

Repetition, Reputation, and Raiding

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I develop a multitarget takeover model with bid revisions, in which bidders desire a reputation for having low valuations. Such a reputation increases the likelihood that future targets will accept low premium bids. Bidders develop reputation by using low take-it-or-leave-it offers. Consequently, tender premiums, bid revision rates, and success rates are lower for continuing bidders than for those considering only a single target. Success rates vary within a series, and reputation building is more likely with highly correlated target valuations. I provide an exploratory empirical analysis consistent with lower premiums from continuing bidders and discuss some resulting implications regarding “raiders,” conglomerates, and resistance strategies.

Recent developments in the theory of takeovers have emphasized the relationship of the distribution of preplay holdings, costly information production opportunities, the medium of exchange, and the endogeneity of active competition to the strategic

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behavior of bidders and targets.¹ The existing models typically consider a single target facing one or more bidders and are not designed to address the dynamics of bidding across targets (i.e., the relationship of current acquisitive behavior to past or future behavior). Such models are freeze-frames in the market for corporate control.

Since bidders who demonstrate reputational concern are present in the acquisitions market, a theoretical investigation of cross-target bidding dynamics seems warranted. I address this topic by considering a model in which a solitary bidder must consider the relationship of present bidding behavior to the profitability of future acquisitions. "Tough" bidding behavior may arise and is evidenced by low take-it-or-leave-it offers.

My model shares with preemption [e.g., Fishman (1988) and Bhattacharyya (1990)] and random-tender models [e.g., Hirshleifer and Titman (1990)] the characteristic that high premium bids indicate high quality bidders. However, I derive implications about the behavior of continuing high valuation bidders that are quite different from the single acquisition case considered in these models. In preemption models, high valuation bidders have an incentive to bid at high premiums to reveal their quality and thereby deter competition. In random tender models, high quality bidders have sufficiently profitable consummations so that they are willing to pay extra (relative to low quality bidders) for an increased probability of success. I consider a cost of high bidding excluded in these models—a loss in future bargaining strength. Such a cost encourages low bidding early in a sequence, as high valuation bidders wish to avoid establishing a reputation that they can afford high premiums.

Consideration of repetition and reputation formation yields new empirical implications and policy insights. In particular, this model implies that tender premiums, probabilities of revision, and success rates should be lower for bidders involved in an ongoing acquisition program than for those considering only the current target. For continuing bidders, success is more likely late in a series of acquisitions than early in the series when the bidder is establishing a reputation. The desire to build a reputation is stronger in a series of related targets (i.e., having highly correlated valuations to the bidder) than in a series of unrelated targets. Related to these implications, I present an exploratory empirical study that provides qualified support for my hypothesis that continuing bidders pay lower premiums.

¹ The literature has become quite extensive. A sampling of recently published work includes Fishman (1988), Bagnoli and Lipman (1988), Bagnoli, Gordon, and Lipman (1989), Hirshleifer and Png (1989), Fishman (1989), Berkovitch and Narayanan (1990), Berkovitch and Khanna (1990, 1991), Hirshleifer and Titman (1990), and Eckbo, Giammarino, and Heinkel (1990). A summary of earlier work has been given in Spatt (1989).

My analysis highlights some interesting policy implications for bidders and targets. Continuing bidders have incentives to announce acquisition programs (and the market should react favorably) and to obscure previous and potential gains from acquisition until the series is complete. Targets may wish to consider past bidder behavior when deciding whether to resist an offer and, other things being equal, prefer nonrepeating bidders.

The remainder of the article is as follows: In Section 1, I describe a single-target acquisition model and, in Section 2, I enhance this model to include cross-target dynamics. In Section 3, I discuss two alternative reputation stories that lead to different bidder behavior from that predicted by my model. In Section 4, I discuss empirical implications of my model and the concept of reputation in the market for corporate control. In Section 5, I present a preliminary empirical investigation of my differential premium implication and discuss related research. In Section 6, I discuss other implications of my analysis, and, in Section 7, I conclude with a summary and a discussion of possible directions for future research. All proofs are relegated to the Appendix.

1. A Takeover Model with Bid Revision

Consider a potential acquirer who can revise his initial bid. Let there be two types of bidders, high and low quality, and assume that two bid levels are available, a high premium bid and a low premium bid. Additionally, let us assume that submission of a high premium bid by a low quality bidder has nonpositive expected value and therefore is not considered in the following analysis.² Our bidder and target play the game of Figure 1. There are two strategic players in this game: **B**, the bidder, and **F**, the (first) target.³

Nature randomly endows the bidder with a “type” indicating the value of the corporation to the bidder, conditional on a successful takeover. Type V_L bidders (occurring with probability p) have a lower valuation than type V_H bidders (occurring with probability $1 - p$).⁴ The bidder, knowing his type, submits a bid (H or L) for the target.⁵

² The rationale for eliminating such a bid in the repeated game is deferred to Section 4

³ Previous models have considered both solitary and actively competing bidders. We consider solitary active bidders. Reputation is still relevant in situations involving multiple bidders (as long as they are not perfectly competitive). However, when competition is endogenously related to reputation, an additional cost to a low valuation reputation arises. I discuss this further in Section 7. In reality, bids are frequently uncontested. For example, in the sample used in Asquith (1983, pp. 53-54). 65 percent of successful mergers had only one active bidder.

⁴ This difference could be due to, among other things, asymmetric managerial or takeover skills, costs of capital, synergy gains, or beliefs.

⁵ We assume the “no bid” alternative is available only as the second bid in the encounter. That is, the analysis proceeds after the bidder has decided to undertake a takeover.

The target evaluates the bid and either accepts (*A*) or rejects (*R*) it. If the bid is rejected, the bidder decides whether to revise to a higher level (*H*) or terminate the acquisition (0). Immediately after an acceptance or a decision not to revise, and eventually after a single revision and its reappraisal, takeover activities terminate.

In Figure 1, node numbers are in parentheses above or to the left of the nodes. The bidder **B** moves at all nodes with *H*, *L*, or 0 branches and the target **F** moves at all nodes with *A* and *R* branches. Dotted lines represent information: the target does not know the bidder's type and cannot distinguish between the connected nodes. Payoffs to the bidder and target are given (in that order) at the terminal nodes of the tree. We assume that all parties are risk neutral and adopt the following conventions: $\epsilon = \underline{V}_B - L = \bar{V}_B - H$, $\alpha = \bar{V}_B - \underline{V}_B$, and $\beta = L - V_F$ where V_F is the value of the firm to the stockholder(s), absent a takeover.⁶

An important restriction in our structure is that revisions are strictly increasing ($H > L$). Such a restriction could be due to frictions in the bidding process or to the creation or arrival of weakly inferior competitors after the initial bid. Importantly, the revision structure grants the target some bargaining power in this otherwise bidder-dominated concession game. Once we have introduced an escalation structure on the bidding process, it follows that the model emerges from a more general model that permits any nonnegative bid and unlimited revision opportunities. The target can credibly reject offers below *L* and between *L* and *H*, knowing that perfection arguments imply that a strictly higher revision will follow. The bidder cannot credibly delay submitting *L* or *H* forever and the reduced model follows.⁷ Therefore, this model proxies for a more general game with multiple revisions and, importantly, permits the possibility of positive surplus to the target.

We consider only the sequential equilibria [Kreps and Wilson (1982b)] of our takeover game to ensure that threats to refuse to revise bids are credible in equilibrium.⁸ Throughout the text, we will associate the label for an action with the probability of taking that action. That is, if π is a strategy, instead of formally stating $\pi(A_3) = 1/3$, we will state $A_3 = 1/3$, which indicates that, in Figure 1, branch A_3 is

⁶ It is not essential that $H - L = \bar{V}_B - \underline{V}_B$. See note 7.

⁷ Even though our argument rationalizes the consideration of the *H* and *L* bid levels game, any two levels of bids—where the low bid is less than the low quality reservation price and the high bid is between the low and high quality reservation prices—give rise to the information revelation and reputation problem analyzed here. These arguments also generalize to any finite number of types.

⁸ The strategies selected for the bidder and target must be optimal, given beliefs that satisfy regularity property requiring that they be the limit of Bayesian beliefs when all possible actions have positive weight.

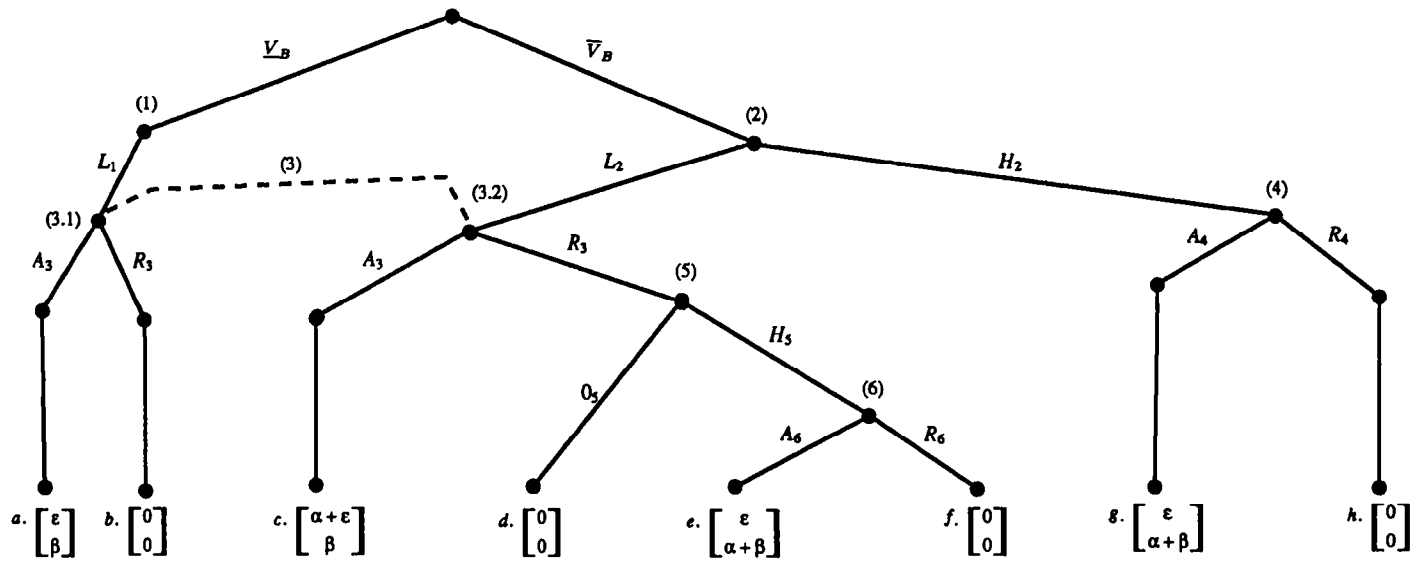


Figure 1
The single-target acquisition game
 Nature first selects the valuation of the bidder. A low bid (L) or a high bid (H) is submitted followed by acceptance (A) or rejection (R). Upon rejection of a low bid, either a high bid or no bid (0) is submitted. Payoffs for the bidder and target (in that order) are given at the terminal nodes of the tree.

Table 1
Sequential equilibrium strategies of the single-target game, by p

p	A_3	L_2	A_4	H_5	A_6
$\left(0, \frac{\alpha}{\alpha + \beta}\right)$	0	$\left[\frac{p\beta}{(1-p)\alpha}, 1\right]$	1	1	1
$\frac{\alpha}{\alpha + \beta}$	$[0, 1]$	$\frac{p\beta}{(1-p)\alpha} = 1$	1	1	1
$\left(\frac{\alpha}{\alpha + \beta}, 1\right)$	1	1	1	1	1

This table describes the probabilities with which actions A_3 , L_2 , A_4 , H_5 , and A_6 of Figure 1 are taken as p , the probability that the bidder is low quality, varies. α and β are taken from the payoffs in Figure 1.

taken with probability 1/3 conditional on reaching information set 3. Note that, by the structure of the tree, $R_3 = 2/3$.

Proposition 1. *The sequential equilibrium strategies of the single-target game for $p \in (0, 1)$, $\alpha > \epsilon > 0$, and $\beta > 0$, where each strategy is stated as a function of p , α , β , and ϵ , are as given in Table 1.*

Proof. See Appendix.

Corollary 1. *A high valuation bidder always rebids at the higher level, given that the initial low bid is rejected (i.e., $H_5 = 1$, $O_5 = 0$).*

The essence of the single-target game is that, in all cases, a low take-it-or-leave-it offer is not credible ($O_5 = 0$, $H_5 = 1$). It is always optimal for a bidder who can afford to pay more to offer to do so. Tough bidding, through declaring a low offer to be final, is not believable. Even though the high valuation bidder may buy the target for less than H (because of asymmetric information over bidder type), it is not because the bidder credibly issued a low take-it-or-leave-it bid. In Section 2, I demonstrate that such bids can be credible in a sequence of related acquisitions.

2. A Model of Multiple Takeovers with Revision

Now consider a bidder who sequentially approaches two targets. When the bidder's target valuations are correlated, the second target can learn about its valuation by considering bids made to the first target. Correlated valuations introduce a concern about bidding reputation. In the first encounter, the high quality bidder may hesitate (or even refuse) to revise his bid because of the detrimental impact such a revision has on his bargaining position in the next acquisition (or, more generally, in all of the following acquisitions). Refusal to revise

Table 2
Sequential equilibrium strategies of the two-target game, by p

p	A_1	L_2	O_3	L_9	A_{15}	A_{16}	L_{10}
$\left(0, \left(\frac{\alpha}{\alpha + \beta}\right)^2\right)$	0	$\frac{p\beta}{(1-p)\alpha}$	$\left[\frac{p\beta}{(1-p)\alpha}, \frac{\alpha}{2\alpha + \beta}\right]$	$[0, 1]$	0	$\frac{\epsilon}{\alpha}$	1
$\left(\frac{\alpha}{\alpha + \beta}\right)^2$	$[0, 1]$	1	$\frac{\alpha}{2\alpha + \beta} = \frac{p\beta}{(1-p)\alpha}$	$\left[\frac{\alpha}{2\alpha + \beta}, 1\right]$	0	$\frac{\epsilon}{\alpha}$	1
$\left(\left(\frac{\alpha}{\alpha + \beta}\right)^2, \frac{\alpha}{\alpha + \beta}\right)$	1	1	$\frac{p\beta}{(1-p)\alpha}$	$\left[\frac{p\beta}{(1-p)\alpha}, 1\right]$	0	$\frac{\epsilon}{\alpha}$	1
$\frac{\alpha}{\alpha + \beta}$	1	1	1	1	$[0, 1]$	$\left[\frac{\epsilon}{\alpha}, 1\right]$	1
$\left(\frac{\alpha}{\alpha + \beta}, 1\right)$	1	1	1	1	1	1	1

This table describes the probabilities with which actions A_1 , L_2 , O_3 , L_9 , A_{15} , A_{16} , and L_{10} of Figure 2 are taken as p , the probability that the bidder is low quality, varies. α , β , and ϵ are taken from the payoffs in Figure 2.

bids becomes an investment in a reputation from which he expects to profit in the future.

We will assume that the targets (**F** and **S**) have no shareholders in common and have valuations known to be positively correlated. For simplicity, we will assume that the targets are identical.⁹ The resulting two-target model is depicted in Figure 2, where $\beta = L - V_S$ has been used. The analogue to Proposition 1 for the two-target game is as follows.

Proposition 2. *The sequential equilibrium strategies for the two-target game for $p \in (0, 1)$, $\alpha > \epsilon > 0$, and $\beta > 0$, where each strategy is stated as a function of p , α , β , and ϵ , are as given in Table 2.*

Proof. See Appendix.

Corollary 2. *In all sequential equilibria, the threat implied by a low take-it-or-leave-it offer is credible in the sense that there is a strictly positive probability that a high valuation bidder refuses to revise a rejected low bid ($O_3 > 0$).*

The corollary indicates that reputation may be cultivated in the sequential takeover of firms. For a sufficiently high probability of a low quality bidder [$p > (\alpha/(\alpha + \beta))^2$], reputation is not tested since the first target accepts the low bid with certainty. When the probability

⁹ For learning to be relevant and reputation to arise, the valuations must be correlated. Our assumption of identical valuations abstracts away from the strategic sequencing problem that can occur with different but correlated valuations. Reputational concerns still arise in such a model as long as correlation among valuations is retained.

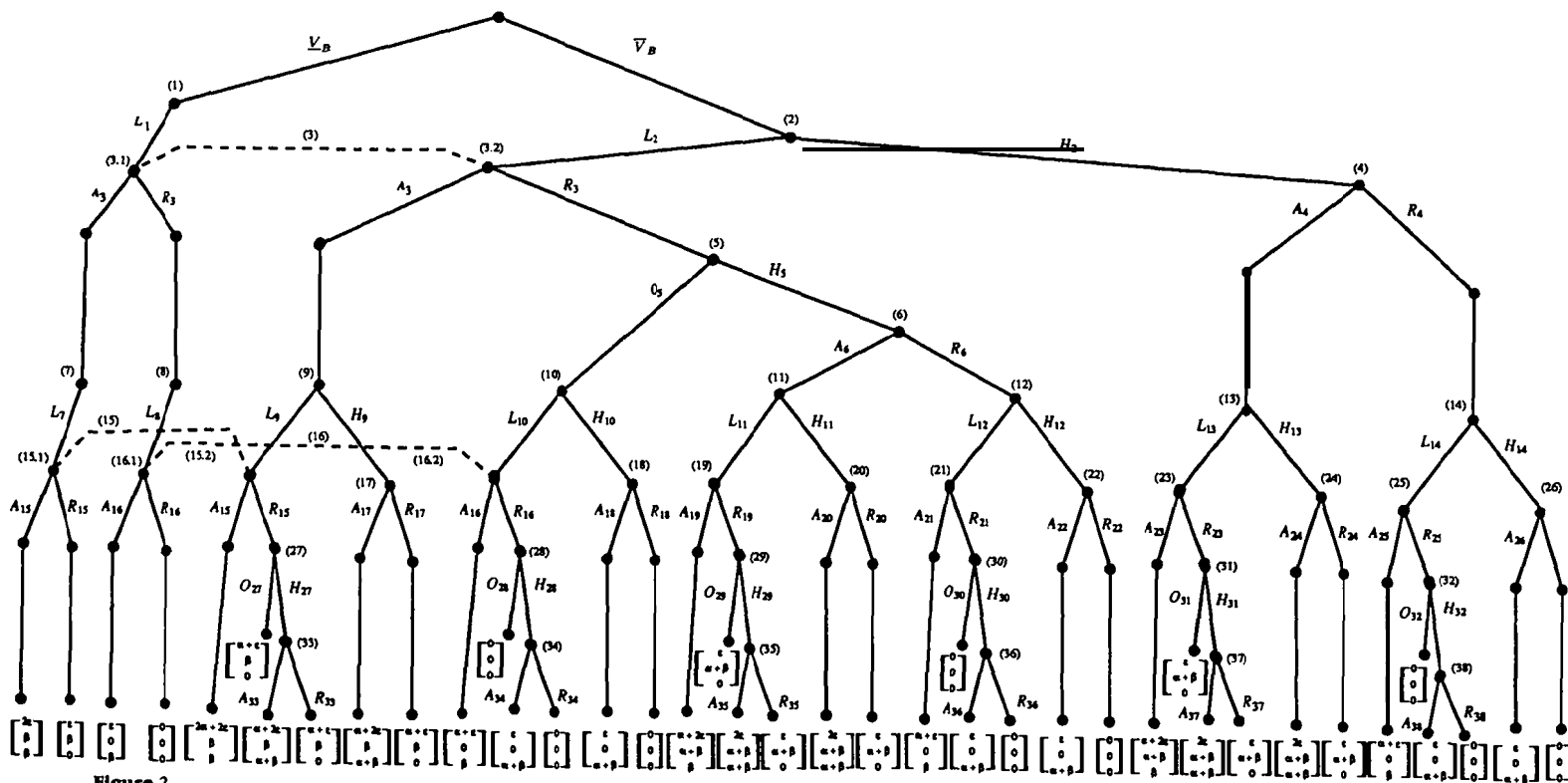


Figure 2
The two-target acquisition game

The moves in the bidding process, occurring identically for both targets, are ordered as in the single-target game of Figure 1. There is only one random selection of bidder type at the beginning of the game. Notational conventions are the same as in Figure 1, with payoffs to the second target as the last entry in the vector of payoffs at the terminal nodes.

of facing a low quality bidder is sufficiently small [$p \leq (\alpha/(\alpha + \beta))^2$], the implied threat, when tested, is carried out randomly since $0, \epsilon \in (0, 1)$. All pure strategy equilibria involve acceptance of a low bid and credible low take-it-or-leave-it offers.

Low quality bidders (single- or two-target) cannot profit by defecting from the pool of high and low valuation bidders. Defection involves revising the initial bid upward, which is unprofitable in the current, and any future, acquisitions. Such refusal to revise is mimicked (with positive probability) by the *continuing*, but not the *single-target*, high valuation bidder since the latter has no incentive to refuse revision. Separation occurs in the single-target game and pooling occurs in the repeated game.

It is straightforward to show that pooling is still possible in the equilibria of the game where the first target knows the quality of the bidder. This justifies the notion that refusal to revise is a reputational phenomenon that induces the first target to accept a lower bid even if the first target strongly suspects that the bidder could pay more.

3. Alternative Scenarios for Reputation

In our model, targets know whether a bid is low or high relative to the universe of possible bids. Their uncertainty is over the ability of the bidder to pay more. With such a structure, there is no advantage to achieving a reputation as a high premium bidder. Such a reputation leads targets to resist initial bids in expectation of revisions.

A model where bidders may profit from a high premium reputation may be achieved by introducing additional uncertainty over the generosity profile of the bidder. Consider the type of a bidder to be either “generous”—meaning that, for reasons exogenous to our current formal modeling, he desires to pay out more of his posttakeover value than appears necessary—or “stingy”—meaning that he desires to minimize the (total) premiums paid.¹⁰ High bids may now signal that he is “generous,” which inclines future targets to concede to knowingly low bids. Targets infer that the “generous” bidder they face must have received a low valuation draw for their firm and expect no revisions.¹¹ “Stingy” bidders may wish to mimic high bidding “generous” bidders early in a series of acquisitions to gain this benefit of the doubt later in the series.¹² In summary, when there is uncertainty about the bidder’s valuation and tendency toward generosity, high

¹⁰ I am grateful to the referee for suggesting this alternative method.

¹¹ Of course, this model requires imperfectly correlated valuations.

¹² Such a model of reputation is analogous to those of Kreps and Wilson (1982a) and Milgrom and Roberts (1982).

bids may signal generosity—which aids future bargaining—or high takeover gains—which is detrimental to future bargaining.

In our generosity-free model, low bids are more likely to be rejected when preceded by high bidding. In this alternative model, it is possible that low bids are more likely to succeed when preceded by high bidding. We will see in Section 5 that, contrary to the predictions of this alternative model, and consistent with our model of reputation, repeating bidders appear to pay lower premiums.

4. Empirical Implications

In our model, bidders cultivate reputation by offering low take-it-or-leave-it offers and refusing to revise them. Reputational concern is only one of many factors that would influence the bidding behavior of acquirers. Nonetheless, some interesting implications of our analysis invite empirical inquiry. For this discussion, let us assume that quality is drawn independently of the plans of the bidder regarding continuation of an acquisition program.

4.1 Continuing bidders are less likely to revise bids than single-target bidders

In this model, there is only one bid revision opportunity. Revising a bid reveals the fact that the bidder is high quality. Bidders who plan to be involved in future acquisitions resist such revisions. Table 2 shows that bid revisions for single-target bidders occur for $p \in (0, \alpha/(\alpha + \beta))$ (when the bidder uses his weakly dominating $L_2 = 1$ and $A_3 = 0$, $H_5 = 1$). For continuing bidders, revision can occur in equilibrium only when $p \in (0, (\alpha/(\alpha + \beta))^2]$ (where $A_3 = 0$) and is not certain there (since $0_5 > 0$). Therefore, in our model, revision is less likely from continuing bidders.

4.2 Successful premiums from continuing bidders are less, on average, than successful premiums from single-target bidders

Implications regarding the likelihood of bid revisions relate to the fact that revisions raise the posterior probability that the bidder is high quality. The bidder's ability and willingness to pay a higher premium, not necessarily the revision itself, generate the information used in forming this posterior. A high premium offer reveals information whether or not it was the outcome of an initial bid or a revision. Since high quality bidders wish to obscure their type by both refusing to revise low bids and failing to submit high bids, a more general implication of reputational concern is that consummated premiums are lower on average when reputational issues are important.

To see the premium implication more formally, note that H proxies

for a high premium and L proxies for a low premium relative to the target's preannouncement market price. For $p < \alpha/(\alpha + \beta)$, all successful bids from single-target bidders are at the maximum premium ($A_3 = 0$, $0_5 = 0$), whereas continuing bidders may have bids accepted at the minimum premium (for $A_3 > 0$, $L_2 > 0$). In fact, for higher p 's in this range, all successful bids are minimum premium bids. So, for this range of p 's, continuing bidders successfully acquire at lower premiums on average.

For $p = \alpha/(\alpha + \beta)$, some single-target high premium takeovers succeed (for $A_3 < 1$ since $0_5 = 0$), but no high premium bids are made by continuing bidders ($L_2 = 1$, $0_5 = 1$). Thus, for this p , continuing bidders succeed with lower premiums on average. Finally, for $p > \alpha/(\alpha + \beta)$, all bids are at low premiums and succeed. Hence, for all p , continuing bidders pay less premium (on average, if mixed strategies are used).

As long as there is sufficient diversity in p 's across a sample, successful bid premiums are lower, on average, from continuing bidders than from single-target bidders. In Section 5, I present a preliminary empirical investigation that indicates that observable tender premiums provide qualified support for this prediction.

Related to this, one might hypothesize that excess gains should be reflected in the bidder's stock price (if observable). However, our analysis points to two reasons why gains may not be strongly capitalized early in a series of acquisitions. First, it takes time for the profits to be achieved and reported. Second, if the true earnings were announced to, and believed by, the market, such returns would reveal bidder type to the public (and future targets) and undermine any attempt to build and profit from reputation. Continuing high quality bidders desire to "pool" with continuing low quality bidders. Pooling at low takeover gains announcements does not unravel. In our model, there are no current gains to defecting from the pool by announcing high takeover gains, and there are expected future losses as targets infer that they are valued more highly by the defecting bidder and therefore should hold out for a bid revision. No type of bidder gains by inducing such a belief.¹³ No one wishes to separate as they do in a typical disclosure model.

4.3 Continuing bidders are less likely to revise bids when acquisitions are related than when they are unrelated

Correlation in target valuations is an explicit assumption in our analysis. If future targets cannot infer any relevant information from current bidding behavior, the bidder has no incentive to refuse to revise

¹³ This is the same argument that allows us to ignore the possibility that the low quality bidder wishes to bid high in the first round.

a rejected bid. His behavior is identical to that of a single-target bidder. Bidders who seek to acquire targets with correlated valuations have more incentive to build a reputation than similar bidders who are acquiring targets with statistically independent or less highly correlated valuations. For example, a series of acquisitions within an industry might result in more highly correlated valuations and, therefore, more incentive to build reputation.

4.4 Successful premiums from continuing bidders in related acquisitions should be less, on average, than successful premiums from bidders in unrelated acquisitions

This is our third implication stated in a more general form that recognizes that reputation is related to the premiums offered and not just whether the bidder revises.

4.5 Continuing bidders are more likely to fail than single-target bidders

In our analysis, we assume that all acquisitions are profitable to consummate, if only marginally so for the bidder.¹⁴ Reputation building introduces the possibility of forgoing profitable acquisitions in order to obscure bidder quality ($L_2 > 0$, $A_3 = 0$, $0_5 > 0$). Acquisitions never fail in our single-target case. More generally, reputational concerns increase the probability of failure.

4.6 Successful takeovers are more likely late than early in a sequence of target

Reputation evolves by threatening to forgo profitable acquisitions. Early in a series, such threats are credible since revision reveals bidder type. Later in the series, reputation is established and targets concede more readily to low bid takeovers. As the end of the bidder's horizon approaches, he abandons reputational concern and revision becomes optimal. Both changes act to increase the likelihood of success for later acquisitions in a series.

5. An Exploratory Study of the Differential Premium Implication

If the preannouncement market price of the firm is MV , then, in the model, the two possible premiums, measured as gross returns, are H/MV and L/MV , where H and L are the total amounts paid for the firm. However, the model does not directly address how the premium is distributed to shareholders. If the transaction involves all shares,

¹⁴ Note that in a single acquisition the target gets almost all of the surplus, consistent with the established empirical result.

the relevant measure is the gross return of bid price over the preannouncement market value of a share, which is just the numerator and denominator of the above premium measures divided by the number of shares. If, however, the premium is paid over only a fraction of shares, the correct gross return is the number of shares bought multiplied by the per share premium, divided by the market value of the firm. We present results for both measures:¹⁵

$$P1_t = B/M_t, \quad P2_t = S(B - M_t)/MV_t,$$

where B is bid price in the tender offer, M_t is market price of the target's stock on announcement-date-relative time t , S is number of shares purchased in the tender offer, and MV_t is market value of the target on announcement-date-relative time t . $P1_t$ is the bid-to-price ratio, and $P2_t$ is the dollar premium measured as a percent of market value.

In our model, a continuing bidder is one who plays the game of Figure 2. In words, this bidder wishes to control (at least) two firms in sequence where no other bidders actively submit bids. To make this operational for empirical tests, a continuing bidder is taken to be one who is the sole bidder in at least two control tender offers in a given sample; that is, where (i) the bidder's holding prior to the tender offer are less than 50 percent of the outstanding shares, (ii) the offer, if successful, brings total holdings of the bidder to at least 50 percent of the outstanding shares, and (iii) there were no active competing bidders (i.e., there are no other bidders in the tender offer event).

It is possible that some bidders have only one bid in a sample, but undertake other bids after the sampling interval. These "new" continuing bidders introduce a bias against finding results in the direction indicated by the model. Their bids lower the mean of the single-target group and, thus, decrease the differences between samples. In a more general setting where the target is uncertain about the bidder's future intentions, such uncertainty affects the target's willingness to accept an initial low bid. This is not critical to our empirical investigation because high-valuation nonrepeaters falsely taken to be repeaters increase the incidence of low premiums in the nonrepeater sample. (Low-valuation bidders are always at low premiums.) It is also true that high-valuation repeaters falsely taken to be nonrepeaters will have more initial low offers rejected. If these repeaters have abandoned reputation building, then the consummated premium is

¹⁵ Sample means for these variables are indicated by the variable with an overbar. An additional subscript is added to indicate whether the mean is over the single-target (nonrepeater) or continuing (repeater) subsample.

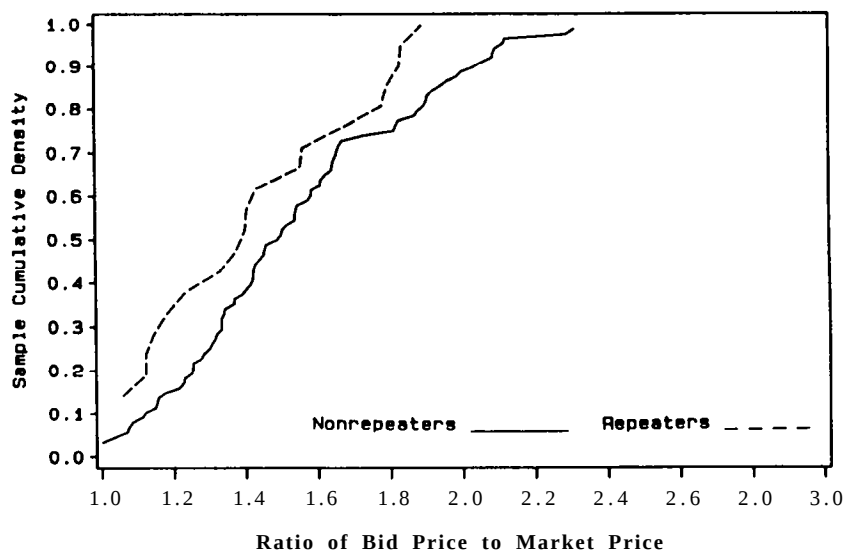


Figure 3
Sample CDF for the ratio of bid price to market price, measured 30 days prior to announcement

high. If they are still concerned about reputation, they will not revise and therefore will not be included in the *successful* offers that we consider. Therefore, under such uncertainty, our classification scheme decreases the average successful premiums from nonrepeaters and may increase the average successful premiums from repeaters. The implied bias is against finding lower premiums from repeaters.¹⁶ A single-target bidder is taken to be a bidder who satisfies the above three criteria for only one contest during the sampling period.¹⁷

Tender offer data for this initial investigation were extracted from the MERC Tender Offer Database. This database includes 500 ("almost all") tender offer events for the time period of October 1958 to September 1980. An event may include more than one offer from a bidder and offers from more than one bidder. For the purpose of clarity, the tests have been run only on cash tender offers.

Out of the 500 tender offer events, 181 are classified as being tender

¹⁶ In other related empirical inquiries (e.g., estimating the probability of initial offer acceptance across bidder type), it may be more important to adjust for the target's perception of the bidder's future opportunities. In correcting for differences in a target's perception, it might be beneficial to consider acquisition program announcements, statements in the SEC filings for the tender offer, or public statements made regarding the purpose for a specific acquisition. We do not pursue these issues further herein.

¹⁷ Status as a continuing bidder is set according to both cash and noncash offers, but only cash bids enter the tests. This is to provide for consideration of the cash offers of continuing bidders that do not always bid in cash.

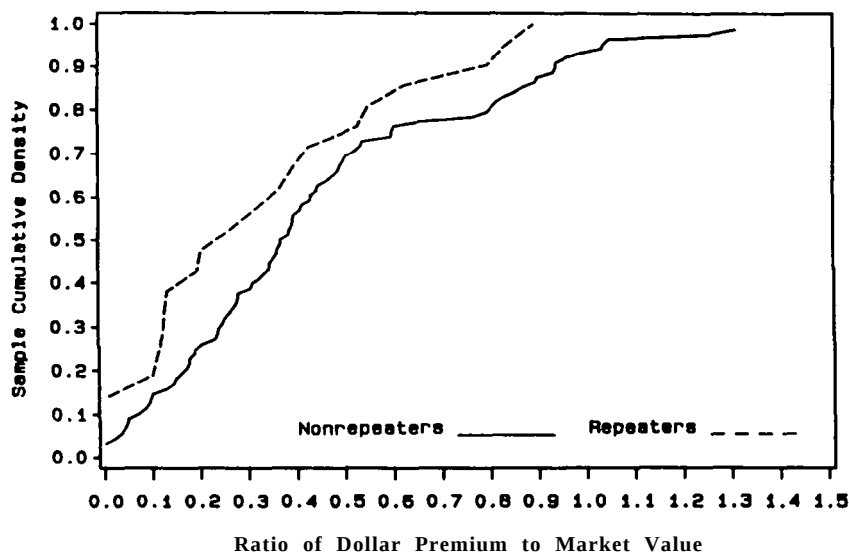


Figure 4
Sample CDF for the ratio of dollar premium to market value, measured 30 days prior to announcement

offers to control the firm by our definition. Of the 181, 47 were unsuccessful and 134 were successful. Of the 134 successful control offers, 25 involve multiple active bidders, and 109 involve solitary active bidders. In the subsample of 109 solitary bidder offers, 21 involve bidders classified as continuing and 88 involve bidders classified as single target.

The premium tests are based upon daily stock prices collected from the *Wall Street Journal* and *Standard & Poor's Daily Stock Record* and are restricted to targets that have return data available on the CRSP daily returns file during the time of the tender offer. Preliminary graphical analysis indicated no obvious systematic differences in market value, industrial classification, and year of bid across the continuing and single-target subsamples.

Sample CDFs for the premium measures 30 days prior to the announcement date¹⁸ are given in Figures 3 and 4. They provide a graphical presentation of the apparent stochastic dominance of premiums from single-target bidders. If, in the overall population, this stochastic dominance holds, then one concludes that the probability of a premium of X or lower is greater for targets of continuing bidders.

¹⁸ That is, these figures present the premiums from the two samples, ordered from low to high, where each observation is given equal weight within the sample distribution.

Table 3
Results of bid premium tests

30 days prior	Ratio of bid price to market price ($i = 1$)	Ratio of dollar premium to market value ($i = 2$)
$\bar{P}i_{-30, NR} - \bar{P}i_{-30, R}$	0.1477	0.1246
$\bar{P}i_{-30, NR} / \bar{P}i_{-30, R}$	1.5466	0.4495
t, p	1.77	0.0395
t, p	1.86	0.0360
MW, p	1.56	0.0599
		1.52
		0.0641

$\bar{P}i_{t, NR}$ ($\bar{P}i_{t, R}$), sample mean for premium measure i at event-date-relative time t for the nonrepeater (repeater) sample of 88 (21) observations; t , two-sample t -statistic for different means of populations with equal variances; t , approximate t -statistic for different means of populations with unequal variances; MW , Mann-Whitney/Wilcoxon ranks sum statistic; p , probability significance level.

The statistical results for the two premium definitions measured 30 days prior to announcement ($t = -30$)¹⁹ are presented in Table 3.

The t , approximate t , and Mann-Whitney/Wilcoxon ranks sum statistics provide tests for the equivalence of means across the two subsamples.²⁰ The results indicate differences in bid premiums in the predicted direction of 14.77 percent and 12.46 percent with p -levels ranging from .0395 to .0641. The evidence suggests that the null hypothesis of weakly higher bid premiums from continuing bidders is suspect.²¹ We performed an event study on the same data. Consistent with the direct measures discussed above, the event study results indicate lower cumulative residuals for targets of repeating bidders, and slightly higher p -levels for the means tests. In summary, the data presented in Table 3 are consistent with the predictions of our reputation model, and appear to be inconsistent with the hypothesis that continuing bidders pay the same or more.

Two previous empirical studies that bear some relationship to our empirical findings are those of Mikkelsen and Ruback (1985) and Holderness and Sheehan (1985). Mikkelsen and Ruback address the difference in target returns for a subset of merger and tender offers where no outstanding takeover proposal exists. They consider the sum of a series of two-day excess returns from various events during the takeover process and cross-sectionally regress this sum on a dummy variable for the repeater status of the bidder to produce a t -test for

¹⁹ All tests were duplicated at 0, 2, 10, and 20 days preceding the announcement date. The results are consistent in sign, decreasing in magnitude as the announcement date approaches (possibly because of leakage), and have higher p values.

²⁰ The approximate t 's are calculated by a method proposed by Satterthwaite, which is described in Snedecor and Cochran (1980). Approximate t -statistics provide an idea of robustness of the t -test in means to heteroskedasticity in the populations. The Mann-Whitney/Wilcoxon ranks sum statistic is the nonparametric test described in Conover (1980) and acts as a test of equality of distributions and, additionally, as a test of means when the distributions differ only by a location parameter.

²¹ Note that an alternative model leading to a desirable reputation as "generous" would imply premium differences in the opposite direction of those presented herein.

the difference in means. Consistent with our reputational story, they find a difference of 9.35 percent less excess return to successful targets of bidders who repeat at least six times. The level of abnormal returns were 22.57 percent and 13.22 percent, respectively, for targets of nonrepeaters and repeaters. This is insignificant ($t = -.26$) in their study, which had a sample of 16 targets of nonrepeaters and three targets of repeaters. Holderness and Sheehan consider 13-d filing announcement effects of “raiders” versus those of a random sample.²² They find that the announcement of a 13-d filing has a more positive effect on returns to targets of “raiders” than on returns to targets of a random sample. This result holds only at the two-day interval around the announcement. Although their results may be relevant in the discussion of bidder reputation, they are announcement effects for positions held and not necessarily for takeovers. The effects may include an adjustment for an increased probability of a takeover in the “raider” sample relative to the random sample. Our investigation is concerned with known takeover activities, not just position holdings that could be related to takeover activities. Although the results of these studies are provocative, their samples and event definitions are quite different from those in our study.

6. Other Implications

From the bidder’s viewpoint, our analysis introduces three additional implications. First, bidders should be anxious to convince the target (and market) that related acquisitions will continue (i.e., that the target is only one in a series of targets constituting an acquisition program). Credible precommitment to an acquisition program may involve a change in structure (e.g., reorganizing as a limited partnership or spinning off a subsidiary dedicated to acquisitions). The resulting increase in bargaining power allows them to improve the chance of successful low premium acquisitions. The market should react positively to a credible announcement of an acquisitions program. Related to this, Schipper and Thompson (1983) find a positive announcement effect for acquisition programs.

Second, the bidder has an incentive to downplay possible acquisition gains. Convincing the market that high potential gains exist only increases the chance that more of those gains would be paid out as premiums or that the tender offer would fail because of free-riding. For our model, the incentive to downplay gains arises because success probabilities vary over p . Suppose the target’s prior probability of low quality is some $p \in (0, (\alpha/(\alpha + \beta))^2)$. Low bids are then rejected

²² A 13-d is filed when an investor takes a position of at least 5 percent of a publicly traded firm’s equity. Subsequent 13-d’s are filed for each increase of at least 2 percent.

in equilibrium. (See Table 2 for $A_3 = 0$.) If, by credible communication, the bidder could increase the targets' perceptions of p to $p > (\alpha/(\alpha + \beta))^2$, then low bids are accepted in equilibrium. One interpretation for this incentive is that it may be worthwhile to convince the target that the takeover is not due to inefficient management. Rather, the bidder may claim that the target is a well-run company offering small bidder-specific synergies; that is, "They are an efficient ball bearing manufacturer and we will be more competitive with an in-house ball bearing supplier." Although this may be the case, in our model all bidders have an incentive to claim such a motivation, and therefore the credibility of this message is suspect.

Last, continuing bidders have an incentive to obscure previous acquisition gains while they continue to acquire. Use of obfuscatory accounting manipulations or nonpublic firms might prove effective in avoiding premature disclosure of large gains.

From the target's viewpoint, our analysis highlights several issues relevant when mounting a resistance campaign. At a minimum, target management should realize they are probably not the first object of the bidder's acquisitive intentions. Resisting the bid may or may not bring forth revision, depending on the reputation building needs of the bidder. Past behavior is a clue to the (possibly suboptimal) strategy being pursued by the bidder.

Second, if the target has any influence over the profile of the bidder, *ceteris paribus*, it prefers to find a bidder who has little or no reputational concerns (e.g., one with no known future acquisition plans or a conglomerate). A conglomerate's acquisitions tend to be unrelated, thereby diminishing the ability to profit from reputation building related to correlated valuations.

Finally, we can reflect on the role of "raiders" and conglomerates in the acquisitions market. A continuing bidder with related acquisitions cannot credibly claim to be offering the highest possible bid, if a bidder exists with equal ability and no reputational concerns. Such reputation-free bidders include single-target bidders and conglomerates for whom the target is unrelated to their future targets. While it may not be the case that conglomerate target valuations are statistically independent, it seems plausible that they are less highly correlated than a "raider's" targets. A "raider" may have a particular strategy to apply to an acquired firm (e.g., 100 percent payout, divest unrelated businesses), and targets frequently (although not always) fall within similar industrial lines related to the skills profile of the "raider." Conglomerate targets need not be related, may involve diverse industrial sectors, and may not be the object of a particular strategy. Consequently, one might order bidders by increasing reputational concern or the target's preference as follows: (1) bidders who

do not plan to continue acquiring, (2) conglomerates, and (3) “raiders.”

7. Concluding Remarks

I argue that the market for corporate control provides some participants with incentives to build reputation. In particular, I construct a model of takeovers where a bidder attempts to acquire targets with correlated valuations sequentially. This analysis indicates that credible low take-it-or-leave-it offers arise from bidder concerns about rational learning by future targets. To preserve future targets’ uncertainty about his type, a bidder who can profitably revise his bid mimics bidders who cannot profitably revise, producing a pooling at low bids. I interpret such mimicking as an attempt to propagate reputation.

In addition to addressing the relationship between bids in a series of acquisitions, this analysis introduces several potentially testable implications. Tender premiums, probabilities of revision, and success rates should be lower for continuing bidders. Reputational concerns, and the resulting premium and revision implications, are strongest early in a series of related acquisitions.

The analysis highlights additional implications for participants in the market for corporate control. Repeating bidders have an incentive to announce an acquisitions program. During the program, bidders may wish to downplay past acquisition gains by accounting manipulations or by nonpublic business structures. Targets facing a continuing bidder who has abdicated reputation building will more easily be able to extract higher premiums. Targets prefer (other things being equal) to be acquired by bidders without reputational concern. A “raider” may be thought to have more reputational concern than conglomerates who, in turn, have more reputational concern than single-target bidders. The lower bids expected from “raiders” can be seen as an attempt to avoid future costs related to reputation, rather than as evidence of a desire to exploit current target shareholders.

I present an introductory data study to indicate the feasibility of an acquisition reputation model and the testable nature of its implications about cross-target bidding dynamics. I have left formal testing of the hypotheses with reasonable sample sizes to future work. Considering the time-series behavior of individual bidders appears to be an interesting and potentially fruitful area of future empirical work.

From a theoretical modeling perspective, one obvious extension of my model is one that integrates cross-target and cross-bidder inference problems. In my model, reputational incentives relate to future target inference problems and provide incentives for *low* bidding. When cross-bidder inference is introduced in static models, preemp-

tive *high* bidding can arise. What happens when bidders wish to discourage competition (current and future) through high initial bidding, but also wish to avoid convincing future targets that they are high valuation bidders? A model that incorporates both types of posturing could shed some light on balancing reputation and endogenous competition in the acquisitions market.

Appendix

The proof analyzes local best replies under beliefs that are derived from consistent assessments and calculates their fixed point. Selten (1975) shows that equilibrium in local best replies is an equilibrium in best replies for perfect equilibria. The rationale he gives may be applied equally to sequential equilibria because it uses only the fact that a belief at each node is known and consistent with knowledge of one's own past moves. This condition is implicit in the definition of sequential equilibrium. In all that follows, "best reply" is used in place of the more technically correct term "local best reply." Only consistent beliefs are considered. The unique consistent beliefs for each node can be derived from the hypothesized strategies. In some cases, the stated best replies are only the relevant portions (i.e., the portions that are active in equilibrium).

Equilibria of the single-target game

The following are the relevant best replies:

$$A_6 = 1, \quad H_5 = 1, \quad A_4 = 1;$$

$$A_3(L_2) = \begin{cases} 1, & \text{if } L_2 < \frac{p\beta}{(1-p)\alpha}, \\ 0, & \text{if } L_2 > \frac{p\beta}{(1-p)\alpha}, \\ [0, 1], & \text{if } L_2 = \frac{p\beta}{(1-p)\alpha}; \end{cases}$$

$$L_2(A_3) = \begin{cases} 1, & \text{if } A_3 > 0, \\ [0, 1], & \text{if } A_3 = 0. \end{cases}$$

Proof of Proposition 1

It should be remembered that $p\beta/(1-p)\alpha > 0$. Additionally, the equivalence of the two conditions $p\beta/(1-p)\alpha > 1$ and $p > \alpha/(\alpha + b)$ (and the related less than and equals relations) is used repeatedly. We proceed by cases to find the fixed points of the best reply correspondences.

Case 1: $p < \alpha/(\alpha + \beta)$, $A_3 = 0$. Optimality for player F (of $A_3 = 0$) requires that either $L_2 > p\beta/(1 - p)\alpha$ or $L_2 = p\beta/(1 - p)\alpha$. Consider the following subcases.

Subcase 1.1: $p < \alpha/(\alpha + \beta)$, $A_3 = 0$, $L_2 > p\beta/(1 - p)\alpha$. The best reply of F implies $A_3 = 0$, which is not a contradiction of the supposed case. This implies that any $L_2 \in [0, 1]$ is a best reply to $A_3 = 0$, which is consistent with the supposition of the subcase. Together with $p < \alpha/(\alpha + \beta)$ and $L_2 > p\beta/(1 - p)\alpha$, it must be that $A_3 = 0$, $L_2 \in (p\beta/(1 - p)\alpha, 1]$, and $A_4 = A_6 = H_5 = 1$ are the only sequential equilibria for this subcase.

Subcase 1.2: $p < \alpha/(\alpha + \beta)$, $A_3 = 0$, $L_2 = p\beta/(1 - p)\alpha$. The best reply of F implies $A_3 \in [0, 1]$, which is not a contradiction of the supposed case. Since $p\beta/(1 - p)\alpha > 0$, we must have $L_2 \in (0, 1]$. Since $p < \alpha/(\alpha + \beta)$, it follows that $L_2 = p\beta/(1 - p)\alpha < 1$. Therefore, $A_3 = 0$, $L_2 = p\beta/(1 - p)\alpha$, and $A_4 = H_5 = A_6 = 1$ is the only sequential equilibrium strategy for this subcase.

Combining these two subcases shows that $A_3 = 0$, $L_2 \in [p\beta/(1 - p)\alpha, 1]$ and $A_4 = H_5 = A_6 = 1$ are the only sequential equilibrium strategies for this case.

Case 2: $p < \alpha/(\alpha + \beta)$, $A_3 > 0$. Optimality for player F requires that either $L_2 < p\beta/(1 - p)\alpha$ or $L_2 = p\beta/(1 - p)\alpha$ because of the assumption of $A_3 \neq 0$. Since $p < \alpha/(\alpha + \beta)$, it must be that $L_2 < 1$. But optimality for player B requires $L_2 = 1$, which is a contradiction. No equilibria exist for this case.

Case 3: $p = \alpha/(\alpha + \beta)$, $A_3 = 0$. Optimality for player F requires that either $L_2 > p\beta/(1 - p)\alpha$ or $L_2 = p\beta/(1 - p)\alpha$; since $A_3 = 0$. Since $p\beta/(1 - p)\alpha = 1$, the first is not possible, leaving only $L_2 = p\beta/(1 - p)\alpha$. $A_3 = 0$ is trivially a best reply to this L_2 . $A_3 = 0$, $L_2 = p\beta/(1 - p)\alpha = 1$, and $A_4 = H_5 = A_6 = 1$ is the only sequential equilibrium strategy for this case.

The sequential equilibrium strategies of Cases 1 and 3 may be combined in a convenient mathematical representation since in Case 3, $p\beta/(1 - p)\alpha = 1$ and thus $L_2 \in [p\beta/(1 - p)\alpha, 1]$ is $L_2 = 1$. This subset of equilibria is given in row 1 of Table 1.

Case 4: $p = \alpha/(\alpha + \beta)$, $A_3 > 0$. Optimality for player F requires $L_2 < p\beta/(1 - p)\alpha$ or $L_2 = p\beta/(1 - p)\alpha$. Since $p\beta/(1 - p)\alpha = 1$, $L_2 \leq 1$. $L_2 < 1$ is not a best reply to $A_3 > 0$, therefore $L_2 = 1$. At $L_2 = 1 = p\beta/(1 - p)\alpha$, the best reply of F is $A_3 \in [0, 1]$, but the case requires $A_3 > 0$. The only sequential equilibrium strategies for this case are $A_3 \in (0, 1]$, $L_2 = 1 = p\beta/(1 - p)\alpha$, and $A_4 = H_5 = A_6 = 1$.

The sequential equilibrium strategies of Cases 3 and 4 have been combined and stated in row 2 of Table 1.

Case 5: $p > \alpha/(\alpha + \beta)$, $A_3 = 0$. When $p > \alpha/(\alpha + \beta)$, it must be that $L_2 < p\beta/(1 - p)\alpha$, since $p\beta/(1 - p)\alpha > 1$. $A_3 = 1$ is a best reply. Thus, the contradiction shows that no sequential equilibrium strategies exist for this case.

Case 6: $p > \alpha/(\alpha + \beta)$, $A_3 > 0$. As in Case 5, $L_2 < p\beta/(1 - p)\alpha$ implies $A_3 = 1$, which implies $L_2 = 1$. Thus, the only sequential equilibrium strategy for this case is $A_3 = L_2 = A_4 = H_5 A_6 = 1$.

The sequential equilibrium strategy of Case 6 and one of the equilibria of Case 4 are combined and given in row 3 of Table 1.

Although perhaps counterintuitive, Table 1 shows that even though it is a weakly dominating strategy, L is not always the first bid ($L_2 < 1$, $H_2 > 0$). When the equilibrium strategy dictates a rejection of initial low offers with probability 1 ($R_3 = 1$), then the bidder is indifferent to starting with L . Any value of $L_2 \in [p\beta/(1 - p)\alpha, 1]$ calls forth a best reply of $R_3 = 1$, which is compatible with this range of L_2 . However, if $L_2 < p\beta/(1 - p)\alpha$, the probability of being at 3.1 implies that this cannot be in equilibrium with $R_3 = 1$. ■

Equilibria of the two-target game

The relevant best reply is 1 at A_4 , R_{23} , H_{31} , A_{37} , A_{24} , R_{25} , H_{32} , A_{38} , A_{26} , A_6 , R_{19} , H_{29} , A_{35} , A_{20} , R_{21} , H_{30} , A_{36} , A_{22} , A_{17} , A_{18} , H_{27} , A_{33} , H_{28} , and A_{34} . Additionally,

$$\begin{aligned}
 L_9(A_{15}) &= \begin{cases} 1, & \text{if } A_{15} > 0, \\ [0, 1], & \text{if } A_{15} = 0; \end{cases} \\
 L_{10}(A_{16}) &= \begin{cases} 1, & \text{if } A_{16} > 0, \\ [0, 1], & \text{if } A_{16} = 0; \end{cases} \\
 L_{11} &= L_{12} = L_{13} = L_{14} = [0, 1]; \\
 0_5(A_{16}) &= \begin{cases} 0, & \text{if } 0 \leq A_{16} < \epsilon/\alpha, \\ [0, 1], & \text{if } A_{16} = \epsilon/\alpha, \\ 1, & \text{if } \epsilon/\alpha < A_{16} \leq 1; \end{cases} \\
 L_2(A_3, A_{16}) &= \begin{cases} [0, 1], & \text{if } A_3 = 0 \text{ and } A_{16} \leq \epsilon/\alpha, \\ 1, & \text{otherwise;} \end{cases}
 \end{aligned}$$

$$A_3(0_5, L_2)$$

$$= \begin{cases} 1, & \text{if } (0_5 \neq 1 \text{ and } \frac{p}{p + (1-p)L_2} > 1 - \frac{\beta}{(1-0_5)(\alpha + \beta)}) \text{ or } 0_5 = 1, \\ 0, & \text{if } (0_5 \neq 1 \text{ and } \frac{p}{p + (1-p)L_2} < 1 - \frac{\beta}{(1-0_5)(\alpha + \beta)}), \\ [0, 1], & \text{if } (0_5 \neq 1 \text{ and } \frac{p}{p + (1-p)L_2} = 1 - \frac{\beta}{(1-0_5)(\alpha + \beta)}); \end{cases}$$

$$A_{15}(L_9, L_2) = \begin{cases} 1, & \text{if } \frac{p}{p + (1-p)L_2L_9} > \frac{\alpha}{\alpha + \beta}, \\ 0, & \text{if } \frac{p}{p + (1-p)L_2L_9} < \frac{\alpha}{\alpha + \beta}, \\ [0, 1], & \text{if } \frac{p}{p + (1-p)L_2L_9} = \frac{\alpha}{\alpha + \beta}; \end{cases}$$

$$A_{16}(L_2, 0_5, L_{10}) = \begin{cases} 1, & \text{if } \frac{p}{p + (1-p)0_5L_2L_{10}} > \frac{\alpha}{\alpha + \beta}, \\ 0, & \text{if } \frac{p}{p + (1-p)0_5L_2L_{10}} < \frac{\alpha}{\alpha + \beta}, \\ [0, 1], & \text{if } \frac{p}{p + (1-p)0_5L_2L_{10}} = \frac{\alpha}{\alpha + \beta}. \end{cases}$$

Proposition 2 is proved in a manner analogous to the proof of Proposition 1, except that the arguments are far more tedious. The fixed points of the best reply correspondences are given in Table 2 of the text. The rather lengthy formal exposition has been omitted here for the sake of brevity and is available by request.

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