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Similar bidders in takeover contests

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ABSTRACT

When bidders in a corporate takeover have related resources and post-acquisition strategies, their valuations of a target are likely to be interdependent. This paper analyzes sequential-entry takeover contests in which similar bidders have correlated private valuations. The level of similarity affects information content of bids and bidding competition. Our model predicts that expected acquisition prices and the probability of multiple-bidder contests are the highest for intermediately similar bidders. We test these predictions in laboratory experiments in which we control the similarity between bidders. The experimental data confirm the non-monotonic effects of similarity on prices and on the frequency of multiple-bidder contents.

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1. Introduction

Returns in mergers and acquisitions for acquirer and target not only depend on the value that is created, but also on acquisition premium that is paid. Empirical research indicates that, overall, acquisitions do create value (Andrade et al., 2001; Bargeron et al., 2008; Betton et al., 2008) but gains accrue mostly to targets. Acquiring firms' returns are, on average, close to zero and exhibit large variation (Stulz et al., 1990; Leeth and Borg, 2000; Fuller et al., 2002; Moeller et al., 2005). Taken together, the evidence suggests that acquisition prices are determinative for the division of takeover surplus.

The underlying causes of this variation in prices and returns have been subject to continuous scrutiny in the empirical literature. Surprisingly, the level of competition as measured by the number of bidders does not seem to explain this variation (Boone and Mulherin, 2008).[1] However, characteristics of buyers do appear to be successful in explaining returns.[2]

Guided by this evidence, we develop a model of takeover contests in which the characteristics of potential acquirers matter and affect the intensity of competition. We want to take into account that potential acquirers can be similar or dissimilar because they may have very similar or very unique resources, capabilities, and post-acquisition strategies. More

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[1] Boone and Mulherin (2008) use an extensive data set on potential bidders and control for the endogeneity between returns and the level of competition. Some earlier studies using less detailed data sets show either no significant relation (Kale et al., 2003; Betton et al., 2008) or mixed results (Schwert, 2000).

[2] Bidder size is responsible for a large portion of variation in returns (Moeller et al. 2004, 2005). Acquirers with more uncertain growth prospects gain less in acquisitions (Moeller et al., 2007). Furthermore, the premiums paid to targets depend significantly on the public status of acquirers and whether acquirers are operating firms or private equity funds (Bargeron et al., 2008). Among operating firms, acquirer returns depend on the strategic objectives of acquiring firms (such as vertical integration, horizontal integration, or diversification) (Walker, 2000).

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specifically, we analyze a model of two potential bidders that may sequentially enter a takeover contest. If the bidders are similar, their private values of a target are correlated. After observing the initial bid, the second bidder may decide to pay an entry cost to learn its valuation and to participate in the contest. Entering takeover contests is costly since information on target value requires due diligence costs such as fees for consultants, lawyers and investment bankers. The first bidder may offer a high (preemptive) bid in an attempt to deter the competing firm from entering. Alternatively, a low (accommodating) offer by the first bidder may induce entry by the second bidder and start a competitive auction. The signaling effect of an opening offer depends critically on the similarity between bidders.

The interdependence of bidders' valuations has two opposing effects on contest participation. On the one hand, a bid from a bidder that is similar creates a greater informational externality and thereby encourages entry by a rival. On the other hand, if bidders are more closely related, the bidding contest is expected to be more competitive. The resulting high prices reduce expected payoffs from participation and thus discourage entry. We show that neither of the effects is dominant but their relative strengths depend on the level of similarity and radically affect bidding strategies, price, and bidders' participation. Our analysis provides several important new insights and implications.

First, conditional on observing a takeover, the probability of single-bidder acquisitions and multiple-bidder contests varies in similarity between potential bidders. Multiple-bidder contests are most likely between intermediately similar competitors, due to the strength of informational externalities of initial bids that attracts followers. Initial bids from very similar bidders promise an even higher expected target value, but also indicate a fierce bidding competition. As a result, single-bidder contests are expected mostly between dissimilar (when informational externalities are low) and very similar competitors (when potential competition is high).

Second, expected prices for targets demonstrate an inverted U-shape in the level of bidder similarity. This pattern applies for prices in both single-bidder acquisitions and in multiple-bidder contests. The initial bid embeds informational externalities that signal value, making it attractive for competitors to enter. In single-bidder acquisitions, this means that high preemptive bids are required to deter a competitor that shares some of the sources of value. However, if bidders become very similar, the competition effect on prices starts to dominate informational externalities, and deterrence is possible with a relatively low preemptive bid. When multiple-bidder contests occur, competitive bidding yields higher prices when rivals are more similar. However, when rivals are almost identical, the initial bidder will accommodate only if its valuation is low, but this means that the expected price in the contest will be low as well.

Third, our analysis indicates that in an environment with interdependent values, the similarity of potential bidders is an important measure of competition intensity. Targets' returns are higher in single-bidder acquisitions than in multiple-bidder contests for any given level of similarity because a premium is required to preempt a rival. However, this does not necessarily imply that empirical data should demonstrate higher target returns in single-bidder acquisitions. As discussed above, multiple-bidder contests are most likely at intermediate levels of similarity at which expected prices are the highest. Conversely, single-bidder acquisitions are most likely at very low and very high levels of similarity when expected prices are lower. This implies that, in a cross-section of acquisitions, the relation between the number of bidders and target returns may show either sign if the level of similarity is not controlled for.

The theoretical predictions of the model are difficult to test empirically using historical acquisition data because information about the identity of preempted bidders, and so their similarity with acquirers, is not readily observable by researchers. To overcome this difficulty, we employ a laboratory experiment with financially well-trained subjects. Relative to tests using field data where many relevant factors change simultaneously, controlled environments of laboratory experiments allow for clear comparative static tests. At the same time, laboratory experiments raise questions about external validity—is the behavior of students-subjects informative about investment strategies of firms? We believe that the experiment can inform us about the validity of our theory. First, the academic literature on takeovers shows that *individuals* play an important role in investment and acquisition decisions. CEOs, like all other people, have behavioral biases and these biases not only drive takeovers (Roll, 1986; Berkovitch and Narayanan, 1993), but also affect premiums paid in acquisition (Hayward and Hambrick, 1997; Malmendier and Tate, 2008; Levi et al., 2010). Second, human behavior often deviates from theoretical predictions even in simple auctions [see Kagel (1995) for a survey]. People in general demonstrate systematic biases that may intensify some predicted forces and weaken others. The aim of our experiment is to verify if people respond to the tradeoffs in our model. As such, a laboratory test is a first and important step to validate the relevance of our theoretical predictions to corporate environments.[3]

The experimental design replicates the model specification. Two groups of subjects play the roles of first or second bidder in an auction for a target. Their valuations are correlated with a correlation coefficient called "similarity level". The first bidder chooses his first bid and the second bidder can decide to enter or not depending on the first bid and the similarity level. In this way, we collect data about preemptive bidding behavior and conditional entry decisions.

The experimental results support the main insights of the model. Our first observation is that high first bids deter second bidders from entering in line with the preemption arguments. We then find that the frequency of multiple-bidder contests demonstrates a non-monotonic pattern in similarity levels. Furthermore, prices in both single- and multiple-bidder contents first increase in similarity and then decrease, as predicted by the theory.

[3] Several other papers also use experiments to test corporate takeovers theories, e.g., Kale and Noe (1997), Weber and Camerer (2003), Croson et al. (2004), Gillette and Noe (2006), and Kogan and Morgan (2010).

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