panunzi (2004, Section V) show, the possibility of rescissory damages that award minority shareholders the equivalent of the post-merger share value fully restores the free-rider problem, although the majority owner can single-handedly transfer control.

In the absence of a controlling owner, even if the courts determined a breach of fiduciary duty in the sale process, the judicial decision would likely enjoin or amend the transaction in such a way that benefits all (activist and non-activist) shareholders alike, in which case no strict subset of shareholders can extract the post-merger value, and a transaction in which all shareholders extract that value would preclude the bidder’s participation (at least in our model). In summary, our results are robust to governance rules under which (i) activist-driven control sales reviewed under the business judgment rule are certain to be upheld against challenges by passive target shareholders, whereas sales by a majority-controlled board reviewed under the entire fairness doctrine are not, or (ii) both types of transaction are susceptible to legal risk but only the latter can lead to rescissory damages exclusive to non-activist (minority) shareholders.\(^{15}\)

### 3.2 Brokering control change

As established before, the bidder’s optimal effort is determined by the post-takeover incentive constraint (4). When a campaign has succeeded, the activist’s take-it-or-leave-it-offer to the bidder in stage \(-1\) maximizes the value of the activist’s stake subject to the bidder’s incentive constraint (4) and participation constraint \(s_b V(e_b) - C(e_b) - r_m p_m \geq 0\).

**Lemma 2.** In a successful control sale, the bidder acquires \(r_m = 1 - t_b\) shares if \(s_a < 0.5\), and otherwise only the activist’s stake \(r_m = s_a\). In either case, \(p_m = \Delta s_b / r_m\).

**Proof.** For any \(r_m\), the activist’s payoff increases in \(p_m\). Hence, she optimally sets \(p_m\) to make the bidder’s participation constraint bind which, subject to (4), yields \(p_m = \Delta s_b / r_m\). In the case of \(s_a \leq 0.5\), the activist chooses \(r_m\) to maximize the total value that will be pro-rated among all target shareholders: \(r_m p_m + (1 - r_m) V_{s_b}\). Substituting for \(p_m\), this becomes \((1 + t_b) V_{s_b} - C_{s_b}\). By the envelope theorem, \((r_m + t_b) V_{s_b} - C_{s_b}\) is increasing in \(s_b\) and hence in \(r_m\).

\(^{15}\)Nowadays, virtually all major M&A transactions in the U.S. attract shareholder litigation. In 2013, lawsuits were filed against 97.5 percent of deals with a transaction value greater than $100 million (Cain and Solomon, 2014).
which implies that \((1 + t_b)V_{s_b} - C_{s_b}\) is increasing in \(r_m\) as well. So, \(r_m = 1 - t_b\).

In the case of \(s_a > .5\), minority shareholders tender if and only if \(p_m \geq V_{s_a}\).

Substituting for \(p_m\), this inequality becomes \(t_b V_{s_b} - C_{s_b} \geq 0\), which is violated for \(\theta_b > \overline{\theta}_b\) (see Proposition 1), the case under consideration here. Thus, minority shareholders do not join the control sale for any \(r_m\). The activist still maximizes \(r_m p_m + (1 - r_m)V_{s_b}\), except that she sells only her own shares and \(r_m \leq s_a\), and so it remains optimal to maximize \(r_m\). Thus, \(r_m = s_a\).

With full bargaining power, the activist negotiates a price that extracts the entire surplus \(\Delta_{s_b}\) – value improvement net of effort costs – from a control sale. Because this surplus increases with the bidder’s post-takeover stake \(s_b\), the activist wants her to acquire as many shares as possible. However, the dispersed, free-riding shareholders simply compare the negotiated price with the security benefits gross of effort costs, and since the latter is always larger, do not tender unless they are obliged to by the merger agreement or majority vote following a successful campaign.

_Bebchuk (1994)._—The inefficiencies identified by Bebchuk for the sale of a majority stake \((s_a \geq .5)\) do not apply here for two reasons. First, the activist is not a controlling shareholder in the usual sense: she enjoys no private control benefits and her only source of gains are the sale proceeds. Second, the bidder will increase the security benefits rather than extract more private benefits. For these reasons, the distinction between market rule and equal opportunity rule is immaterial in our setting, since shareholders prefer to retain their shares than sell them at the same terms as the activist. The source of inefficiency in Lemma 2 is that, even though the takeover surplus increases in the fraction of shares sold, minority shareholders do not participate in the sale due to the free-rider problem.

_Bebchuk and Hart (2001)._—Under our assumed governance rules, a control sale with \(s_a < .5\) implies that the activist campaign has led to a collective decision all shareholders are bound to. A simple and realistic interpretation of this outcome is that the activist has pressured the board into recognizing that fiduciary duty compels it to negotiate a merger with the bidder. Another possibility is a proxy vote regarding the control sale as proposed by Bebchuk and Hart. As they point out, it is crucial that the vote be a “necessary and sufficient condition” for the control sale, sufficiency implying that the vote is binding. Otherwise it cannot overcome the free-rider problem. Our assumptions invoke the same sufficiency condition. But this does not per se restore efficiency in our setting where waging a proxy fight requires costly activism which, as we analyze further below, exposes the activist to the same free-rider problem.

At stage \(-2\), the activist must only pay the fixed campaign costs but needs no effort to succeed if she has acquired sufficiently many shares at stage \(-3\) so that \(s_a \geq .5\). As it turns out, such a strategy does not improve upon a tender offer.
Lemma 3. Activism cannot add value by flipping a majority stake \((s_a \geq .5)\).

Proof. For any \(r_a\) such that \(s_a = t_a + r_a \geq .5\), the upper bound on what the activist is willing to pay is given by \(s_a p_m - r_a p_a \geq 0\), which yields \(p_a \leq \frac{s_a}{r_a} p_m\). By Lemma 2, if \(s_a > .5\), then \(p_m = \frac{\Delta_{s_a}}{r_m}\) where \(r_m = s_a\). Substituting this into the previous inequality yields \(p_a \leq \frac{\Delta_{s_a}}{r_a}\). A non-pivotal shareholder who believes the activist’s offer to succeed expects the post-takeover share value \(V_{s_b}\) if she instead retains her shares. Hence, the open-market offer can only succeed if \(\Delta_{s_b} \geq r_a V_{s_b}\) where \(s_b = t_a + t_b + r_a\). If so, the activist’s profit is \(\Delta_{s_b} - r_a V_{s_b}\), which is exactly the same profit a bidder would make from a tender offer in which she owned a toehold of size \(t_a + t_b\) and bought \(r_a\) shares from dispersed shareholders. This implies that the activist could make the same profit by selling her toehold directly to the bidder. \(\square\)

For \(s_a \geq .5\), the highest price the activist can negotiate in a control sale is the expected post-takeover surplus \(\Delta_{s_b}\) (net of effort costs) per share. Shareholders that do not sell their shares instead expect to receive the post-takeover share value \(V_{s_b}\) (gross of effort costs), which is always larger. That is, the open-market price exceeds the per-share price the activist can negotiate in a control sale. The activist may actually be able to pay this “premium” out of the gains she expects from her own toehold in a control sale. Nonetheless, this two-stage process does not mitigate the free-rider problem, because at no stage do dispersed shareholders sell shares at a price below \(V_{s_b}\). Thus, they extract the same surplus as from an ordinary tender offer, making the strategy equivalent to selling the toehold to the bidder who then stages a tender offer, a block trade that few would consider activism.16

Cornelli and Li (2002).—In practice tender offers sometimes induce risk arbitrageurs to buy target shares in the secondary market in the hope that the takeover will succeed. Cornelli and Li show that such arbitrage activity itself can increase the success probability, that is, mitigate the free-rider problem. If arbitrageurs buy non-atomistic stakes that sum up to a control majority, there is a mixed-strategy equilibrium in which they tender their shares with positive probability even for bid prices below the post-takeover share value.17 Crucial for this collective “flipping” to be profitable is the presence of noise traders in the open market, which allows arbitrageurs to buy shares without fully facing the free-rider problem themselves. The absence of noise traders in our setting precludes such arbitrage by subjecting everyone equally to the free-rider problem. Yet what matters more is a fundamental difference in approach: Arbitrageurs

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16Lemma 3 relies on our assumption that a controlling shareholder cannot unilaterally force minority shareholders out of the firm (without being possibly liable for rescissory damages). It is worth mentioning that even if she could, the “flipping” strategy would merely be equivalent to a “freeze-out” takeover executed directly by the bidder, again leaving no distinct role to activism.

17This builds on earlier results that the presence of non-atomistic shareholders weakens the free-rider problem (see fn. 7).
use trading to raise the success probability of a tender offer, whereas take-over-driven activists exercise governance to instead bring about a negotiated control sale.

Since the activist adds no value by simply being a pass-through for a majority stake, nothing is gained by her involvement unless she can induce a control sale at a price below $V_s$, through a “collective” decision, such as a binding shareholder vote or merger agreement. But campaigning for such an outcome requires effort. If successful, it effects the sale of the whole firm for $(1-t_b)p_m = \Delta_1$, of which the activist receives a share $s_a$. At stage $-2$, she hence exerts effort to maximize $s_a V(e_a) - K(e_a)$ where $V(e_a) = q(e_a)p_m$ is the expected share value under activist effort $e_a$. The first-order condition is $e_a = \frac{V_0(e_a) - V(e_a)}{K'(e_a)}$. Optimal effort increases with the activist’s influence $v_a$, ability $\theta_a$, economic interest $s_a$, and the expected price $p_m$ in a control sale, and it decreases with the cost parameter $k$. We assume $k$ large enough such that $q < 1$ under this effort.

At stage $-3$, dispersed shareholders sell shares in the open market only if the price they receive exceeds the expected share value: $p_a \geq V(e_a)$. The activist’s open-market share purchase problem can hence be written as

\[
\begin{align*}
\text{maximize} & \quad s_a V(e_a) - K(e_a) - r_a p_a \\
\text{s.t.} & \quad p_a \geq V(e_a) \\
& \quad r_a < .5 - t_a \\
& \quad s_a V'(e_a) = K'(e_a) \\
& \quad s_a = t_a + r_a
\end{align*}
\]

This is nearly identical to the bidder’s constrained optimization problem (1)-(5) studied in Section 2.2. Most importantly, the free-rider condition (7) and the incentive constraint (9), are the exact analogues of (2) and (4) in the bidder’s problem. Like the bidder, the activist cannot extract any gains on the shares she buys from the target shareholders, nor on the shares that they retain, thus capturing gains only on her toehold (see Figure 2). In other words, she cannot evade the free-rider problem by working to attain control instead of buying it. Moreover, the campaign introduces deadweight costs. The activist can nonetheless add value because her problem (6)-(10) has a qualitatively different solution than the bidder’s problem (1)-(5) due to some fundamental differences. (For expositonal purposes, we will highlight those differences in bold.)

**Proposition 2.** The activist acquires \( \frac{1}{k} \) additional shares in the open market.

**Proof.** For any $e_a$ and $r_a$, the objective function decreases in $p_a$. Hence, $p_a$ is optimally set to its lower bound via (7): $p_a = V(e_a)$. Substituting this into the objective function reduces the latter to $t_a V(e_a) - K(e_a)$. Further substituting $v_a = s_a$ and (9) for $e_a$ yields $f(s_a) = \frac{1}{2} \gamma^2 \theta_a^2 \left[ t_a s_a^3 - \frac{1}{2} s_a^4 \right] - \frac{2}{k}$. Since $s_a > t_a$, $f''(s_a) = \frac{9}{2} \gamma^2 \theta_a^2 (t_a - s_a) s_a < 0$, and the unique maximum of $f$ with respect to $s_a$ is pinned down by the first-order condition $\frac{9}{2} \gamma^2 \theta_a^2 [3t_a - 2s_a] s_a^2 = 0$, which yields the result. \( \square \)
In a tender offer the bidder buys enough shares to gain majority control but avoids buying any more shares due to unrecompensed effort. Even though the activist is subject to the same free-rider problem but not the majority requirement, she voluntarily purchases additional shares. This is because the expected share price appreciation $V$ under the activist depends on her equity stake $s_a$ through her effort incentives and her voting power $v_a$. Hence, she buys shares not to increase economic ownership but to “buy influence,” which increases the returns on her initial stake.\(^\text{18}\) No such motive exists for the bidder as a takeover is defined by full control through a majority stake.\(^\text{19}\)

Still, buying shares exposes the activist to unrecompensed effort. By limiting her open-market purchase, she optimally weighs the benefit of influence against this cost. It is instructive to single out the two key frictions: Without the free-rider condition (7), the activist would buy more shares, since she is about to improve their value. Without the incentive constraint (9), she would avoid “overworking” and buy shares even at $p_a = V(e_a)$, using the additional voting power to increase the value of her toehold. The duality of the free-rider problem is thus crucial for the result that the activist engages the firm with a limited stake size.\(^\text{20}\)

We now turn to the activist’s decision to launch a campaign.

**Proposition 3.** There exists a unique $\theta_a > 0$ such that activism is feasible if and only if $\theta_a \geq \theta_a^*$.

**Proof.** By Proposition 2, $s_a = v_a = \frac{4}{3} t_a < .375$, so (8) holds and $e_a = \frac{\theta_a}{k} \frac{9}{4} t_a^2 p_m$.

\(^{18}\)This is consistent with the fact that activists with “hostile” intentions acquire larger stakes (Brav, Jiang, Kim, 2010). If the stakes were driven only by financial considerations, they would arguably be larger in cases where changes are easier to elicit from management.

\(^{19}\)The insight that the activist buys shares to gain influence does not hinge on our particular specification of $q(.)$ whereby voting power increases the marginal return to effort. (Possible justifications for this assumption are that the activist can more effectively exert pressure on the management or that she is more credible when lobbying other shareholders for support.) The result obtains for any specification with $\partial q/\partial v_a > 0$, under which the success probability for any given effort increases with voting power, irrespective of the cross-derivative. In fact, the activist is more eager to buy shares if the voting power does not increase her ex post incentives.

\(^{20}\)In the sample of Brav et al. (2010), the maximum stake accumulated by the median hedge fund during a campaign is 9.5 percent.
by (9). With (7) optimally binding, the activist’s expected profit from a campaign is
\[ t_b V \left( \frac{p_a}{2} \frac{r_a^2}{4} p_m \right) - K \left( \frac{p_a}{2} \frac{r_a^2}{4} p_m \right) = \theta_a^2 \frac{\sigma}{h^2} r_a^2 p_m^2 - \zeta. \] This is positive if and only if \( \theta_a \) is positive and sufficiently large.

Although faced with the exact same frictions, a tender offer is feasible only if the bidder’s ability is below an upper bound \( \theta_b \), while activism is feasible only if the activist’s ability is above a lower bound \( \theta_a \). This contrast is due to the absence of the majority requirement (3) in Proposition 2. The majority stake leads the bidder to provide unrecompensed effort, so much that any increase in incentives reduces her profit and can frustrate a bid. By limiting her stake, the activist constrains her effort to a low level which is privately optimal, but if too low to recoup the fixed costs, does not support a campaign. At this effort level, however, her profit increases with stronger incentives, that is, higher ability \( \theta_a \).

So the contrast between tender offers and activism is driven by the absence of the majority constraint (3) in the activist’s optimization problem. This is by no means an artefact of willful assumptions but defines the difference between these governance mechanisms. A takeover is the acquisition of a majority stake, while activism connotes a minority stake (else it would be redundant). More fundamentally, it implies an inversion of conditionality between control and effort: bidders buy control to work, while activists work to control. What our analysis shows is that this inversion amounts to picking opposite evils under the dual free-rider problem: takeovers raise incentives but induce unrecompensed effort, while activism avoids unrecompensed effort but raises incentives less. The crux is that profits at these effort levels react contrarily to changes in marginal return to effort.

The activist’s marginal return to effort also depends on bidder characteristics that affect the surplus from the takeover that she campaigns for. Hence, a similar comparative static as in Proposition 3 applies to bidder ability:

**Proposition 4.** There exists a unique \( \theta_b \geq 0 \) such that activism is feasible if and only if \( \theta_b \geq \theta_b^{*} \).

**Proof.** As shown in the proof of Proposition 3, the activist’s expected campaign profit is \( \theta_a^2 \frac{\sigma}{h^2} r_a^2 p_m^2 - \zeta \). By Lemmas 2 and 3, \( p_m = \frac{\Delta_1}{1-r_b} \). The result follows from \( \Delta_1 = \max_{a} V(e_a) - C(e_a) = \max_{a} \theta_b e_b + \zeta - \frac{c}{\zeta} e_b^2 - \zeta \) being increasing in \( \theta_b \) by the envelope theorem.

Moreover,

**Corollary 2.** \( \theta_b \) is increasing in \( c \) and decreasing in \( t_b \).

**Proof.** It is straightforward to show that \( \partial \Delta_1 / \partial c < 0 \) and \( \partial \Delta_1 / \partial t_b > 0 \), which in combination with \( \partial \Delta_1 / \partial \theta_b > 0 \) (Proposition 3) proves the result.

As in the case of tender offers, a larger toehold \( t_b \) reduces the surplus appropriated by free-riding shareholders and thus benefits the activist who extracts part (or here all) of the remaining surplus. The effect of \( \theta_b \) and \( c \) on activism is,
however, the inverse of their effect on tender offers, for reasons that are perhaps most clearly explained in three steps:

First, any gain ultimately stems from the bidder’s ability to create value. Hence, despite all aforementioned differences, activism cannot be profitable unless it relieves the bidder of the free-rider problem. This is the raison d’être of activism in our framework and is achieved through the control sale following a successful campaign. Without the unrecompensed effort problem, the bidder’s profit increases in her ability, which in turn implies that the expected proceeds from a control sale increase as well.

Second, the activist loads the free-rider problem onto herself, with the bidder’s ability (via the control sale price) now increasing the activist’s marginal return to effort. If her strategy were the same as the bidder’s, nothing would be gained. However, unlike the bidder, the activist benefits from a larger marginal return to effort. Thus, the key is that the shift of the free-rider problem is combined with the inversion of conditionality.

Third, the free-rider problem still imposes constraints on the purchase of shares and hence the provision of effort, but it now does so at the level of the activist. Since the activist’s stake is not the ultimate ownership structure that determines post-takeover incentives, the free-rider problem reduces only the probability of a takeover but not – unlike in a tender offer – the post-takeover value. Shifting the free-rider problem to an investor with transitory ownership is thus another advantage of activism.

On balance there are, of course, also advantages to tender offers. First, activism introduces further costly effort, which, unlike the bidder’s effort, represents a deadweight loss from a first-best perspective. (By contrast, unrecompensed effort involves no deadweight loss per se but a redistribution of rents.) Second, the bidder, once in control, may have access to gains that do not require effort or do not accrue in the form of equity appreciation, notably private benefits of control that are unavailable to the activist. The exogenous improvement $\zeta$ plays a similar role in our model, because it partly accrues to a successful bidder without effort. It would be easy to amend the model to incorporate control benefits.

Proposition 4 distills these comparative advantages into a key observation: activism and tender offers are contrarily affected by (changes in) $\theta_b$ and $\theta$, and hence are effective governance mechanisms at opposite ends of the distribution of parameters that determine the (first-best) post-takeover value. Last, note that the bidder ability cutoff $\overline{\theta}_b$ below which tender offers are feasible may be smaller or larger than the bidder ability cutoff $\overline{\theta}_a$ above which activism is feasible. For example, $\overline{\theta}_a$ is decreasing in $\theta$, since activist and bidder abilities are substitutes in that either increases the returns to activism. By contrast, $\overline{\theta}_b$ is independent of $\theta_a$. Thus, there exist $\theta_a$ low enough such that $\overline{\theta}_b > \overline{\theta}_b$, in which case either tender offers or activism (or neither) is feasible. Conversely, there exist $\theta_a$ high enough such that $\overline{\theta}_b < \overline{\theta}_b$, in which case tender offers and activism can co-exist. In the next section we turn our attention to the latter case of co-existence.

Admati, Pfleiderer, and Zechner (1994).—In our setting the activist merely
brokers a control change, leaving real changes to be implemented by the bidder after the control sale. In practice activists do not always pursue a sale of the target but sometimes lever the incumbent management into enacting real changes, thereby acting as large active shareholders rather than control brokers. Since the incentives of a large shareholder to implement changes depend on the size of her stake, it would seem more effective to (use the campaign to) instead bring about a takeover. In practice, a better rival management does not always exist. Moreover, as Admati, Pfleiderer, and Zechner stress, the incentive benefits of ownership consolidation must be weighed against the loss of diversification. Thus, risk aversion would introduce a trade-off between “takeover” activism and “large shareholder” activism. The inversion of conditionality relative to tender offers holds irrespective of the activist’s specific objective.

3.3 Acquisition mode and depth in the control market

To examine what happens when both forms of intervention are feasible, we analyze a slightly modified activism game: If the activist fails to bring about a control change – be it because she does not launch a campaign, her campaign fails, or her control sale offer is declined – the game moves to stage 1 and the tender offer game, studied in Section 2, ensues.

The formal analysis retraces the same steps of backward induction as before, and is for expositional convenience relegated to the Appendix. Here we restrict ourselves to describing the main effects. With a tender offer as a fallback in the activism game, both the bidder and the activist have higher outside options, which tightens their participation constraints and in turn affects prices and incentives.

To be more specific, reconsider first the price negotiations for the control sale at stage 1 when the bidder can opt for a tender offer in which she would make a profit of \( \Pi_b^t \). With full bargaining power, the activist still extracts all bilateral gains from a control sale, but the increased outside options reduce these gains. As a result, the price falls to \( p_m = (\Delta_1 - \Pi_b^t)/(1 - t_b) \). Moving back to stage 2, this in turn lowers the marginal return to activist effort. This mitigates the unrecompensed effort problem, but the positive effect on the activist’s expected profit is second-order compared to the price decrease that triggers it. Thus, the returns to activism fall. Moreover, the activist can also fall back on a tender offer and “free-ride” on a toehold gain of \( t_a V_a \) instead of embarking on a campaign. Overall, activism becomes less likely: when \( \theta_b < \theta_a \), a campaign requires the activist’s ability to exceed a threshold level \( \theta_a^* \) that is higher than the previously derived \( \theta_a \).

Along the boundary defined by \( \theta_a^* \), the optimal form of intervention “switches” in response to parameter changes, which hence affect the relative incidence of tender offers, investor activism, and control sales.

**Proposition 5.** Lowering \( k \) reduces tender offers, raises activism, and promotes merger activity.

**Proof.** See Appendix. \( \square \)
Changes in shareholder communication laws that make it easier for activist investors to mobilize support and coordinate efforts (in “wolfpacks”) have been shown to correlate with subsequent increases in activism (Fos, 2013). Our model suggests that there should be a parallel increase in negotiated mergers and acquisitions. Moreover, this increase represents in part a deepening of the market for corporate control, i.e., control changes that would otherwise not have taken place, and in part a substitution away from tender offers whose incidence consequently decreases.

More generally, our model predicts a supply-demand relationship between activism and takeovers. Proposition 5 in essence describes that a rise in activism increases the supply of targets to the market for corporate control. Comparative statics on parameters that affect the demand for takeovers, such as an increase in exogenous synergies $\Gamma$ or upward shift in the distribution of bidder ability $\theta_b$, would invite more activism. Both effects imply comovement of activism and M&A activity.

We now turn to the welfare implications of activism on all target shareholders (and follow the convention of excluding the incumbent management). When $\theta_b > \overline{\theta}_b$ such that tender offers are infeasible, activism obviously improves value. This is also true for any activism that emerges when both forms of intervention are feasible.

**Proposition 6.** For given toeholds, activism is Pareto-improving.

*Proof.* See text below. \qed

For the bidder and the activist, the result follows from revealed preference: Neither a control sale nor a campaign materialize unless they are preferred by both, regardless of whether the alternative is a tender offer or the status quo. As regards dispersed shareholders, they receive the same price in a control sale and the same outside option as the activist, but do not share the campaign costs.
Hence, whenever the activist gains from a campaign, dispersed shareholders do so a fortiori.

The welfare gains can come from the extensive or the intensive margin. In the deepening region \((\theta_b > \overline{\theta}_b)\) activism facilitates control changes where otherwise there would be none. By contrast, in the substitution region \((\theta_b \leq \overline{\theta}_b)\), successful activism induces full mergers instead of restricted tender offers, a consolidation of ownership that leads to greater post-takeover value creation.

We conclude this section with a remark on a potential link between tender offers and activism that our model does not cover: the alternative of a hostile bid can make the incumbent management more susceptible to activist demands. In this case, the feasibility of a tender offer would not only tighten the activist’s and the bidder’s participation constraints, but it would also raise the marginal return to activist effort. This positive “externality” of a (potential) tender offer would make it, ironically, more likely that it is made obsolete by activism, thus reinforcing the substitution effect in our model.

4 Hold-up and bidder-activist collaboration

We now turn to the welfare impact of distributional factors, such as bargaining power and the toehold allocation, which will lead to a discussion of the delicate relationship between the activist and the bidder.

We now relax the assumption that the activist has full bargaining power. This affects the outcome only through the control sale. Thus, we can incorporate bargaining power as the bidder’s share of the increase in the surplus generated by a control sale relative to the outside options. Specifically, let \(\delta \in (\underline{\delta}, \overline{\delta})\) be the fraction of the total post-control net value \(\Delta_1\) appropriated by the bidder. When a tender offer is feasible, the outside option of the bidder is \(\Pi_b^{\delta}V_5\) and that of target shareholders \((1-t_b)V_5\). Hence, the boundaries \(\underline{\delta}\) and \(\overline{\delta}\) are defined by \(\underline{\delta}\Delta_1 = \overline{I}_b^{\delta}\Pi^{\delta}_5\) and \(\overline{\delta}\Delta_1 = \Delta_1 - \overline{I}_b(1-t_b)V_5\), where \(\overline{I}_b = 1\) if \(\theta_b \leq \overline{\theta}_b\) and \(\overline{I}_b = 0\) otherwise. Note that activism cannot be profitable unless \(\Delta_1 \geq \Pi_b^{\delta} + (1-t_b)V_5\).

Our next result describes the impact of \(\delta\) on the bidder’s expected payoff

\[
E(\Pi_b) = q(e_a)\delta\Delta_1 + [1-q(e_a)]\overline{I}_b\Pi^{\delta}_5
\]  

(11)

and on expected takeover surplus

\[
E(\Delta_{s_b}) = q(e_a)\Delta_1 + [1-q(e_a)]\overline{I}_b\Delta.5.
\]  

(12)

Lemma 4. For given toeholds, increasing the bidder’s bargaining power lowers total surplus, but first raises and then lowers the bidder’s expected profit.

Proof. See Appendix.

Shifting bargaining power towards the bidder decreases the return to activism and hence the activist’s effort and her willingness to launch a campaign. This reduces efficiency since activism is an attempt to raise total surplus from
\( \mathbf{1}_b \Delta_{1.5} \to \Delta_1 \). This is also why the bidder's expected profit is non-monotonic in her own bargaining power: While her share of the surplus from a control sale rises, the probability that such a sale takes place falls.

The key to Lemma 4 is that the activist and bidder effectively collaborate to obtain ownership from the target shareholders and raise post-takeover value. This collaboration creates a variant of the hold-up problem: The campaign is effectively an *ex ante relationship-specific* investment by the activist, which is frustrated if the bidder has too much bargaining power in the *ex post* negotiation.

They could avoid this problem through an explicit contract that fixes the terms of the potential control sale prior to the activist campaign. But forbidding the other shareholders, who are in the majority, to later revise these terms or to instruct management to maximize the sale price on their behalf would appear to violate their formal rights. Alternatively, leaving the price to be determined when everyone is “at the table” but pre-negotiating contingent side payments between the bidder and the activist would violate the (rule of) equal treatment of shareholders in takeovers. Because of these restrictions on the contract space, the bidder and the activist collaborate under an “incomplete contract.”

Without the possibility to contract on ex post payments, they may instead attempt to coordinate on ex ante measures that affect surplus division. Given legal limits on secretly acquiring ownership with control intentions, coordinating on the allocation of toeholds is such a measure. The toehold allocation affects activism through two channels: First, a larger toehold confers more influence on the activist, both directly and by inducing a larger purchase of additional shares post-disclosure. Second, when tender offers are feasible, the toeholds determine the outside options in the control sale negotiation; in this sense, toeholds play the same role as the allocation of property rights emphasized in the incomplete contract literature.

To study this issue, suppose a latent bidder (secretly) discloses her takeover intentions to an activist in hope of an “informal cooperation,” and that the sum of their toeholds is subject to the constraint \( t_a + t_b \leq \bar{t} \leq .25 \). The next result compares the socially optimal toehold allocation in this setting with the toehold the bidder would voluntarily “concede” to the activist:

**Proposition 7.** The socially optimal toehold allocation is either \( t_a = \bar{t} \) or \( t_a = \max \{ t_a | I_b = 1 \} \). The bidder’s optimal toehold allocation \( t_a^* \) increases in her bargaining power, and may deviate from the socially optimal allocation.

*Proof. See Appendix.*

The post-takeover value depends only on the ultimate ownership structure, which is independent of toeholds both in control sales (where the whole company is sold) and in tender offers (where the bid is maximally restricted). The toehold allocation does, however, affect the private incentives to intervene, which is why the socially optimal allocation depends on the relative efficiency of the two forms of intervention: it either leaves the bidder with the minimum toehold such that
a tender offer is still feasible or maximizes activism by abandoning tender offers. The proof of Proposition 7 provides an example for each case.

A comparison of (11) and (12) shows that the bidder faces a similar trade-off, but her profit from either form of intervention differs from the social gains. As a result, the bidder’s preferred toehold allocation generally deviates from the social optimum. Specifically, if her bargaining power is low, she gains little from activism and prefers to maximize her tender offer profits by retaining the largest possible toehold. As her bargaining power and thus her gains from a control sale increase, so does her incentive to concede a toehold to the activist. Decreasing her own toehold counteracts the adverse impact of her increased bargaining power on the activist’s incentives, and increasing the activist’s toehold empowers the latter with voting rights, both of which raise the success probability of a campaign. Though, the bidder may support activism too much. Since she does not extract the entire tender offer surplus, she may stake the whole toehold on activism, even if the expected surplus from activism is less than the tender offer gains lost to free-riding target shareholders. Below is an example for each case:

**Example 1** (Bidder has no bargaining power). If the activist has full bargaining power, the bidder only receives her outside option in a control sale such that her expected profit reduces to $E(\Pi^b) = I_b^{\uparrow} I_b$. In this case the bidder wants to maximize the likelihood of a tender offer as well as her profit conditional on a tender offer, both of which increase in her own toehold. Consequently, her privately optimal toehold allocation is $t_a = 0$, which is never socially optimal. Here, $t_a$ is insufficiently low because the bidder does not internalize the gains to the activist.

**Example 2** (Bidder’s tender offer profit is small). Assume $\bar{t} = 0$, $\zeta = k = 0$, and $\zeta$ infinitesimal. We show in the proof of Proposition 7 that the toehold the bidder needs to profit from a tender offer approaches $\bar{t}$ as $\zeta \to 0$. This implies that even with a maximum toehold $t_b = \bar{t}$, the bidder’s profit in a tender offer is virtually zero. In this case, the bidder may leave the entire toehold to the activist, even if the latter’s success probability $q(\cdot)\Delta_1$ remains so low that the expected surplus from activism $q(\cdot)\Delta_1$ falls short of the tender offer surplus $\Delta_1$. Here, $t_a$ is inefficiently high because the bidder does not internalize the gains to the activist.

Proposition 7 thus implies that the relationship between bargaining power and welfare posited in Lemma 4 is partly reversed when the toeholds are chosen endogenously by the bidder.

**Corollary 3.** If the bidder allocates the toeholds, increasing her bargaining power can raise or lower total surplus.

The basic intuition behind this result lies in the trilateral conflict of interest. On the one hand, conceding a toehold is an ex ante relationship-specific investment that does not profit the bidder if the activist has too much bargaining power ex post. Raising the bidder’s bargaining power alleviates this problem
but can, on the other hand, generate a divergence of interest vis-à-vis dispersed shareholders regarding the preferred form of intervention.

For simplicity, our analysis has implicitly assumed that the activist does not, or cannot, sell her toehold to the bidder after a launched but failed campaign.\footnote{For example, depending on the size of the toeholds, such a sale could trigger a mandatory bid rule whereby the bidder must extend the same transaction terms to the other shareholders, i.e., make a tender offer.} Relaxing this assumption would not eliminate the friction highlighted in the first example: a bidder with too little bargaining power would remain unwilling to give away a toehold because the “repurchase” would in any event be expensive. Though, it would resolve the friction in the second example by letting the bidder give activism a “try” and, if unsuccessful, buy (back) the activist’s toehold to revert to a tender offer. The potential inefficiency associated with increasing the bidder’s bargaining power in Corollary 3 would then disappear, and therewith the scope for “excess” activism; in which case endogenizing the toehold allocation fully reverses the welfare impact of bargaining power posited in Lemma 4, and reinforces Proposition 6 that any activism that emerges is welfare-improving.

The toehold allocation game is not to be taken literally. Rather, a reasonable interpretation of a “voluntary toehold concession” is that a prospective acquirer “tips off” an activist, who then acquires a toehold in the prospective target firm and launches a campaign to pressure the management into a control sale to said bidder. This is a concession insofar as disclosure rules or stock illiquidity render toeholds “scarce.” According to our analysis, such a collaboration is more likely when the option of a tender offer is less attractive and thus, for the bidder, amounts to a tender-offer-avoidance strategy. The main practical issue with this strategy is that it may pose a breach of insider trading laws.\footnote{This concern came true in the collaboration between Valeant and Pershing Square (fn. 5). At the same time, no such legal concern exists when institutional investors invite an activist campaign (e.g., when CalSTRS teamed up with Relational Investors in 2013 to pressure Imken into a spin-off) or when investors communicate with each other about a planned campaign to form a “wolfpack.”} While such legal concerns are warranted, our analysis points out that such “toehold concessions” can be a solution to the inefficient lack of explicit contracts between bidders and...
activists in takeover-driven campaigns, rather than always and only an incident of speculative rent-seeking.

5 Permanent versus temporary unbundling

A recurring question in the takeover literature is to what extent cash flow rights and control rights should be bundled or separated.\textsuperscript{23} In this section, we show that the aforementioned differences between activism and tender offers imply that the two modes of acquisition are also differently affected by the possibility of unbundling control from ownership.

5.1 Dual-class exchange offers

In the tender offer game of Section 2, a simple way for the bidder to achieve such unbundling is a dual-class offer, whereby she acquires $r_b$ voting shares in exchange for a cash price $p_b$ plus $n_b \in [0, 1]$ non-voting shares with the same cash flow rights as voting shares. The bidder’s modified optimization problem is

\begin{align*}
\text{maximize} & \quad s_b V(e_b) - C(e_b) - r_b p_b \\
\text{s.t.} & \quad p_b + n_b V(e_b) \geq V(e_b) \\
& \quad r_b \geq 0.5 - t_b \\
& \quad s_b V'(e_b) = C'(e_b) \\
& \quad s_b = t_b + r_b - n_b r_b
\end{align*}

which differs from the earlier problem (1)-(5) with respect to the free-rider condition (14), the post-takeover economic interest (17), and having an additional choice variable, $n_b$.

**Lemma 5** (Burkart, Gromb, and Panunzi, 1998). *Allowing dual-class exchanges in the tender offer game raises takeover probability but lowers post-takeover firm value.*

**Proof.** For any $e_b$ and $r_b$, the objective function decreases in $p_b$ and $n_b$. Hence, the free-rider condition (14) is optimally binding: $p_b = (1 - n_b)V(e_b)$. This reduces the objective function to $t_b V(e_b) - C(e_b)$. Substituting the incentive constraint (4) for $e_b$, and then differentiating with respect to $n_b$ yields the derivative $(1 - n_b) r_b \frac{\theta^2}{e_b^2}$. Thus, it is optimal to set $n_b = 1$. Substituting this back into the objective function yields $\frac{1}{2} \frac{\theta^2}{e_b^2} \frac{\theta^2}{e_b^2} + \zeta - c = \Delta_{t_b}$. This is independent of $r_b$, which is hence set to any value that meets the control constraint (15). The bidder’s profit is higher than under a pure cash offer ($n_b = 0$) but need not be high enough to cover the fixed cost $\zeta$. \hfill \Box

\textsuperscript{23}See e.g., Grossman and Hart (1988), Harris and Raviv (1988), Dekel and Wolinsky (2012), and the references in Burkart and Lee (2008). Recently a literature has emerged around the issue of unbundling by activist hedge funds (e.g., Hu and Black, 2006, 2007, 2008; and Brav and Matthews, 2010).
Due to the unrecompensed effort problem, the bidder has no interest in increasing her economic interest in the firm, but needs the majority of voting rights to take control. A dual-class exchange offer allows her to appropriate the voting rights while leaving the economic interest with the dispersed shareholders. This facilitates a takeover but undermines her post-takeover incentives, creating a trade-off between overcoming the ex ante and the ex post free-rider problems.24

This trade-off would be even starker if we were to introduce value-decreasing bidders into the model. A dual-class exchange offer could in this case facilitate a takeover that reduces firm value, as it cannot be precluded that dispersed target shareholders accept such a bid due to the so-called “pressure-to-tender problem” (Bebchuk, 1985). The best way to screen out value-decreasing bidders is to demand more cash in the offer but this reintroduces the unrecompensed effort problem for value-increasing bidders.

Note that the bidder may still find the tender offer unprofitable despite unbundling. Under the optimal dual-class security exchange, her post-takeover effort is commensurate with her initial minority stake $t_b$. The value increase under such weak incentives may not cover the fixed costs $c_2$, so that the takeover is nonetheless frustrated. In this case the bidder finds herself fully in the dilemma that defines the dual free-rider problem: She either suffers the ex ante problem and provides unrecompensed effort or does not reduce the ex post problem and creates too little value, making no profit in either case.

5.2 Empty voting

We now revisit the baseline activism game in which tender offers are infeasible and the activist has full bargaining power (Section 3.1). In parallel to above, we allow the activist to unbundled ownership and control. Specifically, she can obtain $(1 + \varepsilon)r_a$ voting rights by buying $r_a$ shares, or equivalently, can buy $(1 + \varepsilon)r_a$ voting rights with $r_a$ cash flow rights attached. Let $p_{ea}^*$ denote the price of such a voting right. Note that $\varepsilon > 0$ measures the degree of unbundling: $\varepsilon r_a$ of the acquired voting rights are void of cash flow rights, and hereafter referred to as empty votes. We assume that the empty votes “expire” prior to the consummation of a takeover.25

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24Burkart, Gromb, and Panunzi (1998) identified this trade-off with respect to deviations from one-share-one-vote in a tender offer model with dissipative post-takeover diversion. The same trade-off appears in Burkart and Lee (2015) where the bidder has private information and exerts post-takeover effort. Their analysis focuses mainly on how unbundling helps to resolve the information asymmetry.

25We make this assumption primarily because it is realistic and convenient; it is not crucial. Suppose the activist could somehow permanently acquire empty voting rights, thereby creating a share class with inferior voting rights. If the shareholders owning the “inferior” shares retain the same bargaining power with respect to their cash flow rights as those shareholders who own the “superior” shares, the below analysis does not change at all. Alternatively, if unbundling allows the “superior” shares to extract a “control premium” in the control sale at the expense of the “inferior” ones, then the price of empty votes is no longer zero since dispersed shareholders would require the activist to pay for the “control premium” that they would free-ride on if they retained their votes. Thus, the activist cannot extract the premium and is hence indifferent between temporary or permanent unbundling. Most importantly, in either case would both
In practice, empty voting is implemented by buying shares in conjunction with derivatives that partly neutralize the equity interest, or through record-date capture whereby shares are borrowed to register for an upcoming shareholder vote but returned before the actual vote, such that effectively only the votes are being borrowed. These strategies endow an activist with a temporary increase in voting power that ends with the derivative contract or the shareholder vote.

**Lemma 6.** The price of empty votes is zero.

**Proof.** Consider a mass of \( r_a (1 + \varepsilon) \) shareholders offered to sell all of their voting rights with \( r_a \) of their cash flow rights attached at a per-vote price \( p^v_a \). If they accept the offer, they receive \( r_a (1 + \varepsilon) p^v_a \) in cash and retain \( \varepsilon r_a \) cash flow rights.

Each individual shareholder perceives her selling decision as non-pivotal to the expected share value under the campaign, \( \mathcal{V}(e_a) \), and therefore sells if and only if \( r_a (1 + \varepsilon) p^v_a + \varepsilon r_a \mathcal{V}(e_a) \geq r_a (1 + \varepsilon) \mathcal{V}(e_a) \). Under the lowest acceptable price, this constraint is binding and yields \( p^v_a = \frac{\mathcal{V}(e_a)}{1 + \varepsilon} \). Buying \( r_a (1 + \varepsilon) \) voting rights thus costs the bidder \( r_a (1 + \varepsilon) p^v_a = r_a \mathcal{V}(e_a) \), which is the exact same price she would pay under the free-rider condition (7) without the empty votes. \( \square \)

It is the essence of the free-riding behavior that dispersed shareholders find it (individually) too costly to (coordinate to) exercise their formal control rights. Consequently, they do not value voting rights per se. The reason the bidder finds it nonetheless difficult to gain control is that the voting rights are tied to cash flow rights, which are costly too acquire because the shareholders want to free-ride on the value improvement. This problem disappears once the two sets of rights are disentangled: In fact, giving away their voting rights allows target shareholders to perfectly free-ride on the bidder’s active exercise of those rights.

In short, the exact same free-rider behavior that makes dispersed shareholders “bargain” too toughly over cash flow rights also implies that they would give up their voting rights for free.

Given Lemma 6 we can reformulate the activist’s share purchase problem (6)-(10) as the vote purchase problem

\[
\begin{align*}
\text{maximize} & \quad s_a \mathcal{V}(e_a) - K(e_a) - r_a (1 + \varepsilon) p^v_a \\
\text{s.t.} & \quad r_a (1 + \varepsilon) p^v_a \geq r_a \mathcal{V}(e_a) \quad (19) \\
& \quad r_a < .5 - t_a \quad (20) \\
& \quad s_a \mathcal{V}'(e_a) = K'(e_a) \quad (21) \\
& \quad s_a = t_a + r_a \quad (22) \\
& \quad v_a = t_a + (1 + \varepsilon) r_a \quad (23)
\end{align*}
\]

where (19) is the modified free-rider condition and (23) accounts for the activist’s voting power, which can now diverge from her economic interest (22).

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Share classes be acquired by the bidder in a control sale so as to maximize the total surplus. That is, any unbundled voting rights and cash flow rights would be re-unified in the event of a control sale.
Lemma 7. When $\varepsilon$ increases, the activist acquires more voting rights and more cash flow rights in the open market.

Proof. See Appendix.

Recall from Lemma 2 that the activist’s open-market purchase balances the benefit of influence against the cost of unrecompensed effort. Unbundling decouples the benefits from the costs so that she acquires more voting rights. While this may not be surprising, it is perhaps more so that she also acquires more cash flow rights. Intuitively, she is more willing to accept a marginal increase in effort if the increase also comes with greater influence (which benefits her through gains on her toehold). This is noteworthy in light of the criticism that empty voting leads to a greater misalignment of interests. Indeed, a comparison of $v_C$ and $s_a$ supports this view in the sense that $\frac{s_a}{v_a}$ increases with $\varepsilon$. That is, unbundling decreases ownership relative to control for a given stake. However, our analysis suggests that it can also induce activists to acquire more ownership in absolute terms, which increases the alignment of interests.\(^{26}\) This mirrors the argument that one-share-one-vote can discourage ownership concentration (see, e.g., Burkart and Lee, 2010).\(^{27}\)

Lemma 7 implies directly that the effort the activist chooses to implement increases with $\varepsilon$ and hence, due to absence of the majority requirement, that a campaign becomes more profitable (by the envelope theorem).

Proposition 8. Unbundling of voting rights and cash flow rights by the activist raises both takeover probability and post-takeover firm value.

Recall from our discussion of Proposition 4 that a key advantage of activism over tender offers is that the ownership stake that the activist chooses in response to the dual free-rider problem does not constitute the post-takeover ownership structure if a control change succeeds. By the same token, a separation of control and ownership harnessed by the activist for the purpose of the campaign is not inherited by the post-takeover firm. That is, like the activist engagement, empty voting is transitory, and ironically, a means to achieve a permanent consolidation of ownership and control.

We would argue that Proposition 8 only accentuates what is the fundamental character of activism. Even without unbundling activists seeks to exert control above and beyond the formal authority vested in their equity stakes – through costly campaigns. However, these efforts are constrained by the dual free-rider problem.

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\(^{26}\)This holds only when the activist accumulates an interior level of voting power ($v_a < .5$), which Lemmas 2 and 7 are the focus of. Otherwise the activist acquires maximum influence with increasingly fewer cash flow rights as $\varepsilon$ increases. Notwithstanding, it suggests that the effect of unbundling on endogenous incentive alignment may in general be ambiguous.

\(^{27}\)Concentrating wealth in a single firm can entail (opportunity) costs. A blockholder may hence respond to the introduction of one share - one vote by reducing her voting power rather than by acquiring more cash flow rights. Relinquishing power may be self-reinforcing as it reduces the blockholder’s private benefits of control and thus makes it less worthwhile to hold the block altogether. In our case, a similar effect is created not the by (opportunity) costs of concentrated wealth but by the cost of acquiring cash flow rights in the face of the free-rider problem.
problem. Unbundling mitigates this problem by allowing them to leverage their influence explicitly, and by Lemma 6, at “zero cost” precisely because the target shareholders are free-riders. By contrast, unbundling is less “natural” for bidders, whose defining characteristic is not to exercise influence in excess of ownership to effect change, but to consolidate ownership in order to exercise control. Thus, the differential impact of unbundling is also fundamentally rooted in the inversion of conditionality.

Another advantage unbundling by the activist has over dual-class exchange offers is that it ultimately serves to facilitate a negotiated control sale, which unlike a dual-class exchange offer is not liable to the pressure-to-tender problem and hence only succeeds if the takeover surplus is positive. So, a value-decreasing bidder cannot exploit activism – unless she can somehow convince target shareholders to collectively vote for selling their shares at a loss, which seems rather doubtful.

6 Concluding remarks

TBD.
Appendix

Proof of Proposition 5

We solve the game by backward induction.

Control sale.—We know from the proof of Proposition 1 that the bidder’s profit from a tender offer is \( \Pi_b^t = (t_b - .25) \frac{1}{2} \theta_b^2 + t_b \xi - \zeta \). When \( s_a < .5 \), this changes her participation constraint in a control sale to \( \Delta_1 - r_m p_m \geq \Pi_b^t \).

Hence, \( p_m^t = (\Delta_1 - \Pi_b^t) / r_m \), which is strictly lower than \( p_m \) in the case without tender offers. We disregard the case \( s_a \geq .5 \), which can again be shown to lie on an out-of-equilibrium path.

Activist effort.—In stage \(-2\), the activist chooses her effort \( e_a \) to maximize \( s_a [q(e_a)p_m^* + (1 - q(e_a))V_5] - K(e_a) \) where \( V_5 \) is her per-share payoff from the tender offer that ensues if the campaign fails. Again, an interior maximum is pinned down by the first-order condition, which yields

\[
e_a^* = \frac{v_a \theta_a s_a}{k} (p_m^* - V_5). \tag{24}
\]

Given \( p_m^* > p_m \) and \( V_5 > 0 \), keeping the activist’s stake constant, the possibility of a tender offer reduces activist effort. In fact, for \( p_m^* \leq p_m \), the optimal effort is zero, in which case the campaign would not have been launched in the first place. For the remainder of the proof, we assume \( p_m^* > V_5 \).

Open-market purchase.—Shareholders take the possibility of a tender offer into account, so the free-rider condition is \( p_a \geq [q(e_a)p_m^* + (1 - q(e_a))V_5] \). With the free-rider condition optimally binding, the activist chooses her stake \( s_a \) in stage \(-3\) to maximize \( t_a[q(e_a)p_m^* + (1 - q(e_a))V_5] - K(e_a) \). Substituting (24) into the objective function yields

\[
t_a \left[ \frac{\theta_a^2 s_a^3}{k} (p_m^* - V_5) p_m + \left(1 - \frac{\theta_a^2 s_a^3}{k} (p_m^* - V_5) \right) \Pi_b^t \right] - \frac{1}{2} \frac{\theta_a^2 s_a^4}{k} (p_m^* - V_5)^2.
\]

The first-order condition yields \( s_a^* = \frac{3}{2} t_a \), which is the same as before. (Under the quadratic formulation, the impact of the changed outside options on influence buying and overworking offset each other.) Thus, the possibility of a tender offer indeed reduces activist effort.

Campaign decision.—The activist launches a campaign if and only if

\[
t_a[q(e_a)p_m^* + (1 - q(e_a))V_5] - K(e_a) \geq t_a V_5
\]

\[
t_a q(e_a)(p_m^* - V_5) - K(e_a) \geq 0,
\]

and substituting \( s_a^* = \frac{3}{2} t_a \) and \( e_a^* = \frac{9 \theta_a^2 s_a^3}{k} (p_m^* - V_5) \),

\[
\theta_a^2 \frac{27}{32k} t_a^4 (p_m^* - V_5)^2 \geq \zeta. \tag{25}
\]

If instead a tender offer were impossible, we know from the proof of Proposition 4 that the activist would launch the campaign if and only if \( \theta_a^2 \frac{27}{32k} t_a^4 p_m^2 \geq \zeta \).
Since \( p_m > p_m^* - V_5 \), the likelihood of activism is decreased if tender offers are a feasible alternative.

Comparative statics on \( k \).—Neither \( p_m^* \) nor \( V_5 \) depend on \( k \). (At the time of a control sale or tender offer, the activist’s effort is sunk.) So it follows directly from (25) that the likelihood of activism (tender offers) falls (rises) with \( k \). ■

Proof of Lemma 4

The sharing rules \( \delta \in [\delta, \bar{\delta}] \) map one-to-one into control sale prices \( p_m^\delta \in P \) with \( P = (V_5, p_m^\delta) \) if \( \theta_b \leq \theta_b \) and else \( P = (0, p_m) \). Using these prices as a proxy for bargaining power is convenient for the purposes of this proof.

First, consider the expected takeover surplus \( E(\Delta_{sa}) \), which depends on \( p_m^\delta \) only through the probability of activism. By using \( p_m^\delta \) as the control sale price, it is straightforward to verify in the proof of Proposition 5 that both the success probability conditional on a campaign and the likelihood of a campaign strictly increase in \( p_m^\delta \) for \( \theta_b \leq \bar{\theta}_b \). Proceeding analogously, the same conclusion obtains from the proof of Proposition 3 for \( \theta_b > \bar{\theta}_b \). Thus, decreasing \( p_m^\delta \) makes activism less likely (successful), and hence reduces \( E(\Delta_{sa}) \).

Second, consider the bidder’s expected payoff for the two cases:

\( \theta_b \leq \bar{\theta}_b \).—In this case, a tender offer is always feasible and so bounds the bidder’s payoff from below. We can thus restrict attention to his gains above this lower bound: \( E(\Pi^b) - \Pi^b_{5,5} \). Substituting for \( q(e_a) \) from the proof of Proposition 3 and with \( I_b = 1 \), we get

\[
E(\Pi^b) - \Pi^b_{5,5} = q(e_a) \left[ \Delta_1 - (1-t_b)p_m^\delta \right] + \left[ 1 - q(e_a) \right] \Pi^b_{5,5} - \Pi^b_{5,5}
= q(e_a) \left[ \Delta_1 - \Pi^b_{5,5} - (1-t_b)p_m^\delta \right]
= \frac{27 \theta^2 n^3}{8 k} \left( p_m^\delta - V_5 \right) \left[ \Delta_1 - \Pi^b_{5,5} - (1-t_b)p_m^\delta \right].
\]

This is a concave parabola in \( p_m^\delta \) with its roots at \( p_m^\delta = \frac{\Delta_1 - \Pi^b_{5,5}}{1-t_b} = p_m^* = \sup P \) and \( p_m^\delta = V_5 = \inf P \).

\( \theta_b > \bar{\theta}_b \).—Substituting for \( q(e_a) \) from the proof of Proposition 3 and with \( I_b = 0 \), we get

\[
E(\Pi^b) = q(e_a) \left[ \Delta_1 - (1-t_b)p_m^\delta \right]
= \frac{27 \theta^2 n^3}{8 k} \left( p_m^\delta \right) \left[ \Delta_1 - (1-t_b)p_m^\delta \right].
\]

This is a concave parabola in \( p_m^\delta \) with its roots at \( p_m^\delta = \frac{\Delta_1}{1-t_b} = p_m = \sup P \) and \( p_m^\delta = 0 = \inf P \). ■

Proof of Proposition 7

Socially optimal toehold allocation.—Conditional on \( I_b \), expected takeover surplus strictly increases in \( q(e_a) \), which in turn increases in the activist’s toehold
shown to decrease in $z$. Note that this yields
\[
\max \{ t_a | l_b = 0 \} = \bar{t} \text{ and }
\max \{ t_a | l_b = 1 \}, \text{ which can be backed out of the bidder’s participation constraint in the proof of Proposition 1: } \max \{ t_a | l_b = 1 \} = \bar{t} - l_b \text{ where }
\]
\[
\bar{t}_b = \frac{\varsigma + \frac{1}{2} \theta_b^2}{\varsigma + \frac{1}{2} \theta_b^2}.
\]
To show that either may be the social optimum depending on parameters, consider the following two examples:

Example (Tender offer requires large bidder toehold). Assume $\varsigma$ infinitesimal, $\bar{t} = .25$, and $\varsigma = k = 0$. Then $\bar{t}_b < .25$ but $\lim_{\varsigma \to 0} \bar{t}_b = .25$ and $\lim_{\varsigma \to 0} (\bar{t} - \bar{t}_b) = 0$. That is, keeping the tender offer feasible implies that the activist’s toehold and hence her (effort and) success probability are infinitesimal for any $\theta_b$ and $\theta_a$. The expected takeover surplus is thus close $\Delta_5$. Now consider $t_a = \bar{t}$ instead.

At this point, the expected takeover surplus is (by the proof of Proposition 3)
\[
q(e_1) \Delta_1 = \frac{\theta_a^2 27}{8} \Delta_1^2
\]
where $p_m = \Delta_1$ since $t_b = \bar{t} - t_a = 0$. Clearly, there exist $\theta_a$ and $\theta_b$ large enough such this exceeds $\Delta_5$. In particular, note that $\Delta_1 - \Delta_5$ is increasing in $\theta_b$.

Example (Activism with low skill). Assume $k = 0$ and $\theta_a$ infinitesimal. Also, with a slight abuse of notation, let $q(t_a)$ denote the activist’s optimal effort for a given toehold $t_a$. Despite her low skill, the activist will always launch a campaign since there is no fixed cost, but $\lim_{\theta_a \to 0} q(t_a) = 0$ for any $t_a$. Hence, $q(\bar{t}) \Delta_1 < q(\bar{t} - \bar{t}_b) \Delta_1 + [1 - q(\bar{t} - \bar{t}_b)] \Delta_5$ for small enough $\theta_a$. A similar example can be constructed with a high marginal cost $k$ of activism. ■

Proof of Lemma 7

For any $e_a$ and $r_a$, the objective function decreases in $p_a^w$. Hence, $p_a^w$ is optimally set to its lower bound via (19): $p_a^w = \frac{\nu(e_a)}{1 + \epsilon}$. At this price the objective function reduces to $t_a \nu(e_a) - K(e_a)$, and after substituting (21), yields $\frac{1}{k} p_m^2 \theta_a^2 (t_a s_a - \frac{1}{2} s_a^2) v_a^2 - k$. Finally substituting for $s_a$ and $v_a$ using (22)-(23) yields
\[
\frac{1}{k} p_m^2 \theta_a^2 [t_a (t_a + r_a) - \frac{1}{2} (t_a + r_a)^2] [t_a + (1 + \epsilon) r_a]^2 - k
\]
Maximizing this with respect to $r_a$ yields the first-order condition $r_a^2 + \frac{1}{2(1 + \epsilon)} t_a r_a - \frac{1}{2} t_a^2 = 0$, which has the positive solution
\[
r_a = \left[ \sqrt{\frac{1}{16} (1 + \epsilon)^2 + \frac{1}{2} - \frac{1}{4(1 + \epsilon)}} \right] t_a.
\]
Note that this yields $r_a = \frac{t_a}{2}$ for $\epsilon = 0$. To see that $r_a$ increases with $\epsilon$, define $z \equiv \frac{1}{16(1 + \epsilon)^2}$ and rewrite the solution as $\sqrt{z + 1/2} - \sqrt{z}$, which can easily be shown to decrease in $z$ and hence increases in $\epsilon$.  

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Note that the mass of voting rights acquired by the bidder,

$$(1 + \varepsilon) r_a = \left[ \sqrt{\frac{1}{16} + \frac{(1 + \varepsilon)^2}{2}} - \frac{1}{4} \right] t_a,$$

also increases with $\varepsilon$.

TBD: Flipping the company adds no value relative to a dual-class security exchange offer. ■

References


