

auctions and takeovers. Under Delaware law (the predominant corporate law in the US), when a potential acquirer makes a serious bid for a target, the target's board of directors is required to act as would “auctioneers charged with getting the best price for the stock-holders at a sale of the company.” (*Revlon v. MacAndrews & Forbes*, 173). The target's board may not use defensive tactics that destroy the auction process and must attempt to seek higher bids. Similarly, the Williams Act requires takeover bids to remain open for at least 20 business days on the grounds that the delay facilitates auctions. This preference for auctions follows from the view that auctions maximize shareholder returns. In addition, auctions promote efficiency by shifting corporate assets into the hands of those that value them most highly. And auctions mitigate the collective action problem of target shareholders by requiring the target board to seek the highest bid.

Takeover auctions differ from traditional auctions in important respects. In a traditional auction, the seller describes what is being sold and states the auction rules in a public announcement. Takeover auctions are instead prompted by a potential buyer. Only after the buyer has expressed an interest in the target are bids from others sought. The process is governed not by a fixed set of auction rules specified by the seller, but rather by complex takeover regulations, which give the target board some latitude in the process. The process is typically not stated in advance, but evolves as bidders and bids arrive. For the most part, the regulations provide ways to defend against hostile takeovers with poison pills, greenmail, and other tactics. Despite these differences, to a first approximation takeovers are well modeled as an ascending-bid auction with significant participation costs.

This essay begins by looking at takeover auctions from the point of view of a buyer, focusing on bidding strategy. Then strategies of the target are discussed. Finally, the desirability of takeover auctions is addressed.

It is useful to distinguish between two ideal auction settings: common value and private value auctions. In a common value auction, every bidder has the same value for the target, but the bidders have private estimates of this uncertain value. In a private value auction, each bidder knows its own value, but not the values of other bidders. A takeover to displace bad management in which all bidders have similar plans for the target is more like a common value auction. A takeover motivated by synergistic gains particular to each bidder is closer to a private value auction. In practice, takeover auctions have both common and private value elements. However, the majority of hostile takeovers appear to be predominantly common value. The acquirer often takes steps that the targets could have taken to increase value, such as increasing leverage to take advantage of the tax deductibility of interest on debt.

The primary strategic issue in a common value auction is the winner's curse. Bids are based on the estimates of the common value of the target. Other things equal, there is a tendency for the bidder who overestimates value the most to win. Hence, the winner's estimate is not an unbiased estimate of value, but an overestimate. Sophisticated bidders recognize this winner's curse and shade their bids to account for the bad news about value that winning conveys. Empirical studies suggest that targets capture nearly all of the gains from trade in takeover auctions. This is consistent either with sophisticated bidders with limited private information about the value (so information rents are small), or some amount of naïve bidding which consumes the rents to private information.

Preemptive bidding is a strategic issue in both private value and common value takeover auctions. A preemptive bid is a large initial bid intended to discourage competition. Preemptive bids are especially relevant in the takeover context, because of the substantial costs associated with making a bid. The initial bidder can find the target, do the investigation, and then make a high initial bid. The bidder is saying, "I want this target and I have a high value. Attempts to compete with me will fail." In the private value context, the high initial bid is a credible signal of a high value (Fishman 1988). Firms with low values find it unprofitable to make high bids; whereas, high-value firms have an incentive to make high bids if it deters other firms from entering the auction. Since the other potential bidders have not yet sunk the investigation cost, the high initial bid may stand. In the common value setting, the high initial bids can signal a high estimate of value. The bid serves to warn the other potential bidders to stay out or else suffer from the winner's curse.

It is difficult to assess how common preemptive bids are. Certainly, there are instances of successful initial bids, but competition is more common. Sometimes the same effect can be accomplished by a ratcheting bid, in which the initial bidder announces that it will top any other bid in the field. However, target boards often refuse to entertain ratcheting bids, and it is difficult to make ratcheting bids credible.

Perhaps the most important strategy in the takeover auction is the acquisition of a stake or "toehold" in the target. Hostile takeovers are typically initiated not with a bid, but with the potential acquirer first buying up as large a share of the firm as it can before its intentions are known. The Williams Act requires that the firm make an announcement shortly after a five-percent share is reached. Under this rule, acquirers are typically able to buy between a five to fifteen percent toehold before the announcement.

Toeholds are important for two reasons. First, much of the acquirer's profits come from the purchase of shares at low prices before the market realizes the target is in play. Second, the toehold effects the bidding strategy in important ways. A bidder with a large toehold can bid more aggressively than other bidders. Without the toehold, raising the bid simply means that a higher price must be paid for the target.

With a toehold, the raise still means a higher price if the bidder wins, but if the bidder is unsuccessful it means that it will be paid a higher price for its toehold. Rather than being a pure buyer, the toehold bidder has incentives of both a buyer and a seller. The larger is the toehold, the less costly is a raise.

The strategic benefit of toeholds is especially important in ascending-bid common-value takeover auctions (Bulow, Huang, and Klemperer 1996). The toehold enables the acquirer to bid more aggressively, which increases the winner's curse for the other bidders. As a result, the competitors must bid more conservatively to avoid a loss. But more conservative bidding by the competitors means less of a winner's curse for the bidder with a toehold, which implies more aggressive bidding. Hence, the benefit of the toehold is magnified by its interaction with the winner's curse. The extra profits come not so much from the more aggressive bidding by the bidder with the toehold, but by the strategic response it generates – less aggressive bidding by the competitors. What is critical here is that bids in an ascending-bid common-value auction are strategic substitutes. This is not the case in a private-value setting. A bidder's strategy is unaffected by how aggressively the other is bidding in a private-value ascending auction.

The model is easily extended to the more realistic setting where several bidders have a toehold. In this case, the model predicts that both profits and the probability of winning increase with the size of the toehold. Empirical studies are ambiguous on the effect of a toehold on profits, but it is the case that larger toeholds yield a higher probability of winning.

Toeholds are also useful to preempt competition for control. Since the bidder with the toehold has a strategic advantage in the bidding, other potential bidders are less apt to participate. Even modest toeholds may be enough to discourage participation. This implication is supported in the empirical studies. Uncontested takeovers are more common with larger toeholds.

Even small toeholds can lead to highly asymmetric bidding strategies (Klemperer 1998). The bidder without the toehold bids much less aggressively than the bidder with the toehold, and profits are similarly asymmetric. Moreover, substantial target revenues are lost as a result of the toehold. These results depend critically on an ascending auction in a common-value environment. If a sealed-bid auction is used instead, the slight asymmetry arising from the toehold results in a small loss in revenues and a small difference in profits.

In light of these results, it is perhaps surprising that initial bidders do not always acquire toeholds (Cabrerizo 1997). Although toeholds are common there is a significant fraction of acquirers that do not purchase stock prior to the initial tender. One explanation is that the size of the toehold signals (at least partially) to the market the value of the acquisition. Thus, a bidder may choose not to acquire shares if it

feels that the toehold would leak information that would force the bidder to pay a larger takeover premium.

A target's board has a great deal of discretion in establishing auction procedures, despite regulations favoring auctions. Most importantly, a target's board can block any initial offer. This power arises from the target's prior issuance of a poison pill. In essence, a poison pill makes any acquisition unprofitable. Hence, all bids are made conditional on the target board redeeming its pill. However, the board is under a legal duty to maximize revenue to target shareholders. Thus, the pill is a good remedy to stall the process and search for other bidders, but it is far less effective at preventing eventual acceptance of an attractive offer. At best, poison pills afford the board a limited ability to set a reserve price.

Another strategy for the target is whether to use a sealed-bid or an ascending-bid auction. In a symmetric common value (or more generally an affiliated values) setting. The board can improve revenues by adopting an ascending auction. In an ascending auction, the bidding reveals information about value, and thus reduces bidder uncertainty and the winner's curse. Bidders bid more aggressively in equilibrium and revenues are increased (Milgrom and Weber 1982). This result extends to the takeover setting where entry is endogenous and costly (Harstad 1990). However, the result depends critically on the symmetry assumption. As emphasized above, in the presence of toeholds or other asymmetries, a revenue-maximizing target board may prefer a sealed-bid auction in favor of an ascending auction. However, the board may find it difficult to commit to a single sealed bid when higher offers are made after the sealed bids are opened.

Target boards often adopt tactics that effect entry. A breakup fee is one example. A breakup fee is a sum that a target board promises to pay to a serious potential buyer in the event that it loses the auction, if the buyer agrees to enter or raise an existing bid. These fees may be used by the target's board either to increase or decrease the number of auction entrants. However, breakup fees seem more commonly used to deter entry in the auction. The fee is offered to an initial bidder in exchange for a higher bid. It has the effect of reducing the value of the firm to all subsequent bidders by the amount of the fee. Especially in the common-value context, such a breakup fee can destroy the incentives for others to compete. When used in this way by a trustworthy board, breakup fees may increase revenues. A bidder should be willing to pay a hefty premium for the right to avoid competition.

Lockups provide an analogous means of restricting entry. A lockup is an agreement between a target's board and a serious potential bidder in which the buyer is permitted to purchase target shares or target assets at favorable prices if it loses an auction, provided that the buyer either enters or raises an existing bid. The only difference between a breakup fee and a lockup is that, since the lockup involves

assets of the target, the assets may be valued differently by different bidders. Hence, a lockup can be used as a lure to discover and then bargain with bidders that have high estimates of the target's value. When used in this way by a faithful board, lockups may be even more effective at increasing revenues.

Bulow and Klemperer (1996) prove a result that suggests that one should be skeptical about the revenue enhancing effects of breakup fees or lockups. They show that when bidders are symmetric and have independent signals of value, the revenue from an ascending auction with $N+1$ bidders is greater than the best possible revenue with N bidders. Hence, an ascending auction is better than the optimal negotiation with one fewer bidder. The target cannot gain by negotiating a higher price in exchange for limiting entry. Essential to this result is the symmetry assumption. When asymmetries are present, as is often the case, then effective negotiation with the advantaged bidder may dominate an ascending auction with more bidders. Furthermore, breakup fees and lockups can be used to offset asymmetries and thereby increase auction competition.

An additional difficulty with breakup fees and lockups is that the target's board may not be pursuing faithfully the shareholders' goal of revenue maximization, but may be pursuing management's private interests. Since a primary motive for takeovers is to discipline bad management, it would be wrong to assume that the target's board is faithful.

A main policy question on takeovers is should takeover regulations be structured to encourage or discourage auctions.

One argument against auctions is that they weaken incentives to search for under-performing target firms (Schwartz 1986). Search is expensive and auctions reduce the gains from search. However, some participants in the takeover boom of the 1980s, judge that too much takeover research was done — that much of the research was duplicative and undertaken by investment bankers and other financial professionals in search of big contingent fees (Herzel and Shepro 1990, 1992). By dampening the incentives to search, auctions may reduce this overfishing problem.

Cramton and Schwartz (1991) argue that the desirability of takeover auctions hinges on three factors: the objective of the state in setting policy, the auction environment, and whether target managers are trustworthy. Two policy objectives are considered: efficiency and revenue maximization. Under efficiency, the state sets takeover policy to maximize the social good. Under revenue maximization, policy is set to maximize the gain to target shareholders after an initial bid is made. The rationale for a goal of revenue maximization is weak. It appears in the law, because parties commonly sue the target's board for a failure to fulfill its fiduciary duty. In the context of takeovers, this duty to shareholders is to maximize revenue to target shareholders. Hence, the courts have focused on the question did the board

maximize revenues? However, there is little reason to favor target shareholders over society at large, and thus efficiency is the better objective. Under the efficiency objective, auctions should be discouraged in common value settings. However, when values differ across bidders, there are efficiency gains to holding an auction. When value differences are large, auctions should be encouraged.

The case for auctions is much stronger under a revenue maximization objective. Auctions generally dominate negotiation in terms of revenues. Ascending auctions are especially desirable when the target's board is unfaithful, as should be presumed. Ascending auctions provide a process of price discovery. Value is socially determined through the escalation of bids. The bidders learn from each other's bidding, adjusting valuations throughout the process. This process is important when resale is a possibility or more generally when others have information relevant to assessing the target's value. This open competition gives ascending auctions a legitimacy that is not shared by other auctions. Throughout the auction, every bidder is given the opportunity to top the high bid. The auction ends when no bidder is willing to do so. The winner can say, "I won because I was willing to pay a bit more than the others." Losers are given every opportunity to top the winning bid. Their loss stems solely from their failure to do so.

Boards should be limited in their ability to take actions to favor particular bidders or to discourage entry. Discouraging entry is rarely in the shareholders interest. Favoring particular bidders may be in the shareholders interest provided the favoring is done to level and uneven playing field. However, with unfaithful boards, there is no guarantee that this will be the case.

Under the presumption that boards are unfaithful, open ascending auctions should be favored. Such a rule performs well with respect to both the revenue maximization and efficiency objectives, and is the least vulnerable to manipulation by an unfaithful board.

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